

NAME OF THE PROJECT:

**MURGABEDA IRON ORE MINES OF,
SRI. D.R PATNAIK**

CLEARANCE LETTER NO.& DATE:

**SEIAA CLEARANCE LETTER NO.: SEIAA/342, dated.
04.09.2010.**

PERIOD OF COMPLIANCE REPORT:

APRIL - 2020 TO SEPTEMBER - 2020

M/S. D. R. PATNAIK

Mines Owner

(A UNIT OF D.R. PATNAIK & ALTRADE GROUP)

Ref: MIM/DRP/EC/COMP/2020/ 57

Date: 24.11.2020

The Member Secretary,

State Environment Impact Assessment Authority
Ministry of Environment, Forests & Climate Change,
Government of India,
Qr. No-5RF-2/1, Unit-IX
Bhubaneswar -751 022.
E Mail: seiaaorissa@gmail.com

Sub: Environmental Clearance of Murgabeda Iron Ore Mining Project of Sri D.R. Patnaik. – Regarding six monthly compliance reports for the period April 20 to September 20.

Ref: 1. SEIAA Clearance letter no. SEIAA/342, dated. 04.09.2010
2. MoEF&CC notification no. 4624 (Published in Gazette of India) dt. 26.11.2018

Sir,

With reference to the above cited subject and gazette notification, we are submitting herewith the six monthly compliance report along with the comprehensive data analysis only in soft copy by e-mail of Murgabeda Iron Ore Mines of Sri. D.R Patnaik for the period of April 20 to September 20.

This for your kind information, please.

Yours sincerely,

**For Murgabeda Iron Ore Mine,
Sri. D.R. Patnaik**

Mines Manager

Murgabeda Iron Mines

Mines Manager

M/s D R Patnaik

Encl. : As above & Compliance Copy with detailed analysis report and supporting photographs and monitoring data.

Copy to:

1. The Director (S), Regional Office (EZ), Ministry of Environment, Forest & Climate Change, A-31, Chandrasekharapur, Bhubaneswar.
E mail: roez.bsr-mef@nic.in
2. The Zonal Officer, Central Pollution Control Board, Eastern Zonal Office, Kolkata, E mail: zokolkatta.cpcb@nic.in
3. The Chairman, State Pollution Control Board, Orissa, A/118, Nilakantha Nagar, Unit – VIII, Bhubaneswar – 751012,
E mail: paribesh1@ospcbboard.ord
4. The Regional Director, Central Ground Water Board, Government of India, South Eastern Region, Bhubaneswar – 751030.
E mail: rdser-cgwb@nic.in

Six Monthly EC Compliance Report

Period: April-2020 to September-2020



MURGABEDA IRON ORE MINES

M/s. D. R. PATNAIK

At – Boneikela, PO - Joda,

Dist. – Keonjhar, Odisha – 758 034

www.miom-drp.com

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**

Sl.No.	SPECIFIC CONDITIONS	PRESENT STATUS
1	The applicant (Project Proponent) will take necessary measures for prevention, control and mitigation of Air Pollution, water pollution, noise pollution and land pollution including solid waste management as mentioned by him in form-I, final EIA reports and Environment management Plan (EMP) in compliance with prescribed statutory norms and standards.	The project proponent has taken up adequate preventive measures for prevention and control of air pollution by regular water sprinkling & plantation, water pollution by providing settling pond, check dam with garland drains during the monsoon season, preventive and scheduled maintenance of the HEMM are being carried out at regular intervals to avoid/ mitigate any noise induced pollution, at present the solid waste generated is very fewer and the generated amount is being utilized for internal road making and its maintenance. Apart from that regular environmental monitoring being carried out as per the MOEF&CC & SPCB guidelines. The photo of the same is enclosed as photo-1 & 2 .
2	The applicant will take necessary steps for socio economic development of the people of the area on need based assessment for providing employment, education, health care, drinking water and sanitation, road and communication facilities. After a detailed primary Socio-Economic survey in core zone and buffer.	Different projects has undertaken in consultation with “ JANASADHANA ” for the socio-economic development of the local people belongs to adjoining villages. A detailed implementation status report of the same is given in Annexure # 1 .
3	The applicant will comply with the points, concerns and issues raised by the people during public hearing on 29 th June, 2009 in accordance with the commitments made by him thereon.	We have full-filled the commitment regarding the demands raised during the public hearing and compliance are made as per the commitments. All the public hearing issues has been complied as per the commitment in phased manner like development of peripheral activities i.e. Development/renovation of the Murga Mahadev temple, guard wall all along Nallah, established environment cell, education, drinking water, road, street light, livelihood etc.

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4	The applicant will take statutory clearance/approval/permissions from the concerned authorities in respect of his project as and when required.	Necessary statutory clearances/ approval/ permissions from the concerned authorities have been obtained such as: Consent to Operate from SPCB (Copy attached as Annexure # 02), approved mining plan from IBM (Copy attached as Annexure # 03), Forest clearance from MoEF&CC (Copy attached as Annexure # 04), etc. Wildlife Conservation Plan (Copy attached as Annexure # 05), Ground Water NOC from CGWA (Copy attached as Annexure#06)																		
5	For post environmental clearance monitoring, the applicant will submit half-yearly compliance report in respect of the stipulated terms and conditions of this Environmental Clearance to the State Environmental Impact Assessment Authority (SEIAA), Orissa on 1 st June and 1 st December of each calendar year.	The Half yearly compliance report is being submitted herewith as per the stipulated time period. Earlier submitted details are attached as Annexure # 7 .																		
6	The core zone should be monitored intensively with no. of stations as prescribed by CPCB, Delhi and unit of pollutant level should be expressed as NAAQ of CPCB, Delhi. The detail methodology adopted for analysis of samples shall be cleared indicated	<p>The mine was not in operation since 18th April 2010, for want of forest/statutory clearance and has resumed its operation from 23rd November-2019. Regular monitoring of AAQ in the core as well as buffer zone of the ML area being done as per the NAAQ's notification. The monitoring locations as per SPCB's direction are enclosed as Annexure # 8. The project is also adopting specified methodology for analysis of the AAQ parameters.</p> <table border="1" data-bbox="805 1680 1412 1977"> <thead> <tr> <th>Sl.No</th><th>Pollutant</th><th>Method</th></tr> </thead> <tbody> <tr> <td>1</td><td>SO₂</td><td>Ultraviolet Fluorescence</td></tr> <tr> <td>2</td><td>NO₂</td><td>Chemiluminescence</td></tr> <tr> <td>3</td><td>SPM(PM₁₀)</td><td>Gravimetric</td></tr> <tr> <td>4</td><td>SPM(PM_{2.5})</td><td>Gravimetric</td></tr> <tr> <td>5</td><td>CO</td><td>CO monitor</td></tr> </tbody> </table>	Sl.No	Pollutant	Method	1	SO ₂	Ultraviolet Fluorescence	2	NO ₂	Chemiluminescence	3	SPM(PM ₁₀)	Gravimetric	4	SPM(PM _{2.5})	Gravimetric	5	CO	CO monitor
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7	The proponent shall submit ground	The site specific Wild Life Conservation																		

Reporting Period: April-20 to September-20

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	toothling baseline data on flora & fauna and CSR activities already carried out within three months to the SEIAA.	Plan has been approved by PCCF (Wildlife), Chief Wildlife Warden, Odisha. The project has estimated cost of Rs. 38.70 Lakhs which includes cost for both buffer zone i.e. Rs. 25.40 Lakhs and core zone i.e. Rs. 13.30 Lakhs for the conservation and management of wildlife. The copy of the same is attached as Annexure # 5 . A detailed CSR activity on the same got submitted.
8	Adequate buffer zone shall be maintained between two consecutive mineral bearing deposits.	There is only one mines pit located in the mines area and the project has maintained the 7.5 m width of safety zone around the ML area and following as per the approved mining plan/scheme.
9	Zero waste mining concept shall be implemented either by putting up palletization plant or disposal of low grade ores/fines to prospective buyers.	Due to the incorporation of better & efficient machineries and latest technologies, it is ensured that zero wastes will be coming out due to the mining activity. Steps have been initiated to work out in this context.
10	The following shall be implemented viz. (a) dump run off should be diverted into settling ponds until it is clear (b) adequate rain water harvesting and ground water recharging facilities should be developed in the core zone, (c) attempt should be made to achieve zero water balance.	<ul style="list-style-type: none"> a. Mines run off are being diverted to settling pits with proper checks before disposal to natural water bodies. b. The project has implemented the roof top rain water harvesting structures and settling pits cum harvesting structures in the mines areas towards recharge of the ground water. c. Steps have been taken to achieve zero water balance like implementation STP for treatment of domestic effluent and reuse of the treated water for mines dust suppression and nearby gardening purposes. <p>The photo of the same is enclosed as Photo 3 & 4.</p>

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11	Maintenance of roads through which transportation of ores are undertaken shall be carried by the project regularly at its own cost.	The project has black topped the transportation approach village roads along with the other projects and regular maintenance of the main approach road along with the mines haul roads are being carried out. Photo no. - 05.
12	Fugitive dust generation shall be controlled. Fugitive dust emission shall be regularly monitored at locations of nearest human habitation (including schools and other public amenities located nearest to sources of dust generation as applicable) and records shall be submitted to the SEIAA, Orissa.	We have engaged mobile water tanker for sprinkling purpose to avoid fugitive dust generation. Monitoring of AAQ was carried out in different locations of nearest human habitation in consultation with SPCB. The monitoring report is being submitted to the authorities on regular basis.
13	Transportation of ore shall be done by covering the trucks with tarpaulin or other suitable mechanism so that no spillage of ore /dust takes place.	The project has taken steps towards public roads to ensure that the trucks should not be overloaded during transportation; besides these trucks plying outside the mine is ensured to be covered with tarpaulins while transportation of the iron ore.
14	Rain water harvesting shall be undertaken to recharge the ground water source.	In this regard roof top rain water harvesting structures has been implemented towards augmentation of ground water in the camp area. The photo of the same is enclosed above as above photo no. – 06.
15	Monitoring of ground and surface water quality shall be regularly conducted and records should be maintained and data shall be submitted regularly to SEIAA, Orissa.	Monitoring of the ground water quality at 4 locations namely, Bileipada village, Mahadev Nasa village, Deojhar village, & Village Daldir as well as monitoring of the surface water quality at 5 locations i.e. Baitarini River, Suna Nadi Up-stream, Suna Nadi Down-stream, Mahadev Nallah U/S & Mahadev Nallah D/S being carried out. The records were maintained and being submitted to the authorities on regular basis.
16	The proponent shall ensure that no	The project has provided necessary

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	silt originating due to mining activity is transported in the surface water course. Measures for prevention and control of soil erosion and management of silt shall be undertaken. Protection of dumps against erosion shall be carried out with geo-textile matting or other suitable material, and thick plantations of native trees and shrubs shall be carried out at the dump slopes. Dumps shall be protected by retaining walls.	precautionary measures like siltation pit towards protection of silt carry over into the nearby surface water bodies followed by retaining walls and garland drains at the toe of the dumps. Apart from that interference like guard wall all across the bank of the Nallah, a length of 380 mtr and check weirs at the strategic locations are provided. The above measures have been taken up to reduce flow of sediments to the 1 st order and 2nd order streams and also other water bodies present in the buffer area. The photos regarding the same have been enclosed as photo – 01 .
17	Trenches / garland drains shall be constructed at foot of dumps to arrest silt from being carried to water bodies. Adequate number of check dams shall be constructed across seasonal or perennial Nallahs (if any) flowing through the ML area be arrested. De-silting at regular intervals shall be carried out.	We ensure that there should not be any silt materials mixed in nearby Nallah and all. To arrest silt from mines run off, a no. of catch drains and settling cum percolation pits have been constructed around the mines working areas. Nallah protection guard walls have also been constructed across the length of the Nallah. Time to time de-silting is followed before each monsoon. The photo of the same is attached as photo 04-b .
18	Provisions shall be made for the housing the labors within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. the housing may be in the form of temporary structures to be removed after the completion of the project.	There is no such construction activity inside the project area. They are being engaged from the adjoining villages. However, we have provided the site specific STP for treatment of domestic effluents and the treated water is being utilized for adjoining plantation & gardening purposes.
19	Occupational health and safety measures for the workers including identification of work related health hazards, training on malaria eradication, HIV, and health	Initial Medical Examination & Periodical Medical Examination of the workers engaged in the project is being undertaken periodically for permanent and outsider employees along with the

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	<p>effects on exposure to mineral dust etc. shall be carried out. The proponent shall engage a full time qualified doctor who is trained in occupational health. Periodic monitoring for exposure to respirable mineral dust on the workers shall be conducted and records maintained including health records of the workers. Awareness program for workers on impact of mining on their health and precautionary measures like use of personal equipment's etc. shall be carried out periodically. Review of impact of various health measures undertaken (at interval of five years or less) shall be conducted followed by follow up action wherever required. Occupational Health center shall be established near the mine site itself.</p>	<p>pre-medical examination of persons employed, who are engaged in the process of mining & are likely exposed to dust to observe any contractions due to exposure to dust. This is being carried as per in compliance to Mines Act 1952 & rules 1956 and amendments there to. The various tests include PFT, X-Ray, and lung spirometry etc.</p> <p>Workers are provided with protective respiratory devices & time to time training on safety & health aspects is being provided.</p> <p>During the reporting period only 08 Nos. of IME has been carried out.</p> <p>A sample copy of IME/PME is attached as Annexure#09.</p>
20	<p>Shelter belt that is wind break of 15 m width and consisting of at least five tiers around the lease facing the human habitation, school/agricultural fields etc. (if any in the vicinity) in the safety zone/backfilled and reclaimed areas, around voids and roads shall be raised. Green belt development and selection of plant species shall be as per CPCB guidelines. Density of the trees has to be around 2500 plants per hectare, herbs and shrubs shall also form a part of afforestation program besides tree plantation. Help and guidance of local DFO may be sought in the matter. Details of year wise afforestation</p>	<p>There is no such human habitation/schools etc. within the ML area. However, the safety zone of 7.5 m width around the ML boundary is being maintained and outside the ML area under CSR activity being planted.</p> <p>In the reporting period the project has planted 1,020 nos. of saplings of native species, cumulatively 20,120 numbers of saplings in and around the ML area has been planted till date in safety zone, & peripheral area of ML.</p> <p>Photo of the same is attached as photo no. 07</p>

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	program including rehabilitation of mined out area shall be submitted to the SEIAA, Orissa within six months.	
21	This environmental clearance is subjected to forest clearance under the Forest (Conservation) Act, 1980.	The lessee has obtained forest clearance over an area of 13.904 ha forest land including 1.214 Ha of safety zone for mining & its allied activities under Forest Conservation Act 1980. Copy of the same is enclosed as Annexure # 4.
22	The mining operation shall be restricted to above ground water table and it should not intersect the groundwater table.	As such mining activity does not intersect ground water table of the area. The Ultimate working depth is 530 AMSL which is far above the ground water level and ground water level exists 510 A MSL. Therefore, intersection of ground water table of the ML area will not occur.
23	The top soil shall temporarily be stored at earmarked site (s) only and it should not be kept unutilized for long (not more than 3 years). The topsoil shall be used for land reclamation and plantation.	There is no generation of the top soil during mining operations. In case of top soil generation generated in future, it will be stored in an earmarked area and necessary precaution will be taken to preserve its nutrient values so that it will be used for land reclamation and raising plantations.
24	The over burden (OB) generated during the mining operation shall be stacked at earmarked dump site(s) only and it should not be kept active for a long period of time and its phase-wise stabilization shall be carried out. Proper terracing of OB dump shall be carried out so that the overall slope shall not exceed 28°. Back filling shall be done as per approved mining plan. Back filling to start from 3rd year onwards of the mining operation and the entire quantity of waste shall be back-filled and liquidated within	As per the approved mining plan from Indian Beauru of Mines, Bhubaneswar, no such OB dump is proposed or will be in field. The OB generation is very fewer and the generated quantity will be utilized timely for road making and its maintenance purpose. The back filling will be started after total exhaust of the mineral as approved by the IBM in Scheme of Mining.

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	<p>five years. There shall be no external OB dumps after the 6th year of the mining operations the backfilled area shall be afforested. Back-filling has to be done in a manner that it is restored to the normal ground level. Monitoring and management of Rehabilitated areas should continue till the vegetation is established and becomes self-generating compliance status to be reported to the appropriate authorities.</p>	
25	<p>The funds earmarked for the environment protection measures shall be judiciously utilized. Under no circumstances this funds shall be diverted for other purposes. Year wise expenditure for these funds should be reported to the SEIAA, Orissa.</p>	<p>The funds earmarked for environmental protection are being utilized for the same.</p>
26	<p>The critical parameters such as SPM, RSPM, and NO_x in the ambient air within the impact zone, peak particle velocity at 300 m distance or within the nearest habitation, whichever is closure shall be monitored periodically. Further, quality of discharged water shall also be monitored [TDS, DO, pH and total suspended solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the company in public domain. The circular no. J 20012/1/2006-1A.II (M) dated 27.05.2009 issued by Ministry of Environment and forest, which is available on the website of the</p>	<p>All the critical parameters are being monitored like AAQ, Water Quality, peak particle velocity etc. and the data of the same is being displayed on a board and the same is also being updated in the company website i.e. www.miom-drp.com.</p>

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	Ministry www.envfor.nic.in shall also be refereed in this regard for its compliance.	
27	A final mine closer plan along with details of Corpus Fund shall be submitted to the SEIAA 5 years in advance of final mine closure for approval.	The Project has submitted a Bank guarantee of Rs. 42, 22, 200 /- for rehabilitation as a part of the management of the mines closure of the Project. It has been approved by IBM in the scheme of mining on 14.03.2018. A final mine closer plan along with detailed corpus fund will be submitted to the ministry of Environment & Forest 5 years in advance of final mine closure for approval.
28	The project proponent shall obtained necessary prior permission of the competent authorities for drawl of requisite quantity of water (Surface water and ground water) required for the project.	The project proponent has already obtained NOC for withdrawal of ground water from Central Ground Water Authority. The approved GW NOC is attached as Annexure#06 .
29	The above mentioned stipulated conditions shall be complied in time bound manner. Failure to comply with any of the conditions mentioned above may result in withdrawal of this environmental clearance and attract action under the provisions of Environmental Protection (EP) Act, 1986.	We are abiding by the said conditions.

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Sl. No.	The Additional Environmental Clearance condition of mining projects vide. OM of MoEF&CC, F.No. 22-34/2018-IA.III dated: 16.01.2020	Compliance
1	The mining lease holders shall, after ceasing mining operations, undertake re-grassing the mining area and any other area which may have been disturbed due to their mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc.	We will abide by the condition. At present the mining operation is going on and the mineral is not exhausted at all & its also duly approved by the IBM in Mining Plan. Therefore, after ceasing of the mining operation or exhaust of minerals, we will undertake re-grassing of the disturbed land due mining activities and restore the land to a condition which is fit for growth of fodder, flora, fauna etc. as duly approved in Mining Plan by IBM.

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ANNEXURES

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
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Annexure #01: CSR details

Socio-Economic Development Activities:-

Infrastructure

- Provided materials for Street Light Connections in nearby villages.
- Repairing and black topping of Village Road connecting Road from Deojhar to Murgabeda. Repairing of interior village roads

Education

- The school at village Murgabeda got improved by providing the teaching facility with the appointment of teachers. Renovation of school building & compound wall.
- Additional teachers have been posted in the adjoining villages.
- Distribution of Uniforms, Books, slates, pencil, etc. to the school students.
- Mid-day meal is being provided at free of cost for class 9th & 10th at Deojhar High School.
- Facilitating the Independence & Republic Day functions at adjoining schools by funding the entire celebration by extending various tournaments among school children.

Health

- Health-Check-up camp covering adjoining villages and free supply of medicines.
- Extending the Dispensary along with the ambulance facility to local villages with the availability Doctor & Staff and free medicine.

Drinking Water Facility & Sanitation

- 2 No's of deep bore wells got provided at village.
- Regular & periodical supply of drinking water to the adjoining villages with the water tankers.

Other peripheral activities

- Murga Mahadev Temple renovation work (Bathing area has been tiled & guard bars, Cloth changing room, Glazed tiled Bench, etc.) already completed

Reporting Period: April-20 to September-20

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- Regular maintenance of temple housekeeping, etc.
- Guard wall at the bank of Mahadev –Nalla towards its protection.

Employment Opportunities

- Locals from adjoining villages are engaged in various activities of mines.
- Besides the above Temple maintenance staff comprises 3.No. of Lady Employees are from Local villages.
- Posting of additional teachers in schools from locality.
- Development of self-help groups for villagers is under planning.

• **Year Wise Expenses**

CSR Expense Details		
		Expenditure (In Lakhs) 2020-21 (April-20 to Sept-20)
1	Infrastructure	2.37
2	Education	0.87
3	Health	2.47
4	Drinking Water Facility	0.36
5	Social welfare	1.11
7	Total	7.18

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Annexure – 02: Consent to Operate from SPCB



CONSENT ORDER
MURGABEDA IRON ORE MINES OF SRI D. R. PATNAIK.

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BY REGD. POST WITH AD

STATE POLLUTION CONTROL BOARD, ODISHA

A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012
Phone-2561909, Fax: 2562822, 2560955 E-mail: paribesh1@ospcbboard.org, Website: www.ospcbboard.org

CONSENT ORDER

No. 1074 / IND - I-CON- 223 Dt. 31.01.2020 /

CONSENT ORDER NO. 726

Sub: **Consent for discharge of sewage and trade effluent under section 25/26 of Water (PCP) Act, 1974 and for existing / new operation of the plant under section 21 of Air (PCP) Act, 1981.**

Ref: Your Online Application No. 2569545 Dated 01.04.2019, Your Letter No. MIOM-DRP/SPCB/CTO/2019-20/05 dated 4.10.2019 and online reply dated 31.12.2019

Consent to operate is hereby granted under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act, 1981 and rules framed thereunder to

Name of the Industry: MURGABEDA IRON ORE MINES OF SRI D. R. PATNAIK

Name of the Occupier & Designation: SRI K. K. MANDAL, MINES MANAGER

Address: AT/PO: DEOJHAR, DIST: KEONJHAR.

This consent order is valid for the period up to 31.03.2024 from the date of issue of this order.

This consent order supersedes the earlier consent order issued vide letter No. 3544 dated 05.04.2019.

Details of Products Manufactured

Sl. No	Product	Quantity
01.	Iron Ore	2.0 MTPA



Details of Mineral Handling Plants /Units

01	Operation of mobile crushing plant of capacity 2x200 TPH
02.	Operation of mobile screening plants of capacity 2X 200 TPH

This consent order is valid for the specified outlets, discharge quantity and quality, specified chimney/stack, emission quantity and quality of emissions as specified below. This consent is granted subject to the general and special conditions stipulated herein.

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Annexure # 03: Approved of review of mining plan from IBM

 <p>भारत सरकार GOVERNMENT OF INDIA खान मंत्रालय MINISTRY OF MINES भारतीय खान ब्यूरो INDIAN BUREAU OF MINES क्षेत्रीय खान निरीक्षक के कार्यालय OFFICE OF THE REGIONAL CONTROLLER OF MINES</p>		<p>REGD. PANCE Phone: 0674-235246 TeleFax: 0674-235248 Email: rc.shutanemahar@govt.odisha.gov.in Plot No. 788, Pokhampur, BHUBANESHWAR-751002</p>
No. MS/FM/44-ORI/BHU/2017-18 / 2990		Date: 14.03.2018

To

Shri D R Patnaik, Mine Owner,
At/PO- Baneikala,
Dist – Keonjhar, Odisha- 758034

Sub: Approval of Review of Mining Plan of Murgabeda Iron Ore Mine along with Progressive Mine Closure Plan (PMCP), over an area of 15.378 ha in Keonjhar district of Odisha State, submitted by Shri D R Patnaik under Rule 17 of Mineral Concession Rules, 2016.

Ref: - i) Your letter No. Nil dated 06.02.2018.
ii) This office letter of even no. dated 06.02.2018.
iii) This office letter of even no. dated 06.02.2018 addressed to Director of Mines, Government of Odisha copy endorsed to you.
iv) This office letter of even no. dated 21.02.2018.
v) Your Qualified Person letter No. PMP/IBM/09/2017-18 dated 26.02.2018.

Sir,

In exercise of the power delegated to me vide Gazette Notification No. S.O. 1857(E) dated 18.05.2016, I hereby Approve the Review of Mining Plan including Progressive Mine Closure Plan of Murgabeda Iron Ore Mine over an area of 15.378 ha of Shri D R Patnaik in Keonjhar district of Odisha State submitted under Rule 17 of Mineral Concession Rules, 2016. This approval is subject to the following conditions:

- I. The Review of Mining Plan is approved without prejudice to any other law applicable to the mine area from time to time whether made by the Central Government, State Government or any other authority and without prejudice to any order or direction from any court of competent jurisdiction.
- II. The proposals shown on the plates and/or given in the document is based on the lease map /sketch submitted by the applicant/ lessee and is applicable from the date of approval.
- III. It is clarified that the approval of aforesaid Review of Mining Plan does not in any way imply the approval of the Government in terms of any other provision of Mines & Minerals (Development & Regulation) Act, 1957, or the Mineral Concession Rules, 2016 and any other laws including Forest (Conservation) Act, 1980, Environment (Protection) Act, 1986 or the rules made there under, Mines Act, 1952 and Rule & Regulations made there under.
- IV. Indian Bureau of Mines has not undertaken verification of the mining lease boundary on the ground and does not undertake any responsibility regarding correctness of the boundaries of the leasehold shown on the ground with reference to lease map & other plans furnished by the applicant / lessee.

27/03/18
PA-1-18

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**

Annexure # 04: Forest Clearance



Government of India/भारत सरकार
Ministry of Environment, Forest & Climate Change/पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय
Eastern Regional Office/पूर्वी क्षेत्रीय कार्यालय
A/3, Chandrasekharpur/ए 3, चन्द्रसेखरपुर
Bhubaneswar - 751 023/भुवनेश्वर - 751 023



Telephone: 0674-2301213, 2301248, 2302452, 2302453. Fax: 0674-2302402. E-mail: esr@moef.gov.in

No.5-ORC/209/2014-BIU

5th October, 2018

To

The Addl. Chief Secretary,
Forest & Environment Deptt.,
Govt. of Odisha,
Bhubaneswar.

Sub:-

Diversion of 13.904 ha of forest land including 1.214 ha of forest land for safety zone in Murgabeda Iron Ore Mines in village Deojhar of Barbil Tehsil in Keonjhar district, Odisha for mining and allied activities during 1st RML period by Shri D.R. Patnaik.

Sir,

I am directed to refer to State Govt. letter No. 10F(Cons)498/2011-9074/F&E dated 16.05.2014, and No.9422/F&E dated 22.05.2014, wherein prior approval of the Ministry of Environment, Forest & Climate Change for diversion of 13.904 ha of forest land including 1.214 ha of forest land for safety zone in Murgabeda Iron Ore Mines in village Deojhar of Barbil Tehsil in Keonjhar district, Odisha for mining and allied activities during 1st RML period by Shri D.R. Patnaik, was sought in accordance with Section-2 of the Forest (Conservation) Act, 1980. After due consideration of the proposal by the Ministry of Environment, Forest & Climate Change and on the basis of decision of State Advisory Group meeting held on 29.05.2014, the in-principle approval for diversion of the said forest land was accorded by Ministry vide this office letter of even number dated 05.09.2014, subject to fulfillment of certain conditions. The State Government has furnished compliance report in respect of the conditions stipulated in the in-principle approval and has requested to grant final approval of the proposal.

2. In this connection, I am directed to say that on the basis of the compliance report furnished by the APCCF (Nodal), Odisha vide their letter No.17465/9F(MG)-48/2005 dated 14.08.2018 and Ad-hoc: CAMPA, New Delhi letter No.1-26/2014-CAMPA dated 14.09.2018, **Stage-II/final** approval of the Ministry of Environment, Forest & Climate Change is hereby granted under Section 2 of the Forest (Conservation) Act, 1980 for diversion of 13.904 ha of forest land including 1.214 ha of forest land for safety zone in Murgabeda Iron Ore Mines in village Deojhar of Barbil Tehsil in Keonjhar district, Odisha for mining and allied activities during 1st RML period by Shri D.R. Patnaik, in Jharsuguda district of Odisha, subject to the fulfillment of the following conditions:-

- i) Legal status of the diverted forest land shall remain unchanged.
- ii) Additional amount of NPV of the diverted forest land, if any, becoming due after finalization of the same by the Hon'ble Supreme Court of India, shall be charged by State Govt. from the user agency.
- iii) Compensatory Afforestation shall be raised over 12.69 ha of non-forest land identified in village Uparhrikala under Banspal Tahasil of Keonjhar Forest Division within a period of three years with effect from the date of issue of Stage-II clearance and maintained thereafter in accordance with the approved Plan in consultation with the State Forest Department at the cost of user agency. The C.A. plots have to be demarcated by raising 4 feet high RCC pillars at a distance of 50 meter with GPS readings noted on each pillar.

Contd...2

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**

Annexure # 05: Wildlife Conservation Plan

OFFICE OF THE PRINCIPAL CCF (WILDLIFE) & CHIEF WILDLIFE
WARDEN, ORISSA 11TH FLOOR, B.D.A. APARTMENT, PRAKRUTI BHAWAN
NILAKANTHA NAGAR, BHUBANESWAR- 751012.

Memo No. 1242 Dt. 15.2.10
1WL-G-FC-533/09

To

The Chief Conservator of Forests (Nodal),
O/o the Principal CCF, Orissa, Bhubaneswar.

Sub: Approval of Site Specific Wildlife Conservation Plan for Murgabeda Iron Ore Mines
by Sri D.R. Patnaik in Keonjhar Forest Division of Keonjhar district

Sir,

I am directed to inform you that the Site Specific Wildlife Conservation Plan for
Murgabeda Iron Ore Mines by Sri D.R. Patnaik in Keonjhar Forest Division of Keonjhar
district has been approved by PCCF(WL) & Chief Wildlife Warden, Orissa with revised
financial forecast of Rs.38.70 lakhs for the following activities.

- | | |
|---|-----------------------------|
| 1. For activities to be implemented by User agency
in project area | Rs.13.30 lakhs. |
| 2. For activities to be implemented by
DFO, Keonjhar division in
project impact area. | Rs.25.40 lakhs. |
| | Total Rs.38.70 lakhs |

Various activities in the lease hold area will be executed by User Agency under the
guidance of DFO, Keonjhar Division. Rs.25.40 lakhs may be deposited with DFO,
Keonjhar division for implementation of various activities within the project impact area.

Memo No. 1243 dt. 15.2.10

Copy forwarded to the DFO, Keonjhar Division for information & necessary action
with reference to Memo No. 3822 dt. 13.10.09 of CF, Keonjhar Circle.

Conservator of Forests (WL)

Memo No. 1244 dt. 15.2.10

Copy forwarded to CF, Rourkela Circle for information & necessary action with
reference to his Memo No 3620 dt 13.10.09

Conservator of Forests (WL)

Memo No. 1245 dt. 15.2.10

Copy forwarded to Sri D.R. Patnaik, Keonjhar, Orissa for information.

Conservator of Forests (WL)

*Enc. One No. approved S.S.
WL Conservation Plan.*

Conservator of Forests (WL)

STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA

Annexure # 06: CGWA NOC for Ground Water withdrawal



भारत सरकार
जन शक्ति योजना
जन संसाधन, नदी विकास
और गंगा संरक्षण विभाग
केन्द्रीय भूमि जल प्राधिकरण
Government of India
Ministry of Jal Shakti
Department of Water Resources,
River Development & Ganga Rejuvenation
Central Ground Water Authority

(भूजल निकासी हेतु अनापत्ति प्रमाण पत्र)

NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION

Project Name:		Murgabeda Iron Ore Mines of M/s D R Patnaik					
Project Address:		Murgabeda, Bileipada, Joda, Odisha					
Village:		Murgabeda Camp				Block:	Joda
District:		Kendujhar				State:	Odisha
Pin Code:		758034					
Communication Address:		Bonelkala, Joda, Kendujhar, Odisha - 758034					
Address of CGWB Regional Office :		Central Ground Water Board South Eastern Region, Bhujal Bhawan, Khandagiri Square, NH-5, Bhubaneswar, Odisha - 750001					

1. NOC No.:	CGWA/NOC/MIN/ORIG/2020/7118						
2. Application No.:	21-4/2293/OR/MIN/2019	3. Category:	Mining				
4. Project Status:	Existing Project	5. NOC Type:	New				
6. Valid from:	07/01/2020	7. Valid up to:	06/01/2022				
8. Ground Water Abstraction Permitted:							
Fresh Water		Saline Water		Dewatering		Total	
m ³ /day	m ³ /year	m ³ /day	m ³ /year	m ³ /day	m ³ /year	m ³ /day	m ³ /year
75.00	27375.00					75.00	27375.00
9. Details of ground water abstraction /Dewatering structures							
Total Existing No.:2				Total Proposed No.:0			
	DW	DCB	BW	TW	MP	DW	DCB
Abstraction Structure	0	0	2	0	0	0	0
*DW- Dug Well; DCB-Dug-cum-Bore Well; BW-Bore Well; TW-Tube Well; MP-Mine Pit							
10. Quantum of ground water recharge/harvesting(m ³ /year):				21360.00			
11. Number of Piezometers (Observation wells) to be constructed/ monitored & Monitoring mechanism.				No. of Piezometers			
				Manual			
				DWLR**			
				DWLR With Telemetry			
**DWLR - Digital Water Level Recorder				1			
				0			

(Compliance Conditions given overleaf)

Digitally signed by
NANDAKUMARAN P
Date: 2020.08.03 14:55:46 +05'30'

सदस्य (केन्द्रीय भूमि जल प्राधिकरण)
Member (CGWA)

18/11, जामनगर हाउस, जामनगर रोड, नई दिल्ली - 110011 / 18/11, Jamnagar House, Jamnagar Road, New Delhi-110011
Phone: (011) 23383561 Fax: 23382051, 23386743
Website: cgwa-noc.gov.in

पानी बचाये - जीवन बचाये
SAVE WATER - SAVE LIFE

Reporting Period: April-20 to September-20

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**

Annexure #07: EC Compliance submission details

EC Compliance submission Details		
Sl. No.	Period	Date of Submission
1.	October, 2016 to March, 2017	26.05.2017
2.	April, 2016 to September, 2016	19.11.2016
3.	October, 2015 to March, 2016	25.05.2016
4.	April, 2015 to September, 2015	16.11.2015
5.	Oct 2014 to March, 2015	25.05.2015
6.	Apr, 2014 to Sep, 2014	22.11.2014
7.	October 2013 to March 2014	25.05.2014
8.	April 2013 to September 2013	25.11.2013
9.	October 2012 to March 2013	25.05.2013
10.	April 2012 to September 2012	25.11.2012
11.	April 2017 to September 2017	25.11.2017
12.	October 2017 to March-2018	30.05.2018
13.	April to September, 2018	02.11.2019
14.	October, 2018 to March, 2019	25.05.2019
15.	April-19 to September-19	02.11.2019
16.	October-19 to March-20	20.05.2020

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**

Annexure # 08: AAQ Monitoring Locations

M/S. D.R. PATNAIK

Mines Owner

(A UNIT OF D.R. PATNAIK & ALTRADE GROUP)

Ref. No.: MIM/SPCB/109-01

Date: 12.02.2020

The Regional Officer,
Regional Office,
State Pollution Control Board,
Keonjhar, Odisha

Sub: Establishment of AAQ monitoring station for Murgabeda Iron Ore Mines of
Sri D. R. Patnaik – Reg.

Ref. SPCB Consent order no. 726 vide letter no. 1074/IND-I-CON-223 dt.
31.01.2020

Dear Sir,

With reference to the above cited subject, we would like inform you that, the project has already installed 04 numbers of ambient air quality monitoring station, out of which 02 nos. are located inside the mines lease area (Core Zone) and 02 nos. are in the buffer zone area of the project. All the ambient air quantity monitoring stations are installed based on the metrological data, topographical features and environmental sensitive targets. The monitoring parameters are PM₁₀, PM_{2.5}, SO₂, NO_x & CO. The details of the AAQ monitoring stations are as follows;

Sl. No.	Sampling Locations	Zone	Station Number
1.	Mines Office	Core Zone	AAQ 1
2.	Near Exit gate (ML Pillar no. 07)	Core Zone	AAQ 2
3.	Village Murgabeda	Buffer Zone	AAQ 3
4.	Village Bileipada	Buffer Zone	AAQ 4

The AAQ station map is enclosed as **Annexure # 01**.

This is for your kind information, please.

Yours Faithfully
For, Sri. D. R. Patnaik


Mines Manager

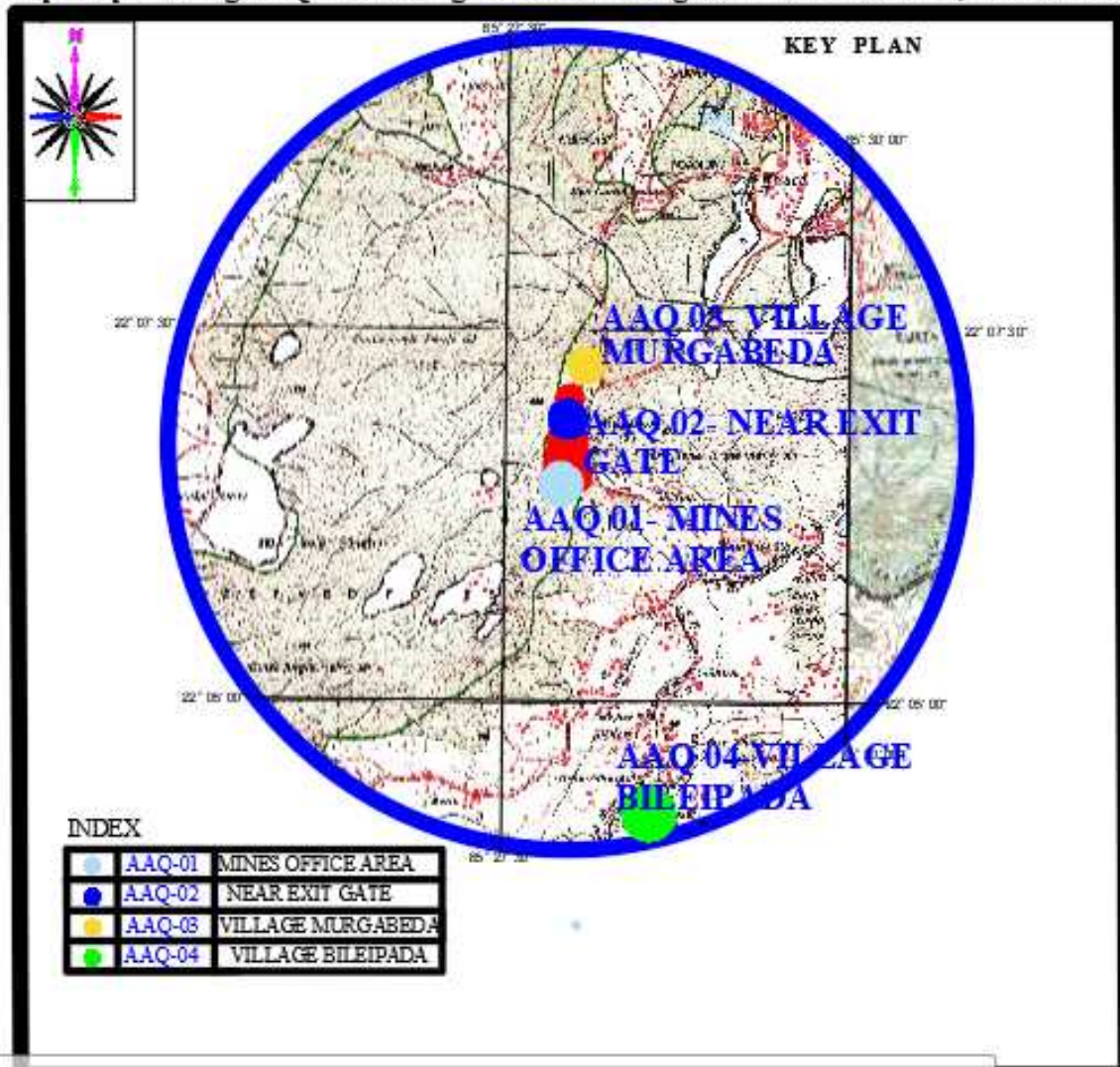
Enclosed : As above

Copy to: The Member Secretary, State Pollution Control Board, Parivesh Bhawan, A/118,
Nilakantha Nagar, Unit – VIII ,Bhubaneswar – 751012

Reporting Period: April-20 to September-20

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**

Topomap showing AAQ Monitoring Stations of Murgabeda Iron ore Mines, Sri D.R.Patnaik



Annexure # 09: Sample IME/PME test report

Reporting Period: April-20 to September-20

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**

PHOTOGRAPHS

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**



Photo#01-a,b & 02-a,b &c- Showing guard wall along the nalla, Environmental monitoring/sampling and water sprinkling by water tanker for dust suppression.

Reporting Period: April-20 to September-20

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**



Photo#03-a,b,c & 04-a,b - Showing STP & ETP for water treatment facility and its reuse, Check dam to arrest silt during monsoon and its de-silting .

Reporting Period: April-20 to September-20

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**



Photo#05: Black Topped road for mineral dispatch



Photo#06: Roof top rain water harvesting



Photo #07 - Showing safety zone plantation with native grass patching. (Green belt development)

**STATUS OF ENVIRONMENTAL CLEARANCE CONDITIONS – “MURGABEDA IRON
ORE MINE –PROJECT OF M/S. D. R. PATNAIK” LOCATED NEAR VILLAGE
MURGABEDA (THAKURANI R.F.) OF KEONJHAR DIST., ODISHA**

ENVIRONMENTAL MONITORING REPORTS

Reporting Period: April-20 to September-20

MURGABEDA MINES

AAQ REPORT

MAY-2020



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -05				Issued to:
Reporting Date	29.05.2020	Analysis Starting on	29.05.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	29.05.2020	Analysis Completed on	29.05.2020	
Sample Description: Ambient Air Quality Location : Mines Office Month : May -2020 Sample Collected by: B.S. Envi-Tech (P) Ltd..				

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6
1	04/05/2020	74	30	11.3	12.2
2	07/05/2020	62	29	10.5	11
3	11/05/2020	67	31	11.1	12.5
4	14/05/2020	59	29	11.3	12.9
5	18/05/2020	69	20	10.9	12.2
6	21/05/2020	61	28	10.3	10.9
7	25/05/2020	54	28	12.2	13.1
8	28/05/2020	66	39	11.5	12.6
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]

Legend:PM₁₀-Particulate Matter(Size Less than 10µm)
PM_{2.5}-Particulate Matter(Size Less than 2.5µm)
SO₂-Sulphur Dioxide
NO₂- Nitrogen Dioxide


Authorized Signatory



*Complaints Register is available at Laboratory.

4th Floor, 'AMITY VILLE', 12-13-1270/71/73,
St. Ann's Road, Tarnaka,
Secunderabad - 500017,
Telangana, India

Phone : +91 40 49783062 / 27016806 Fax : +91 40 49783063
Email : lab@bsenvitech.com, info@bsenvitech.com
Website : www.bsenvitech.com
CIN No. : U74210TG1999PTC032358



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -05				Issued to:
Reporting Date	29.05.2020	Analysis Starting on	29.05.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	29.05.2020	Analysis Completed on	29.05.2020	
Sample Description: Ambient Air Quality Location : Exit Gate Month : May -2020 Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6
1	04/05/2020	71	28	10.5	12.3
2	07/05/2020	68	35	11.6	12.8
3	11/05/2020	62	30	10.7	11.5
4	14/05/2020	53	25	10.3	11.2
5	18/05/2020	58	28	11.2	12.6
6	21/05/2020	67	22	11.4	12.8
7	25/05/2020	62	30	10.3	11.7
8	28/05/2020	70	27	10.7	12.4
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)

PM_{2.5}-Particulate Matter (Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide


Authorized Signatory



*Complaints Register is available at Laboratory.

4th Floor, 'AMITY VILLE', 12-13-1270/71/73,
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Secunderabad - 500017,
Telangana, India

Phone : +91 40 49783062 / 27016806 Fax : +91 40 49783063
Email : lab@bsenvitech.com, info@bsenvitech.com
Website : www.bsenvitech.com
CIN No. : U74210TG1999PTC032358



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -05				Issued to:
Reporting Date	29.05.2020	Analysis Starting on	29.05.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	29.05.2020	Analysis Completed on	29.05.2020	
Sample Description: Ambient Air Quality				
Location : Murgabeda Village				
Month : May-2020				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				


S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6
1	04/05/2020	70	24	10.7	12.1
2	07/05/2020	75	39	11.1	12.3
3	11/05/2020	69	26	10.4	11.8
4	14/05/2020	59	21	11.3	12.5
5	18/05/2020	63	20	11.6	12.9
6	21/05/2020	70	19	11.8	13
7	25/05/2020	65	32	10.5	11.8
8	28/05/2020	72	28	10.2	11.3
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)

PM_{2.5}-Particulate Matter (Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide


Authorized Signatory



*Complaints Register is available at Laboratory.

4th Floor, 'AMITY VILLE', 12-13-1270/71/73,
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Phone : +91 40 49783062 / 27016806 Fax : +91 40 49783063
Email : lab@bsenvitech.com, info@bsenvitech.com
Website : www.bsenvitech.com
CIN No. : U74210TG1999PTC032358



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -05				Issued to:
Reporting Date	29.05.2020	Analysis Starting on	29.05.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	29.05.2020	Analysis Completed on	29.05.2020	
Sample Description: Ambient Air Quality				
Location : Bileipada Village				
Month : May-2020				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

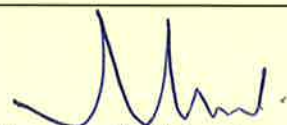
S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6
1	04/05/2020	62	23	9.8	10.6
2	07/05/2020	70	35	10.3	11.8
3	11/05/2020	65	22	9.8	10.7
4	14/05/2020	65	20	10.1	12.2
5	18/05/2020	68	15	10.1	11.5
6	21/05/2020	63	18	12.2	13.1
7	25/05/2020	71	28	10.1	12.3
8	28/05/2020	65	25	10.8	12.2
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)

PM_{2.5}-Particulate Matter (Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide


Authorized Signatory



*Complaints Register is available at Laboratory.

4th Floor, 'AMITY VILLE', 12-13-1270/71/73,
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CIN No. : U74210TG1999PTC032358

MURGABEDA MINES

AAQ REPORT

JUNE-2020



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -06				Issued to:
Reporting Date	26.06.2020	Analysis Starting on	26.06.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	26.06.2020	Analysis Completed on	26.06.2020	
Sample Description: Ambient Air Quality Location : Mines Office Month : June -2020 Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6
1	01/06/2020	66	22	12.4	13.7
2	04/06/2020	64	20	10.8	12.6
3	08/06/2020	71	27	11.0	13.1
4	11/06/2020	60	19	9.6	11.7
5	15/06/2020	79	30	10.2	12.5
6	18/06/2020	61	21	10.1	11.8
7	22/06/2020	77	28	9.6	10.8
8	25/06/2020	68	18	10.3	12.4
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]

Legend:PM₁₀-Particulate Matter(Size Less than 10µm)
PM_{2.5}-Particulate Matter(Size Less than 2.5µm)
SO₂-Sulphur Dioxide
NO₂- NitrogenDioxide

Authorized Signatory



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CIN No. : U74210TG1999PTC032358



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -06				Issued to:
Reporting Date	26.06.2020	Analysis Starting on	26.06.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	26.06.2020	Analysis Completed on	26.06.2020	
Sample Description: Ambient Air Quality				
Location : Exit Gate				
Month : June -2020				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6
1	01/06/2020	68	24	8.9	11.5
2	04/06/2020	72	28	9.4	11.7
3	08/06/2020	69	22	11.6	13.4
4	11/06/2020	70	20	8.7	10.5
5	15/06/2020	62	18	9.4	11.6
6	18/06/2020	73	24	10.2	12.6
7	22/06/2020	61	28	11.4	13.5
8	25/06/2020	78	29	10.3	11.8
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)

PM_{2.5}-Particulate Matter (Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide

Authorized Signatory



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B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -06				Issued to:
Reporting Date	26.06.2020	Analysis Starting on	26.06.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	26.06.2020	Analysis Completed on	26.06.2020	
Sample Description: Ambient Air Quality				
Location : Murgabeda Village				
Month : June-2020				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6
1	01/06/2020	67	16	11.2	13.4
2	04/06/2020	54	14	12.6	14.5
3	08/06/2020	51	13	9.8	12.6
4	11/06/2020	58	16	9.3	11.9
5	15/06/2020	68	18	11.5	13.4
6	18/06/2020	49	12	9.7	11.2
7	22/06/2020	66	19	8.4	10.6
8	25/06/2020	52	17	7.7	10.3
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)

PM_{2.5}-Particulate Matter (Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide

Authorized Signatory



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B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -06				Issued to:
Reporting Date	26.06.2020	Analysis Starting on	26.06.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	26.06.2020	Analysis Completed on	26.06.2020	
Sample Description: Ambient Air Quality Location : Bileipada Village Month : June-2020 Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6
1	01/06/2020	55	14	12.4	14.2
2	04/06/2020	62	19	11.3	13.3
3	08/06/2020	66	21	12.6	13.2
4	11/06/2020	58	15	11.4	13.8
5	15/06/2020	53	12	10.2	12.3
6	18/06/2020	51	16	8.9	11.5
7	22/06/2020	68	19	10.2	12.6
8	25/06/2020	54	14	9.3	10.8
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)

PM_{2.5}-Particulate Matter (Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide

Authorized Signatory



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MURGABEDA MINES

AAQ REPORT

JULY-2020



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -07				Issued to:	
Reporting Date	31.07.2020	Analysis Starting on	31.07.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,	
Sample Received on	31.07.2020	Analysis Completed on	31.07.2020		
Sample Description: Ambient Air Quality					
Location : Mines Office					
Month : July -2020					
Sample Collected by: B.S. Envi-Tech (P) Ltd.,					

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	CO [mg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6	BSET SOP AA-09
1	06/07/2020	68	21	11.5	12.4	0.34
2	09/07/2020	75	26	10.4	11.6	0.26
3	13/07/2020	63	22	10.7	11.3	0.16
4	16/07/2020	69	27	12.5	13.2	0.19
5	20/07/2020	71	29	11.2	12.5	0.15
6	23/07/2020	73	31	11.7	12.1	0.18
7	27/07/2020	62	28	12.2	13.3	0.24
8	30/07/2020	60	25	11.6	12.2	0.28
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]	02 [mg/m ³] (8 hourly)

Legend: PM₁₀-Particulate Matter(Size Less than 10µm)
PM_{2.5}-Particulate Matter(Size Less than 2.5µm)
SO₂-Sulphur Dioxide
NO₂- NitrogenDioxide


Authorized Signatory


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B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -07				Issued to:
Reporting Date	31.07.2020	Analysis Starting on	31.07.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	31.07.2020	Analysis Completed on	31.07.2020	
Sample Description: Ambient Air Quality				
Location : Exit Gate				
Month : July -2020				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	CO [mg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6	BSET SOP AA-09
1	06/07/2020	58	26	11.6	12.4	0.64
2	09/07/2020	64	32	12.7	13.6	0.76
3	13/07/2020	75	35	15.3	16.4	0.45
4	16/07/2020	69	33	12.4	13.2	0.49
5	20/07/2020	57	29	12.9	13.9	0.84
6	23/07/2020	62	27	11.5	12.7	0.90
7	27/07/2020	54	31	11.3	12.9	0.57
8	30/07/2020	56	34	12.1	13.3	0.59
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]	02 [mg/m ³] (8 hourly)

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)

PM_{2.5}-Particulate Matter (Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide


Authorized Signatory


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B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -07				Issued to:
Reporting Date	31.07.2020	Analysis Starting on	31.07.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	31.07.2020	Analysis Completed on	31.07.2020	
Sample Description: Ambient Air Quality				
Location : Murgabeda Village				
Month : July-2020				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	CO [mg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6	BSET SOP AA-09
1	06/07/2020	59	34	11.7	12.4	0.54
2	09/07/2020	67	39	12.9	13.6	0.59
3	13/07/2020	64	37	13.4	14.3	0.64
4	16/07/2020	57	35	12.6	13.5	0.47
5	20/07/2020	53	31	13.2	14.8	0.64
6	23/07/2020	49	29	12.8	13.7	0.37
7	27/07/2020	56	33	13.1	14.5	0.41
8	30/07/2020	74	38	12.5	13.1	0.67
NAAQ Standards (24 hourly standard)		100 [µg/m³]	60 [µg/m³]	80 [µg/m³]	80 [µg/m³]	02 [mg/m³] (8 hourly)

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)

PM_{2.5}-Particulate Matter (Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide

Authorized Signatory



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B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -07				Issued to:
Reporting Date	31.07.2020	Analysis Starting on	31.07.2020	Murgabeda Iron Ore Mines of
Sample Received on	31.07.2020	Analysis Completed on	31.07.2020	
Sample Description: Ambient Air Quality				M/s D.R.PATNAIK.,
Location : Bileipada Village				
Month : July-2020				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	CO [mg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6	BSET SOP AA-09
1	06/07/2020	61	36	12.5	13.1	0.59
2	09/07/2020	59	31	13.4	14.6	0.57
3	13/07/2020	67	42	12.6	13.9	0.46
4	16/07/2020	62	40	11.8	13.0	0.72
5	20/07/2020	57	38	12.4	14.2	0.64
6	23/07/2020	53	41	13.2	14.5	0.58
7	27/07/2020	58	45	12.7	13.7	0.62
8	30/07/2020	56	48	12.9	14.3	0.67
NAAQ Standards (24 hourly standard)		100 [µg/m³]	60 [µg/m³]	80 [µg/m³]	80 [µg/m³]	02 [mg/m³] (8 hourly)

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)

PM_{2.5}-Particulate Matter (Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide


Authorized Signatory



*Complaints Register is available at Laboratory.

MURGABEDA MINES

AAQ REPORT

AUGUST-2020



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -08				Issued to:	
Reporting Date	31.08.2020	Analysis Starting on	31.08.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,	
Sample Received on	31.08.2020	Analysis Completed on	31.08.2020		
Sample Description: Ambient Air Quality					
Location : Mines Office					
Month : August -2020					
Sample Collected by: B.S. Envi-Tech (P) Ltd.,					

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	CO [mg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6	BSET SOP AA-09
1	03/08/2020	67	18	11.6	13.6	0.48
2	06/08/2020	61	15	12.6	14.8	0.66
3	10/08/2020	68	21	11.1	11.7	0.71
4	13/08/2020	54	17	10.3	12.4	0.52
5	17/08/2020	59	15	10.5	11.5	0.71
6	20/08/2020	57	16	9.9	10.7	0.52
7	24/08/2020	55	18	10.8	11.9	0.49
8	27/08/2020	62	20	10.1	12.5	0.54
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]	02 [mg/m ³] (8 hourly)

Legend: PM₁₀-Particulate Matter(Size Less than 10µm)
PM_{2.5}-Particulate Matter(Size Less than 2.5µm)
SO₂-Sulphur Dioxide
NO₂- NitrogenDioxide


Authorized Signatory



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B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -08				Issued to:	
Reporting Date	31.08.2020	Analysis Starting on	31.08.2020	Murgabeda Iron Ore Mines of	
Sample Received on	31.08.2020	Analysis Completed on	31.08.2020	M/s D.R.PATNAIK.,	
Sample Description: Ambient Air Quality					
Location : Exit Gate					
Month : August -2020					
Sample Collected by: B.S. Envi-Tech (P) Ltd.,					

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	CO [mg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6	BSET SOP AA-09
1	03/08/2020	71	25	9.1	10.2	0.41
2	06/08/2020	63	20	8.2	9.7	0.78
3	10/08/2020	61	23	9.5	10.3	0.34
4	13/08/2020	59	12	8.2	10.4	0.47
5	17/08/2020	56	16	10.4	11.2	0.61
6	20/08/2020	57	12	9.8	10.2	0.44
7	24/08/2020	61	18	10.3	11.4	0.51
8	27/08/2020	60	16	9.3	10.1	0.64
NAAQ Standards (24 hourly standard)		100 [µg/m³]	60 [µg/m³]	80 [µg/m³]	80 [µg/m³]	02 [mg/m³] (8 hourly)

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)

PM_{2.5}-Particulate Matter (Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide


Authorized Signatory


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B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -08				Issued to:
Reporting Date	31.08.2020	Analysis Starting on	31.08.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	31.08.2020	Analysis Completed on	31.08.2020	
Sample Description: Ambient Air Quality Location : Murgabeda Village Month : August-2020 Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	CO [mg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6	BSET SOP AA-09
1	03/08/2020	63	20	7.2	8.9	0.43
2	06/08/2020	60	19	8.9	9.7	0.51
3	10/08/2020	52	16	9.2	10.2	0.35
4	13/08/2020	57	15	8.6	9.5	0.48
5	17/08/2020	61	21	7.3	9.2	0.59
6	20/08/2020	50	18	9.4	10.4	0.68
7	24/08/2020	69	22	8.7	9.8	0.57
8	27/08/2020	53	14	9.3	10.5	0.62
NAAQ Standards (24 hourly standard)		100 [µg/m³]	60 [µg/m³]	80 [µg/m³]	80 [µg/m³]	02 [mg/m³] (8 hourly)

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)

PM_{2.5}-Particulate Matter (Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide

Authorized Signatory



*Complaints Register is available at Laboratory.



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -08				Issued to:
Reporting Date	31.08.2020	Analysis Starting on	31.08.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	31.08.2020	Analysis Completed on	31.08.2020	
Sample Description: Ambient Air Quality Location : Bileipada Village Month : August-2020 Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	CO [mg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6	BSET SOP AA-09
1	03/08/2020	54	17	9.1	10.2	0.67
2	06/08/2020	66	26	7.3	9.5	0.34
3	10/08/2020	61	23	7.8	9.3	0.46
4	13/08/2020	59	19	9.6	10.3	0.52
5	17/08/2020	68	25	9.7	10.8	0.29
6	20/08/2020	51	14	8.3	9.4	0.41
7	24/08/2020	63	20	9.0	10.2	0.57
8	27/08/2020	57	18	7.6	9.8	0.72
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]	02 [mg/m ³] (8 hourly)

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)

PM_{2.5}-Particulate Matter (Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide


Authorized Signatory


*Complaints Register is available at Laboratory.

MURGABEDA MINES

AAQ REPORT

SEPTEMBER-2020



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -09				Issued to:
Reporting Date	26.09.2020	Analysis Starting on	26.09.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	26.09.2020	Analysis Completed on	26.09.2020	
Sample Description: Ambient Air Quality				
Location		: Mines Office		
Month		: September -2020		
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	CO [mg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6	BSET SOP AA-09
1	03/09/2020	76	26	8.7	11.2	0.31
2	07/09/2020	69	18	10.3	11.3	0.42
3	10/09/2020	70	24	8.7	10.1	0.25
4	14/09/2020	73	27	9.9	10.2	0.27
5	17/09/2020	74	23	9.7	11.5	0.24
6	21/09/2020	69	20	10.4	11.3	0.21
7	24/09/2020	61	18	9.6	10.2	0.26
8	28/09/2020	65	20	9.8	10.7	0.22
NAAQ Standards (24 hourly standard)		100 [µg/m³]	60 [µg/m³]	80 [µg/m³]	80 [µg/m³]	02 [mg/m³] (8 hourly)

Legend: PM₁₀-Particulate Matter(Size Less than 10µm)

PM_{2.5}-Particulate Matter(Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide


Authorized Signatory



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B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -09				Issued to:	
Reporting Date	26.09.2020	Analysis Starting on	26.09.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,	
Sample Received on	26.09.2020	Analysis Completed on	26.09.2020		
Sample Description: Ambient Air Quality					
Location : Exit Gate					
Month : September -2020					
Sample Collected by: B.S. Envi-Tech (P) Ltd.,					

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	CO [mg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6	BSET SOP AA-09
1	03/09/2020	77	27	9.2	10.8	0.39
2	07/09/2020	62	14	9.8	10.5	0.25
3	10/09/2020	66	17	8.3	11.2	0.39
4	14/09/2020	79	26	10.5	11.0	0.46
5	17/09/2020	55	16	8.6	9.9	0.21
6	21/09/2020	72	28	9.0	10.1	0.29
7	24/09/2020	70	22	10.3	11.4	0.51
8	28/09/2020	73	24	9.3	10.1	0.64
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]	02 [mg/m ³] (8 hourly)

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)

PM_{2.5}-Particulate Matter (Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide

Authorized Signatory



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B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -09				Issued to:	
Reporting Date	26.09.2020	Analysis Starting on	26.09.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,	
Sample Received on	26.09.2020	Analysis Completed on	26.09.2020		
Sample Description: Ambient Air Quality					
Location : Murgabeda Village					
Month : September-2020					
Sample Collected by: B.S. Envi-Tech (P) Ltd.,					

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	CO [mg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6	BSET SOP AA-09
1	03/09/2020	54	16	10.6	11.5	0.15
2	07/09/2020	61	22	9.7	10.3	0.20
3	10/09/2020	64	23	9.9	10.4	0.23
4	14/09/2020	62	27	8.4	11.1	0.36
5	17/09/2020	54	18	9.0	10.2	0.24
6	21/09/2020	50	12	10.3	11.5	0.26
7	24/09/2020	50	15	9.9	11.1	0.23
8	28/09/2020	43	11	10.4	11.9	0.21
NAAQ Standards (24 hourly standard)		100 [µg/m³]	60 [µg/m³]	80 [µg/m³]	80 [µg/m³]	02 [mg/m³] (8 hourly)

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)

PM_{2.5}-Particulate Matter (Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide

Authorized Signatory



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B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -09				Issued to:	
Reporting Date	26.09.2020	Analysis Starting on	26.09.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,	
Sample Received on	26.09.2020	Analysis Completed on	26.09.2020		
Sample Description: Ambient Air Quality					
Location		: Bileipada Village			
Month		: September-2020			
Sample Collected by: B.S. Envi-Tech (P) Ltd.,					

S.NO	DATE	PM ₁₀ [µg/m ³]	PM _{2.5} [µg/m ³]	SO ₂ [µg/m ³]	NO ₂ [µg/m ³]	CO [mg/m ³]
	Protocol	IS:5182 Part 23	BSET SOP AA-02	IS:5182 Part 2	IS:5182 Part 6	BSET SOP AA-09
1	03/09/2020	65	24	8.9	11.1	0.25
2	07/09/2020	55	14	10.2	12.3	0.31
3	10/09/2020	57	17	9.6	10.9	0.15
4	14/09/2020	60	20	10.1	12.2	0.29
5	17/09/2020	53	17	8.7	10.6	0.36
6	21/09/2020	68	17	9.2	10.8	0.15
7	24/09/2020	66	22	8.5	10.8	0.24
8	28/09/2020	59	16	10.3	12.5	0.23
NAAQ Standards (24 hourly standard)		100 [µg/m ³]	60 [µg/m ³]	80 [µg/m ³]	80 [µg/m ³]	02 [mg/m ³] (8 hourly)

Legend: PM₁₀-Particulate Matter (Size Less than 10µm)

PM_{2.5}-Particulate Matter (Size Less than 2.5µm)

SO₂-Sulphur Dioxide

NO₂- Nitrogen Dioxide


Authorized Signatory


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MURGABEDA MINES

FUGITIVE DUST MONITORING REPORT

MAY-2020



B.S. ENVI - TECH PVT. LTD.

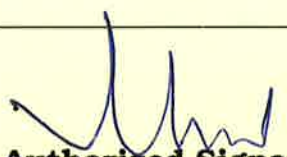
Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -05				Issued to:
Reporting Date	29.05.2020	Analysis Starting on	29.05.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	29.05.2020	Analysis Completed on	29.05.2020	
Sample Description: Fugitive Dust Monitoring				
Location : Mines Face/Haulage Road				
Month : May -2020				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	SPM [$\mu\text{g}/\text{m}^3$]	STANDARD AS PER CFO
1	04/05/2020	253	1200 [$\mu\text{g}/\text{m}^3$]
2	07/05/2020	149	
3	11/05/2020	266	
4	14/05/2020	158	
5	18/05/2020	250	
6	21/05/2020	171	
7	25/05/2020	269	
8	28/05/2020	154	

Legend: SPM-Suspended Particulate Matter


Authorized Signatory



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B.S. ENVI - TECH PVT. LTD.

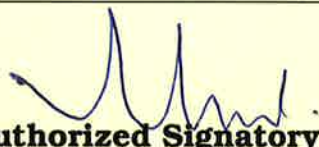
Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -05				Issued to:
Reporting Date	29.05.2020	Analysis Starting on	29.05.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	29.05.2020	Analysis Completed on	29.05.2020	
Sample Description: Fugitive Dust Monitoring				
Location : Crusher Plant				
Month : May -2020				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	SPM [$\mu\text{g}/\text{m}^3$]	STANDARD AS PER CFO
1	04/05/2020	212	1200 [$\mu\text{g}/\text{m}^3$]
2	07/05/2020	191	
3	11/05/2020	177	
4	14/05/2020	189	
5	18/05/2020	206	
6	21/05/2020	234	
7	25/05/2020	199	
8	28/05/2020	185	

Legend: SPM-Suspended Particulate Matter


Authorized Signatory



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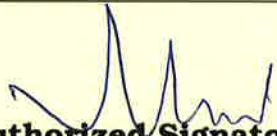
Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -05				Issued to:
Reporting Date	29.05.2020	Analysis Starting on	29.05.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	29.05.2020	Analysis Completed on	29.05.2020	
Sample Description: Fugitive Dust Monitoring				
Location : Loading/Unloading Point				
Month : May -2020				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	SPM [$\mu\text{g}/\text{m}^3$]	STANDARD AS PER CFO
1	04/05/2020	160	1200 [$\mu\text{g}/\text{m}^3$]
2	07/05/2020	193	
3	11/05/2020	167	
4	14/05/2020	221	
5	18/05/2020	185	
6	21/05/2020	162	
7	25/05/2020	199	
8	28/05/2020	210	

Legend: SPM-Suspended Particulate Matter


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MURGABEDA MINES

FUGITIVE DUST MONITORING REPORT

JUNE-2020



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -06				Issued to:
Reporting Date	26.06.2020	Analysis Starting on	26.06.2020	Murgabeda Iron Ore Mines of
Sample Received on	26.06.2020	Analysis Completed on	26.06.2020	
Sample Description: Fugitive Dust Monitoring				M/s D.R.PATNAIK.,
Location		: Mines Face/Haulage Road		
Month		: June -2020		
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	SPM [$\mu\text{g}/\text{m}^3$]	STANDARD AS PER CFO
1	01/06/2020	321	1200 [$\mu\text{g}/\text{m}^3$]
2	04/06/2020	254	
3	08/06/2020	284	
4	11/06/2020	310	
5	15/06/2020	268	
6	18/06/2020	255	
7	22/06/2020	287	
8	25/06/2020	260	

Legend: SPM-Suspended Particulate Matter


Authorized Signatory


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B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -06				Issued to:
Reporting Date	26.06.2020	Analysis Starting on	26.06.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	26.06.2020	Analysis Completed on	26.06.2020	
Sample Description: Fugitive Dust Monitoring				
Location : Crusher Plant				
Month : June -2020				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	SPM [$\mu\text{g}/\text{m}^3$]	STANDARD AS PER CFO
1	01/06/2020	351	1200 [$\mu\text{g}/\text{m}^3$]
2	04/06/2020	362	
3	08/06/2020	342	
4	11/06/2020	325	
5	15/06/2020	320	
6	18/06/2020	316	
7	22/06/2020	334	
8	25/06/2020	327	

Legend: SPM-Suspended Particulate Matter

Authorized Signatory



*Complaints Register is available at Laboratory.



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -06				Issued to:	
Reporting Date	26.06.2020	Analysis Starting on	26.06.2020	Murgabeda Iron Ore Mines of	
Sample Received on	26.06.2020	Analysis Completed on	26.06.2020	M/s D.R.PATNAIK.,	
Sample Description: Fugitive Dust Monitoring					
Location : Loading/Unloading Point					
Month : June -2020					
Sample Collected by: B.S. Envi-Tech (P) Ltd.,					

S.NO	DATE	SPM [$\mu\text{g}/\text{m}^3$]	STANDARD AS PER CFO
1	01/06/2020	264	1200 [$\mu\text{g}/\text{m}^3$]
2	04/06/2020	285	
3	08/06/2020	267	
4	11/06/2020	249	
5	15/06/2020	167	
6	18/06/2020	184	
7	22/06/2020	213	
8	25/06/2020	203	

Legend: SPM-Suspended Particulate Matter


Authorized Signatory



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MURGABEDA MINES

FUGITIVE DUST MONITORING REPORT

JULY-2020



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -07				Issued to:
Reporting Date	31.07.2020	Analysis Starting on	31.07.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	31.07.2020	Analysis Completed on	31.07.2020	
Sample Description: Fugitive Dust Monitoring Location : Mines Face/Haulage Road Month : July -2020				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	SPM [$\mu\text{g}/\text{m}^3$]	STANDARD AS PER CFO
1	06/07/2020	223	1200 [$\mu\text{g}/\text{m}^3$]
2	09/07/2020	216	
3	13/07/2020	207	
4	16/07/2020	220	
5	20/07/2020	198	
6	23/07/2020	176	
7	27/07/2020	166	
8	30/07/2020	206	

Legend: SPM-Suspended Particulate Matter


Authorized Signatory



*Complaints Register is available at Laboratory.

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B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -07				Issued to:
Reporting Date	31.07.2020	Analysis Starting on	31.07.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	31.07.2020	Analysis Completed on	31.07.2020	
Sample Description: Fugitive Dust Monitoring				
Location : Crusher Plant				
Month : July -2020				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	SPM [$\mu\text{g}/\text{m}^3$]	STANDARD AS PER CFO
1	06/07/2020	285	1200 [$\mu\text{g}/\text{m}^3$]
2	09/07/2020	267	
3	13/07/2020	242	
4	16/07/2020	232	
5	20/07/2020	226	
6	23/07/2020	259	
7	27/07/2020	216	
8	30/07/2020	208	

Legend: SPM-Suspended Particulate Matter

Authorized Signatory



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B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -07				Issued to:
Reporting Date	31.07.2020	Analysis Starting on	31.07.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	31.07.2020	Analysis Completed on	31.07.2020	
Sample Description: Fugitive Dust Monitoring Location : Loading/Unloading Point Month : July -2020 Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	SPM [$\mu\text{g}/\text{m}^3$]	STANDARD AS PER CFO
1	06/07/2020	162	1200 [$\mu\text{g}/\text{m}^3$]
2	09/07/2020	175	
3	13/07/2020	196	
4	16/07/2020	142	
5	20/07/2020	135	
6	23/07/2020	116	
7	27/07/2020	184	
8	30/07/2020	164	

Legend: SPM-Suspended Particulate Matter


Authorized Signatory


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MURGABEDA MINES

FUGITIVE DUST MONITORING REPORT

AUGUST-2020



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -08				Issued to:
Reporting Date	31.08.2020	Analysis Starting on	31.08.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	31.08.2020	Analysis Completed on	31.08.2020	
Sample Description: Fugitive Dust Monitoring				
Location : Mines Face/Haulage Road				
Month : August -2020				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	SPM [$\mu\text{g}/\text{m}^3$]	STANDARD AS PER CFO
1	03/08/2020	166	1200 [$\mu\text{g}/\text{m}^3$]
2	06/08/2020	178	
3	10/08/2020	192	
4	13/08/2020	145	
5	17/08/2020	138	
6	20/08/2020	205	
7	24/08/2020	221	
8	27/08/2020	216	

Legend: SPM-Suspended Particulate Matter

Authorized Signatory



*Complaints Register is available at Laboratory.



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -08				Issued to:
Reporting Date	31.08.2020	Analysis Starting on	31.08.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	31.08.2020	Analysis Completed on	31.08.2020	
Sample Description: Fugitive Dust Monitoring				
Location : Crusher Plant				
Month : August -2020				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	SPM [$\mu\text{g}/\text{m}^3$]	STANDARD AS PER CFO
1	03/08/2020	184	1200 [$\mu\text{g}/\text{m}^3$]
2	06/08/2020	164	
3	10/08/2020	153	
4	13/08/2020	128	
5	17/08/2020	215	
6	20/08/2020	206	
7	24/08/2020	223	
8	27/08/2020	211	

Legend: SPM-Suspended Particulate Matter


Authorized Signatory



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B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -08				Issued to:
Reporting Date	31.08.2020	Analysis Starting on	31.08.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	31.08.2020	Analysis Completed on	31.08.2020	
Sample Description: Fugitive Dust Monitoring				
Location : Loading/Unloading Point				
Month : August -2020				
Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	SPM [$\mu\text{g}/\text{m}^3$]	STANDARD AS PER CFO
1	03/08/2020	156	1200 [$\mu\text{g}/\text{m}^3$]
2	06/08/2020	145	
3	10/08/2020	151	
4	13/08/2020	137	
5	17/08/2020	184	
6	20/08/2020	166	
7	24/08/2020	189	
8	27/08/2020	175	

Legend: SPM-Suspended Particulate Matter

Authorized Signatory



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MURGABEDA MINES

FUGITIVE DUST MONITORING REPORT

SEPTEMBER-2020



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -09				Issued to:	
Reporting Date	26.09.2020	Analysis Starting on	26.09.2020	Murgabeda Iron Ore Mines of	
Sample Received on	26.09.2020	Analysis Completed on	26.09.2020	M/s D.R.PATNAIK.,	
Sample Description: Fugitive Dust Monitoring					
Location : Mines Face/Haulage Road					
Month : September -2020					
Sample Collected by: B.S. Envi-Tech (P) Ltd.,					

S.NO	DATE	SPM [$\mu\text{g}/\text{m}^3$]	STANDARD AS PER CFO
1	03/09/2020	204	1200 [$\mu\text{g}/\text{m}^3$]
2	07/09/2020	166	
3	10/09/2020	132	
4	14/09/2020	156	
5	17/09/2020	177	
6	21/09/2020	128	
7	24/09/2020	189	
8	28/09/2020	172	

Legend: SPM-Suspended Particulate Matter


Authorized Signatory



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TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -09				Issued to:	
Reporting Date	26.09.2020	Analysis Starting on	26.09.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,	
Sample Received on	26.09.2020	Analysis Completed on	26.09.2020		
Sample Description: Fugitive Dust Monitoring					
Location : Crusher Plant					
Month : September -2020					
Sample Collected by: B.S. Envi-Tech (P) Ltd.,					

S.NO	DATE	SPM [$\mu\text{g}/\text{m}^3$]	STANDARD AS PER CFO
1	03/09/2020	214	1200 [$\mu\text{g}/\text{m}^3$]
2	07/09/2020	208	
3	10/09/2020	224	
4	14/09/2020	216	
5	17/09/2020	188	
6	21/09/2020	179	
7	24/09/2020	216	
8	28/09/2020	203	

Legend: SPM-Suspended Particulate Matter


Authorized Signatory



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TEST REPORT

REPORT NO: MIOM/DRP/ENV/2020/AAQ/2020 -09				Issued to:
Reporting Date	26.09.2020	Analysis Starting on	26.09.2020	Murgabeda Iron Ore Mines of M/s D.R.PATNAIK.,
Sample Received on	26.09.2020	Analysis Completed on	26.09.2020	
Sample Description: Fugitive Dust Monitoring Location : Loading/Unloading Point Month : September -2020 Sample Collected by: B.S. Envi-Tech (P) Ltd.,				

S.NO	DATE	SPM [$\mu\text{g}/\text{m}^3$]	STANDARD AS PER CFO
1	03/09/2020	154	1200 [$\mu\text{g}/\text{m}^3$]
2	07/09/2020	130	
3	10/09/2020	120	
4	14/09/2020	117	
5	17/09/2020	234	
6	21/09/2020	213	
7	24/09/2020	207	
8	28/09/2020	221	

Legend: SPM-Suspended Particulate Matter

Authorized Signatory



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MURGABEDA MINES

GROUND WATER QUALITY REPORT

MAY-2020



B.S. ENVI - TECH PVT. LTD.

Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-02109	
Sample Description: Ground Water Sample	Lab Code No : 200839105	
	Issue Date : 01.06.2020	
	Your Ref : Letter Dated 25.05.2020	
	Date of Receipt : 25.05.2020	
	Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Date of Registration
Packing : Plastic Bottles& Pre-Sterilized Bottle	Date of commencement of testing	25.05.2020
Test Required : As given below	Date of completion of testing	01.06.2020
	Sample condition at receipt	Found ok
	Sample tested as received	
Sampling Details		
Date of Sampling: 19.05.2020	Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Murgabeda Village	General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
1	Odour	--	IS:3025 -Part-5	Agreeable	Agreeable	Agreeable
2	Colour	Hazen Units	IS:3025 -Part-4	< 5	5	15
3	pH	--	IS:3025- Part-11	6.82	6.5-8.5	No Relaxation
4	Turbidity	NTU	IS:3025 -Part-10	< 1	1	5
5	Total Hardness as CaCO ₃	mg/l	IS:3025 -Part-21	58	200	600
6	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.09	1.0	No Relaxation
7	Chlorides as Cl	mg/l	IS:3025 -Part-32	26	250	1000
8	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	120	500	2000
9	Calcium as Ca	mg/l	IS:3025- Part-40	16	75	200
10	Magnesium as Mg	mg/l	IS:3025 -Part-46	4.4	30	100
11	Sulphate as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, APHA 23 rd Edition 2017	12	200	400
12	Nitrate as NO ₃	mg/l	4500-NO ₃ B Ultraviolet Spectrophotometric Screening Method	7.6	45	No Relaxation
13	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.25	1	1.5
14	Total Alkalinity as CaCO ₃	mg/l	IS:3025 -Part-23	34	200	600

Interpretation of results: Nil
Deviation from test method: Nil



Authorized Signatory
(Venugopal Badri)
Quality manager

Note: This report is subject to the terms and conditions mentioned overleaf.



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-02109	
		Lab Code No : 200839105	
		Issue Date : 01.06.2020	
		Your Ref : Letter Dated 25.05.2020	
Sample Description: Ground Water Sample		Date of Receipt : 25.05.2020	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below	Date of Registration		25.05.2020
	Date of commencement of testing		25.05.2020
	Date of completion of testing		01.06.2020
	Sample condition at receipt		Found ok
	Sample tested as received		
Date of Sampling: 19.05.2020		Sampling Details	
Location of Sampling: Murgabeda Village		Sampling Method/Procedure: IS 3025 Part 1	
		General Environment conditions: Ok	
		Page No: 2 of 2	

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
15	Boron as B	mg/l	4500-B B. Curcumin Method, APHA 23 rd Edition 2017	< 0.10	0.5	1
16	Aluminium as Al	mg/l	3500 Al B – Eroochrome Cyanine R method	< 0.02	0.03	0.2
17	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.05	1.5
18	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.1	0.3
19	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
20	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5	15
21	Cadmium as Cd	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.003	0.003	No Relaxation
22	Lead as Pb	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
23	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.001	No Relaxation
24	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
25	Total Chromium as Cr	mg/l	3111 C of AOPHA 23 rd Edition 2017	< 0.02	0.05	No Relaxation
26	Total Coliforms	CFU/100ml	IS: 1622 – 1981	Absent	-	

Interpretation of results: Nil
Deviation from test method: Nil



[Signature]
**Authorized Signatory
(Venugopal Badri)
Quality manager**

... End of the Report...

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-02110	
Sample Description: Ground Water Sample	Lab Code No	: 200839005
	Issue Date	: 01.06.2020
	Your Ref	: Letter Dated 25.05.2020
	Date of Receipt	: 25.05.2020
	Date of Registration	25.05.2020
	Date of commencement of testing	25.05.2020
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Date of completion of testing	01.06.2020
Packing : Plastic Bottles& Pre-Sterilized Bottle	Sample condition at receipt	Found ok
Test Required : As given below	Sample tested as received	
Sampling Details		
Date of Sampling: 19.05.2020	Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Daldir Village	General Environment conditions: Ok	
Page No: 1 of 2		

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
1	Odour	--	IS:3025 -Part-5	Agreeable	Agreeable	Agreeable
2	Colour	Hazen Units	IS:3025 -Part-4	< 5	5	15
3	pH	--	IS:3025- Part-11	6.74	6.5-8.5	No Relaxation
4	Turbidity	NTU	IS:3025 -Part-10	< 1	1	5
5	Total Hardness as CaCO ₃	mg/l	IS:3025 -Part-21	190	200	600
6	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.08	1.0	No Relaxation
7	Chlorides as Cl	mg/l	IS:3025 -Part-32	74	250	1000
8	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	468	500	2000
9	Calcium as Ca	mg/l	IS:3025- Part-40	52	75	200
10	Magnesium as Mg	mg/l	IS:3025 -Part-46	15	30	100
11	Sulphate as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, APHA 23 rd Edition 2017	24	200	400
12	Nitrate as NO ₃	mg/l	4500-NO ₃ B Ultraviolet Spectrophotometric Screening Method	13	45	No Relaxation
13	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.54	1	1.5
14	Total Alkalinity as CaCO ₃	mg/l	IS:3025 -Part-23	218	200	600

Interpretation of results: Nil
Deviation from test method: Nil



Authorized Signatory
(Venugopal Badri)
Quality manager

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-02110		
Sample Description: Ground Water Sample	Lab Code No	: 200839005	
	Issue Date	: 01.06.2020	
	Your Ref	: Letter Dated 25.05.2020	
	Date of Receipt	: 25.05.2020	
	Quantity	: 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	
Packing	: Plastic Bottles& Pre-Sterilized Bottle	Date of Registration	25.05.2020
Test Required : As given below		Date of commencement of testing	25.05.2020
		Date of completion of testing	01.06.2020
		Sample condition at receipt	Found ok
		Sample tested as received	
Date of Sampling: 19.05.2020 Location of Sampling: Daldur Village		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
15	Boron as B	mg/l	4500-B B. Curcumin Method, APHA 23 rd Edition 2017	< 0.10	0.5	1
16	Aluminium as Al	mg/l	3500 Al B – Eroochrome Cyanine R method	< 0.02	0.03	0.2
17	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.05	1.5
18	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.1	0.3
19	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
20	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5	15
21	Cadmium as Cd	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.003	0.003	No Relaxation
22	Lead as Pb	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
23	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.001	No Relaxation
24	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
25	Total Chromium as Cr	mg/l	3111 C of AOPHA 23 rd Edition 2017	< 0.02	0.05	No Relaxation
26	Total Coliforms	CFU/100ml	IS: 1622 – 1981	Absent	-	-

Interpretation of results: Nil
Deviation from test method: Nil




Authorized Signatory
(Venugopal Badri)
Quality manager

... End of the Report...

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-02111	
Sample Description: Ground Water Sample	Lab Code No : 200838905	
	Issue Date : 01.06.2020	
	Your Ref : Letter Dated 25.05.2020	
	Date of Receipt : 25.05.2020	
	Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Date of Registration
Packing : Plastic Bottles& Pre-Sterilized Bottle	Date of commencement of testing	25.05.2020
Test Required : As given below	Date of completion of testing	01.06.2020
	Sample condition at receipt	Found ok
	Sample tested as received	
Sampling Details		
Date of Sampling: 19.05.2020	Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Deojhar Village	General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
1	Odour	--	IS:3025 -Part-5	Agreeable	Agreeable	Agreeable
2	Colour	Hazen Units	IS:3025 -Part-4	< 5	5	15
3	pH	--	IS:3025- Part-11	6.73	6.5-8.5	No Relaxation
4	Turbidity	NTU	IS:3025 -Part-10	< 1	1	5
5	Total Hardness as CaCO ₃	mg/l	IS:3025 -Part-21	180	200	600
6	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.11	1.0	No Relaxation
7	Chlorides as Cl	mg/l	IS:3025 -Part-32	38	250	1000
8	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	364	500	2000
9	Calcium as Ca	mg/l	IS:3025- Part-40	40	75	200
10	Magnesium as Mg	mg/l	IS:3025 -Part-46	19	30	100
11	Sulphate as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, APHA 23 rd Edition 2017	21	200	400
12	Nitrate as NO ₃	mg/l	4500-NO ₃ B Ultraviolet Spectrophotometric Screening Method	13	45	No Relaxation
13	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.40	1	1.5
14	Total Alkalinity as CaCO ₃	mg/l	IS:3025 -Part-23	194	200	600

Interpretation of results: Nil
Deviation from test method: Nil




Authorized Signatory
(Venugopal Badri)
Quality manager

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-02111	
		Lab Code No : 200838905	
		Issue Date : 01.06.2020	
		Your Ref : Letter Dated 25.05.2020	
Sample Description: Ground Water Sample		Date of Receipt : 25.05.2020	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below	Date of Registration		25.05.2020
	Date of commencement of testing		25.05.2020
	Date of completion of testing		01.06.2020
	Sample condition at receipt		Found ok
	Sample tested as received		
Date of Sampling: 19.05.2020 Location of Sampling: Deojhar Village		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
15	Boron as B	mg/l	4500-B B. Curcumin Method, APHA 23 rd Edition 2017	< 0.10	0.5	1
16	Aluminium as Al	mg/l	3500 Al B – Eroochrome Cyanine R method	< 0.02	0.03	0.2
17	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.05	1.5
18	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.1	0.3
19	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
20	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5	15
21	Cadmium as Cd	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.003	0.003	No Relaxation
22	Lead as Pb	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
23	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.001	No Relaxation
24	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
25	Total Chromium as Cr	mg/l	3111 C of AOPHA 23 rd Edition 2017	< 0.02	0.05	No Relaxation
26	Total Coliforms	CFU/100ml	IS: 1622 – 1981	Absent	-	

Interpretation of results: Nil
Deviation from test method: Nil




Authorized Signatory
(Venugopal Badri)
Quality manager

... End of the Report...

Note: This report is subject to the terms and conditions mentioned overleaf.



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-02112 Lab Code No : 200838805 Issue Date : 01.06.2020 Your Ref : Letter Dated 25.05.2020 Date of Receipt : 25.05.2020	
Sample Description: Ground Water Sample		Date of Registration : 25.05.2020 Date of commencement of testing : 25.05.2020 Date of completion of testing : 01.06.2020 Sample condition at receipt : Found ok Sample tested as received	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below		Sampling Details Date of Sampling: 19.05.2020 Location of Sampling: Bileipada Village Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
1	Odour	--	IS:3025 -Part-5	Agreeable	Agreeable	Agreeable
2	Colour	Hazen Units	IS:3025 -Part-4	< 5	5	15
3	pH	--	IS:3025- Part-11	6.69	6.5-8.5	No Relaxation
4	Turbidity	NTU	IS:3025 -Part-10	< 1	1	5
5	Total Hardness as CaCO ₃	mg/l	IS:3025 -Part-21	224	200	600
6	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.13	1.0	No Relaxation
7	Chlorides as Cl	mg/l	IS:3025 -Part-32	72	250	1000
8	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	428	500	2000
9	Calcium as Ca	mg/l	IS:3025- Part-40	60	75	200
10	Magnesium as Mg	mg/l	IS:3025 -Part-46	18	30	100
11	Sulphate as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, APHA 23 rd Edition 2017	54	200	400
12	Nitrate as NO ₃	mg/l	4500-NO ₃ B Ultraviolet Spectrophotometric Screening Method	32	45	No Relaxation
13	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.49	1	1.5
14	Total Alkalinity as CaCO ₃	mg/l	IS:3025 -Part-23	146	200	600

Interpretation of results: Nil
Deviation from test method: Nil



Authorized Signatory
(Venugopal Badri)
Quality manager

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-02112	
Sample Description: Ground Water Sample	Lab Code No : 200838805	
	Issue Date : 01.06.2020	
	Your Ref : Letter Dated 25.05.2020	
	Date of Receipt : 25.05.2020	
	Date of Registration	25.05.2020
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Date of commencement of testing	25.05.2020
Packing : Plastic Bottles& Pre-Sterilized Bottle	Date of completion of testing	01.06.2020
Test Required : As given below	Sample condition at receipt	Found ok
	Sample tested as received	
Sampling Details		
Date of Sampling: 19.05.2020	Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Bileipada Village	General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
15	Boron as B	mg/l	4500-B B. Curcumin Method, APHA 23 rd Edition 2017	< 0.10	0.5	1
16	Aluminium as Al	mg/l	3500 Al B - Eroochrome Cyanine R method	< 0.02	0.03	0.2
17	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.05	1.5
18	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.1	0.3
19	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
20	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5	15
21	Cadmium as Cd	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.003	0.003	No Relaxation
22	Lead as Pb	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
23	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.001	No Relaxation
24	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
25	Total Chromium as Cr	mg/l	3111 C of A0PHA 23 rd Edition 2017	< 0.02	0.05	No Relaxation
26	Total Coliforms	CFU/100ml	IS: 1622 - 1981	Absent	-	-

Interpretation of results: Nil
Deviation from test method: Nil




Authorized Signatory
(Venugopal Badri)
Quality manager

... End of the Report...

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MURGABEDA MINES

GROUND WATER QUALITY REPORT

SEPTEMBER-2020



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-05095	
		Lab Code No : 200540509	
		Issue Date : 19.09.2020	
		Your Ref : Letter Dated 07.09.2020	
Sample Description: Ground Water Sample		Date of Receipt : 07.09.2020	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below	Date of Registration		07.09.2020
	Date of commencement of testing		08.09.2020
	Date of completion of testing		18.09.2020
	Sample condition at receipt		Found ok
	Sample tested as received		
Date of Sampling: 03.09.2020 Location of Sampling: Murgabeda Village		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
1	Odour	--	IS:3025 -Part-5	Agreeable	Agreeable	Agreeable
2	Colour	Hazen Units	IS:3025 -Part-4	< 5	5	15
3	pH	--	IS:3025- Part-11	6.95	6.5-8.5	No Relaxation
4	Turbidity	NTU	IS:3025 -Part-10	< 1	1	5
5	Total Hardness as CaCO ₃	mg/l	IS:3025 -Part-21	60	200	600
6	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.08	1.0	No Relaxation
7	Chlorides as Cl	mg/l	IS:3025 -Part-32	30	250	1000
8	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	135	500	2000
9	Calcium as Ca	mg/l	IS:3025- Part-40	18	75	200
10	Magnesium as Mg	mg/l	IS:3025 -Part-46	3.6	30	100
11	Sulphate as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, APHA 23 rd Edition 2017	15	200	400
12	Nitrate as NO ₃	mg/l	4500-NO ₃ B Ultraviolet Spectrophotometric Screening Method	8.1	45	No Relaxation
13	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.26	1	1.5
14	Total Alkalinity as CaCO ₃	mg/l	IS:3025 -Part-23	40	200	600

Interpretation of results: Nil, Deviation from test method: Nil

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-05095 Lab Code No : 200540509 Issue Date : 19.09.2020 Your Ref : Letter Dated 07.09.2020 Date of Receipt : 07.09.2020
Sample Description: Ground Water Sample	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Date of Registration 07.09.2020 Date of commencement of testing 08.09.2020 Date of completion of testing 18.09.2020 Sample condition at receipt Found ok Sample tested as received
Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below	
Date of Sampling: 03.09.2020 Location of Sampling: Murgabeda Village	
Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
15	Boron as B	mg/l	4500-B B. Curcumin Method, APHA 23 rd Edition 2017	< 0.10	0.5	1
16	Aluminium as Al	mg/l	3500 Al B - Eroochrome Cyanine R method	< 0.02	0.03	0.2
17	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.05	1.5
18	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.1	0.3
19	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
20	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5	15
21	Cadmium as Cd	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.003	0.003	No Relaxation
22	Lead as Pb	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
23	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.001	No Relaxation
24	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
25	Total Chromium as Cr	mg/l	3111 C of AOPHA 23 rd Edition 2017	< 0.02	0.05	No Relaxation
26	Total Coliforms	CFU/100ml	IS: 1622 - 1981	Absent		

Interpretation of results: Nil, Deviation from test method: Nil

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-05096	
Sample Description: Ground Water Sample Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles & Pre-Sterilized Bottle Test Required : As given below	Lab Code No : 200540409	
	Issue Date : 19.09.2020	
	Your Ref : Letter Dated 07.09.2020	
	Date of Receipt : 07.09.2020	
	Date of Registration	07.09.2020
	Date of commencement of testing	08.09.2020
	Date of completion of testing	18.09.2020
	Sample condition at receipt	Found ok
	Sample tested as received	
Sampling Details		
Date of Sampling: 03.09.2020	Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Daldir Village	General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
1	Odour	--	IS:3025 -Part-5	Agreeable	Agreeable	Agreeable
2	Colour	Hazen Units	IS:3025 -Part-4	< 5	5	15
3	pH	--	IS:3025- Part-11	6.83	6.5-8.5	No Relaxation
4	Turbidity	NTU	IS:3025 -Part-10	< 1	1	5
5	Total Hardness as CaCO ₃	mg/l	IS:3025 -Part-21	200	200	600
6	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.07	1.0	No Relaxation
7	Chlorides as Cl	mg/l	IS:3025 -Part-32	79	250	1000
8	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	495	500	2000
9	Calcium as Ca	mg/l	IS:3025- Part-40	54	75	200
10	Magnesium as Mg	mg/l	IS:3025 -Part-46	16	30	100
11	Sulphate as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, APHA 23 rd Edition 2017	29	200	400
12	Nitrate as NO ₃	mg/l	4500-NO ₃ B Ultraviolet Spectrophotometric Screening Method	14	45	No Relaxation
13	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.55	1	1.5
14	Total Alkalinity as CaCO ₃	mg/l	IS:3025 -Part-23	225	200	600

Interpretation of results: Nil, Deviation from test method: Nil

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-05096	
		Lab Code No : 200540409	
		Issue Date : 19.09.2020	
		Your Ref : Letter Dated 07.09.2020	
Sample Description: Ground Water Sample		Date of Receipt : 07.09.2020	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below	Date of Registration		07.09.2020
	Date of commencement of testing		08.09.2020
	Date of completion of testing		18.09.2020
	Sample condition at receipt		Found ok
	Sample tested as received		
Date of Sampling: 03.09.2020 Location of Sampling: Daldir Village		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
15	Boron as B	mg/l	4500-B B. Curcumin Method, APHA 23 rd Edition 2017	< 0.10	0.5	1
16	Aluminium as Al	mg/l	3500 Al B – Eroochrome Cyanine R method	< 0.02	0.03	0.2
17	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.05	1.5
18	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.1	0.3
19	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
20	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5	15
21	Cadmium as Cd	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.003	0.003	No Relaxation
22	Lead as Pb	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
23	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.001	No Relaxation
24	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
25	Total Chromium as Cr	mg/l	3111 C of AOPHA 23 rd Edition 2017	< 0.02	0.05	No Relaxation
26	Total Coliforms	CFU/100ml	IS: 1622 – 1981	Absent	-	-

Interpretation of results: Nil, Deviation from test method: Nil

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

... End of the Report...

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CIN No. : U74210TG1999PTC032358



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-05097 Lab Code No : 200540309 Issue Date : 19.09.2020 Your Ref : Letter Dated 07.09.2020 Date of Receipt : 07.09.2020	
Sample Description: Ground Water Sample		Date of Registration 07.09.2020 Date of commencement of testing 08.09.2020 Date of completion of testing 18.09.2020 Sample condition at receipt Found ok Sample tested as received	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles & Pre-Sterilized Bottle Test Required : As given below		Sampling Details Date of Sampling: 03.09.2020 Location of Sampling: Deojhar Village Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
1	Odour	--	IS:3025 -Part-5	Agreeable	Agreeable	Agreeable
2	Colour	Hazen Units	IS:3025 -Part-4	< 5	5	15
3	pH	--	IS:3025- Part-11	6.81	6.5-8.5	No Relaxation
4	Turbidity	NTU	IS:3025 -Part-10	< 1	1	5
5	Total Hardness as CaCO ₃	mg/l	IS:3025 -Part-21	170	200	600
6	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.13	1.0	No Relaxation
7	Chlorides as Cl	mg/l	IS:3025 -Part-32	40	250	1000
8	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	364	500	2000
9	Calcium as Ca	mg/l	IS:3025- Part-40	36	75	200
10	Magnesium as Mg	mg/l	IS:3025 -Part-46	19	30	100
11	Sulphate as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, APHA 23 rd Edition 2017	25	200	400
12	Nitrate as NO ₃	mg/l	4500-NO ₃ B Ultraviolet Spectrophotometric Screening Method	12	45	No Relaxation
13	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.40	1	1.5
14	Total Alkalinity as CaCO ₃	mg/l	IS:3025 -Part-23	200	200	600

Interpretation of results: Nil, Deviation from test method: Nil

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-05097 Lab Code No : 200540309 Issue Date : 19.09.2020 Your Ref : Letter Dated 07.09.2020 Date of Receipt : 07.09.2020	
Sample Description: Ground Water Sample		Date of Registration : 07.09.2020 Date of commencement of testing : 08.09.2020 Date of completion of testing : 18.09.2020 Sample condition at receipt : Found ok Sample tested as received	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below		Sampling Details Date of Sampling: 03.09.2020 Location of Sampling: Deojhar Village Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
15	Boron as B	mg/l	4500-B B. Curcumin Method, APHA 23 rd Edition 2017	< 0.10	0.5	1
16	Aluminium as Al	mg/l	3500 Al B – Erochrome Cyanine R method	< 0.02	0.03	0.2
17	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.05	1.5
18	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.1	0.3
19	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
20	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5	15
21	Cadmium as Cd	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.003	0.003	No Relaxation
22	Lead as Pb	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
23	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.001	No Relaxation
24	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
25	Total Chromium as Cr	mg/l	3111 C of AOPHA 23 rd Edition 2017	< 0.02	0.05	No Relaxation
26	Total Coliforms	CFU/100ml	IS: 1622 – 1981	Absent	-	-

Interpretation of results: Nil, Deviation from test method: Nil

... End of the Report...

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-05098 Lab Code No : 200540209 Issue Date : 19.09.2020 Your Ref : Letter Dated 07.09.2020 Date of Receipt : 07.09.2020	
Sample Description: Ground Water Sample		Date of Registration : 07.09.2020 Date of commencement of testing : 08.09.2020 Date of completion of testing : 18.09.2020 Sample condition at receipt : Found ok Sample tested as received	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles & Pre-Sterilized Bottle Test Required : As given below		Sampling Details Date of Sampling: 03.09.2020 Location of Sampling: Bileipada Village Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
1	Odour	--	IS:3025 -Part-5	Agreeable	Agreeable	Agreeable
2	Colour	Hazen Units	IS:3025 -Part-4	< 5	5	15
3	pH	--	IS:3025- Part-11	6.75	6.5-8.5	No Relaxation
4	Turbidity	NTU	IS:3025 -Part-10	< 1	1	5
5	Total Hardness as CaCO ₃	mg/l	IS:3025 -Part-21	215	200	600
6	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.15	1.0	No Relaxation
7	Chlorides as Cl	mg/l	IS:3025 -Part-32	78	250	1000
8	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	428	500	2000
9	Calcium as Ca	mg/l	IS:3025- Part-40	58	75	200
10	Magnesium as Mg	mg/l	IS:3025 -Part-46	17	30	100
11	Sulphate as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, APHA 23 rd Edition 2017	51	200	400
12	Nitrate as NO ₃	mg/l	4500-NO ₃ B Ultraviolet Spectrophotometric Screening Method	30	45	No Relaxation
13	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.49	1	1.5
14	Total Alkalinity as CaCO ₃	mg/l	IS:3025 -Part-23	150	200	600

Interpretation of results: Nil, Deviation from test method: Nil

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist



Note: This report is subject to the terms and conditions mentioned overleaf.
Complaints Register is available at Laboratory.

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CIN No. : U74210TG1999PTC032358



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-05098	
		Lab Code No : 200540209	
		Issue Date : 19.09.2020	
		Your Ref : Letter Dated 07.09.2020	
Sample Description: Ground Water Sample		Date of Receipt : 07.09.2020	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below	Date of Registration		07.09.2020
	Date of commencement of testing		08.09.2020
	Date of completion of testing		18.09.2020
	Sample condition at receipt		Found ok
	Sample tested as received		
Date of Sampling: 03.09.2020 Location of Sampling: Bilepada Village		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	Requirement as per IS 10500:2012	
					Acceptable limits	Permissible limits in absence of alternative source
15	Boron as B	mg/l	4500-B B. Curcumin Method, APHA 23 rd Edition 2017	< 0.10	0.5	1
16	Aluminium as Al	mg/l	3500 Al B - Eroochrome Cyanine R method	< 0.02	0.03	0.2
17	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.05	1.5
18	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	0.1	0.3
19	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
20	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5	15
21	Cadmium as Cd	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.003	0.003	No Relaxation
22	Lead as Pb	mg/l	3111 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
23	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.001	No Relaxation
24	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.01	No Relaxation
25	Total Chromium as Cr	mg/l	3111 C of AOPHA 23 rd Edition 2017	< 0.02	0.05	No Relaxation
26	Total Coliforms	CFU/100ml	IS: 1622 - 1981	Absent	-	-

Interpretation of results: Nil, Deviation from test method: Nil

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

... End of the Report...

Note: This report is subject to the terms and conditions mentioned overleaf.
Complaints Register is available at Laboratory.

MURGABEDA MINES

SURFACE WATER QUALITY REPORT

MAY-2020



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-02113	
		Lab Code No : 200838705	
		Issue Date : 01.06.2020	
		Your Ref : Letter Dated 25.05.2020	
Sample Description: Surface Water Sample		Date of Receipt : 25.05.2020	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below	Date of Registration		25.05.2020
	Date of commencement of testing		25.05.2020
	Date of completion of testing		01.06.2020
	Sample condition at receipt		Found ok
	Sample tested as received		
Date of Sampling: 19.05.2020 Location of Sampling: Suna river Upstream		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.68	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	72	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	180	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	11	30
6.	COD	mg/l	IS:3025 - Part-58	72	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	24	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	18	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	30	-
12.	Colour	Hazen Units	IS:3025 -Part-4	5	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.28	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.35	2.0

Interpretation of results: Nil

Deviation from test method: Nil



(Signature)
Authorized Signatory
(Venugopal Badri)
Quality Manager

Note: This report is subject to the terms and conditions mentioned overleaf.



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-02113 Lab Code No : 200838705 Issue Date : 01.06.2020 Your Ref : Letter Dated 25.05.2020 Date of Receipt : 25.05.2020	
Sample Description: Surface Water Sample		Date of Registration : 25.05.2020 Date of commencement of testing : 25.05.2020 Date of completion of testing : 01.06.2020 Sample condition at receipt : Found ok Sample tested as received	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below			
Date of Sampling: 19.05.2020 Location of Sampling: Suna river Upstream		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	42.5	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	21	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	240	-

Interpretation of results: Nil
 Deviation from test method: Nil



(Signature)
 Authorized Signatory
 (Venugopal Badri)
 Quality Manager

... End of the Report...

Note: This report is subject to the terms and conditions mentioned overleaf.

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-02114	
Sample Description: Surface Water Sample	Lab Code No : 200838605	
	Issue Date : 01.06.2020	
	Your Ref : Letter Dated 25.05.2020	
	Date of Receipt : 25.05.2020	
	Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Date of Registration
Packing : Plastic Bottles& Pre-Sterilized Bottle	Date of commencement of testing	25.05.2020
Test Required : As given below	Date of completion of testing	01.06.2020
	Sample condition at receipt	Found ok
	Sample tested as received	
Sampling Details		
Date of Sampling: 19.05.2020	Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Suna river Downstream	General Environment conditions: Ok	

Page No: 1 of 2


TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.74	5.5 - 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	86	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	204	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	16	30
6.	COD	mg/l	IS:3025 - Part-58	84	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	36	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	22	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	40	-
12.	Colour	Hazen Units	IS:3025 -Part-4	10	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.33	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.39	2.0

Interpretation of results: Nil

Deviation from test method: Nil




Authorized Signatory
(Venugopal Badri)
Quality Manager

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-02114 Lab Code No : 200838605 Issue Date : 01.06.2020 Your Ref : Letter Dated 25.05.2020 Date of Receipt : 25.05.2020
Sample Description: Surface Water Sample	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology)	Date of Registration 25.05.2020 Date of commencement of testing 25.05.2020 Date of completion of testing 01.06.2020 Sample condition at receipt Found ok Sample tested as received
Packing : Plastic Bottles & Pre-Sterilized Bottle Test Required : As given below	
Date of Sampling: 19.05.2020 Location of Sampling: Suna river Downstream	Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok


Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	45.2	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	11	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	280	-

Interpretation of results: Nil
Deviation from test method: Nil




Authorized Signatory
(Venugopal Badri)
Quality Manager

... End of the Report...

Note: This report is subject to the terms and conditions mentioned overleaf.
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CIN No. : U74210TG1999PTC032358



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-02115		
Sample Description: Surface Water Sample	Lab Code No	: 200838505	
	Issue Date	: 01.06.2020	
	Your Ref	: Letter Dated 25.05.2020	
	Date of Receipt	: 25.05.2020	
	Quantity	: 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	
Packing	: Plastic Bottles& Pre-Sterilized Bottle	Date of Registration	25.05.2020
Test Required	: As given below	Date of commencement of testing	25.05.2020
		Date of completion of testing	01.06.2020
		Sample condition at receipt	Found ok
		Sample tested as received	
Date of Sampling: 19.05.2020 Location of Sampling: Mahadev Nala Upstream		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.62	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	78	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	182	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	10	30
6.	COD	mg/l	IS:3025 - Part-58	64	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	30	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	21	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	28	-
12.	Colour	Hazen Units	IS:3025 -Part-4	5	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.27	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.32	2.0

Interpretation of results: Nil

Deviation from test method: Nil




Authorized Signatory
(Venugopal Badri)
Quality Manager

Note: This report is subject to the terms and conditions mentioned overleaf.



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-02115	
		Lab Code No : 200838505	
		Issue Date : 01.06.2020	
		Your Ref : Letter Dated 25.05.2020	
Sample Description: Surface Water Sample		Date of Receipt : 25.05.2020	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below	Date of Registration		25.05.2020
	Date of commencement of testing		25.05.2020
	Date of completion of testing		01.06.2020
	Sample condition at receipt		Found ok
	Sample tested as received		
Date of Sampling: 19.05.2020 Location of Sampling: Mahadev Nala Upstream		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	41.9	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	5	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	300	-

Interpretation of results: Nil

Deviation from test method: Nil



Authorized Signatory
(Venugopal Badri)
Quality Manager

... End of the Report...

Note: This report is subject to the terms and conditions mentioned overleaf.
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CIN No. : U74210TG1999PTC032358



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-02116		
Sample Description: Surface Water Sample	Lab Code No	: 200838405	
	Issue Date	: 01.06.2020	
	Your Ref	: Letter Dated 25.05.2020	
	Date of Receipt	: 25.05.2020	
	Quantity	: 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	
Packing	: Plastic Bottles& Pre-Sterilized Bottle	Date of Registration	25.05.2020
Test Required : As given below		Date of commencement of testing	25.05.2020
		Date of completion of testing	01.06.2020
		Sample condition at receipt	Found ok
		Sample tested as received	
Sampling Details			
Date of Sampling: 19.05.2020		Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Mahadev Nala Downstream		General Environment conditions: Ok	

Page No: 1 of 2


TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.74	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	86	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	190	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	15	30
6.	COD	mg/l	IS:3025 - Part-58	76	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	40	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	27	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	34	-
12.	Colour	Hazen Units	IS:3025 -Part-4	10	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.31	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.35	2.0

Interpretation of results: Nil

Deviation from test method: Nil




Authorized Signatory
(Venugopal Badri)
Quality Manager

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-02116	
		Lab Code No : 200838405	
		Issue Date : 01.06.2020	
		Your Ref : Letter Dated 25.05.2020	
Sample Description: Surface Water Sample		Date of Receipt : 25.05.2020	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below	Date of Registration		25.05.2020
	Date of commencement of testing		25.05.2020
	Date of completion of testing		01.06.2020
	Sample condition at receipt		Found ok
	Sample tested as received		
Date of Sampling: 19.05.2020		Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Mahadev Nala Downstream		General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	44.2	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	Nil	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	350	-

Interpretation of results: Nil

Deviation from test method: Nil

... End of the Report...



Authorized Signatory
(Venugopal Badri)
Quality Manager

Note: This report is subject to the terms and conditions mentioned overleaf.
Complaints Register is available at Laboratory.

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-02117	
Sample Description: Surface Water Sample		Lab Code No : 200838305	
		Issue Date : 01.06.2020	
		Your Ref : Letter Dated 25.05.2020	
		Date of Receipt : 25.05.2020	
		Date of Registration : 25.05.2020	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)		Date of commencement of testing	25.05.2020
Packing : Plastic Bottles& Pre-Sterilized Bottle		Date of completion of testing	01.06.2020
Test Required : As given below		Sample condition at receipt	Found ok
		Sample tested as received	
Date of Sampling: 19.05.2020 Location of Sampling: Baitarani River		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.74	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	62	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	184	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	10	30
6.	COD	mg/l	IS:3025 - Part-58	68	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	24	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	16	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	24	-
12.	Colour	Hazen Units	IS:3025 -Part-4	5	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.26	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.29	2.0

Interpretation of results: Nil

Deviation from test method: Nil



Authorized Signatory
(Venugopal Badri)
Quality Manager

Note: This report is subject to the terms and conditions mentioned overleaf.



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-02117		
Sample Description: Surface Water Sample	Lab Code No	: 200838305	
	Issue Date	: 01.06.2020	
	Your Ref	: Letter Dated 25.05.2020	
	Date of Receipt	: 25.05.2020	
	Quantity	: 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology)	
Packing	: Plastic Bottles & Pre-Sterilized Bottle	Date of Registration	25.05.2020
Test Required : As given below		Date of commencement of testing	25.05.2020
		Date of completion of testing	01.06.2020
		Sample condition at receipt	Found ok
		Sample tested as received	
Date of Sampling: 19.05.2020 Location of Sampling: Baitarani River		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	42.7	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	16	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	300	-

Interpretation of results: Nil

Deviation from test method: Nil

... End of the Report...



Authorized Signatory
(Venugopal Badri)
Quality Manager

Note: This report is subject to the terms and conditions mentioned overleaf.

MURGABEDA MINES

SURFACE WATER QUALITY REPORT

JUNE-2020



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-03204 Lab Code No : 200729606 Issue Date : 19.06.2020 Your Ref : Letter Dated 08.06.2020 Date of Receipt : 08.06.2020	
Sample Description: Surface Water Sample		Date of Registration : 08.06.2020 Date of commencement of testing : 09.06.2020 Date of completion of testing : 18.06.2020 Sample condition at receipt : Found ok Sample tested as received	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology)			
Packing : Plastic Bottles & Pre-Sterilized Bottle			
Test Required : As given below			
Date of Sampling: 04.06.2020 Location of Sampling: Suna river Upstream		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.72	5.5 - 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	84	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	176	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	14	30
6.	COD	mg/l	IS:3025 - Part-58	88	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	25	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	16	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	28	-
12.	Colour	Hazen Units	IS:3025 -Part-4	5	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.31	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.38	2.0

Interpretation of results: Nil
 Deviation from test method: Nil

Authorized Signatory
 (Venugopal Badri)
 Quality Manager

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-03204 Lab Code No : 200729606 Issue Date : 19.06.2020 Your Ref : Letter Dated 08.06.2020 Date of Receipt : 08.06.2020	
Sample Description: Surface Water Sample		Date of Registration 08.06.2020 Date of commencement of testing 09.06.2020 Date of completion of testing 18.06.2020 Sample condition at receipt Found ok Sample tested as received	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles & Pre-Sterilized Bottle Test Required : As given below		Sampling Details Date of Sampling: 04.06.2020 Location of Sampling: Suna river Upstream Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	41.9	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	16	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	280	-

Interpretation of results: Nil
 Deviation from test method: Nil

Authorized Signatory
 (Venugopal Badri)
 Quality Manager

... End of the Report ...

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-03205 Lab Code No : 200729506 Issue Date : 19.06.2020 Your Ref : Letter Dated 08.06.2020 Date of Receipt : 08.06.2020	
Sample Description: Surface Water Sample		Date of Registration 08.06.2020 Date of commencement of testing 09.06.2020 Date of completion of testing 18.06.2020 Sample condition at receipt Found ok Sample tested as received	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below		Sampling Details Date of Sampling: 04.06.2020 Location of Sampling: Suna river Downstream Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.81	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	98	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	210	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	20	30
6.	COD	mg/l	IS:3025 - Part-58	104	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	32	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	24	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	42	-
12.	Colour	Hazen Units	IS:3025 -Part-4	10	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.34	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.42	2.0

Interpretation of results: Nil
 Deviation from test method: Nil

Authorized Signatory
 (Venugopal Badri)
 Quality Manager

Note: This report is subject to the terms and conditions mentioned overleaf.
 Complaints Register is available at Laboratory.

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-03205	
Sample Description: Surface Water Sample	Lab Code No : 200729506	
	Issue Date : 19.06.2020	
	Your Ref : Letter Dated 08.06.2020	
	Date of Receipt : 08.06.2020	
	Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Date of Registration
Packing : Plastic Bottles& Pre-Sterilized Bottle	Date of commencement of testing	09.06.2020
Test Required : As given below	Date of completion of testing	18.06.2020
	Sample condition at receipt	Found ok
	Sample tested as received	
Sampling Details		
Date of Sampling: 04.06.2020	Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Suna river Downstream	General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	43.5	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	10	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	300	

Interpretation of results: Nil

Deviation from test method: Nil

Authorized Signatory
(Venugopal Badri)
Quality Manager

... End of the Report...

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-03206 Lab Code No : 200729406 Issue Date : 19.06.2020 Your Ref : Letter Dated 08.06.2020 Date of Receipt : 08.06.2020
Sample Description: Surface Water Sample	Date of Registration 08.06.2020 Date of commencement of testing 09.06.2020 Date of completion of testing 18.06.2020 Sample condition at receipt Found ok Sample tested as received
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below	
Date of Sampling: 04.06.2020 Location of Sampling: Mahadev Nala Upstream	
Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	
Page No: 1 of 2	

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.65	5.5 - 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	82	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	196	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	12	30
6.	COD	mg/l	IS:3025 - Part-58	68	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	32	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	19	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	30	-
12.	Colour	Hazen Units	IS:3025 -Part-4	5	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.29	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.34	2.0

Interpretation of results: Nil
Deviation from test method: Nil

Authorized Signatory
(Venugopal Badri)
Quality Manager

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-03206 Lab Code No : 200729406 Issue Date : 19.06.2020 Your Ref : Letter Dated 08.06.2020 Date of Receipt : 08.06.2020	
Sample Description: Surface Water Sample		Date of Registration : 08.06.2020 Date of commencement of testing : 09.06.2020 Date of completion of testing : 18.06.2020 Sample condition at receipt : Found ok Sample tested as received	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below		Sampling Details Date of Sampling: 04.06.2020 Location of Sampling: Mahadev Nala Upstream Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	42.6	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	11	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	240	-

Interpretation of results: Nil
 Deviation from test method: Nil

Authorized Signatory
 (Venugopal Badri)
 Quality Manager

... End of the Report...

Note: This report is subject to the terms and conditions mentioned overleaf.
 *Complaints Register is available at Laboratory.

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-03207 Lab Code No : 200729306 Issue Date : 19.06.2020 Your Ref : Letter Dated 08.06.2020 Date of Receipt : 08.06.2020
Sample Description: Surface Water Sample	Date of Registration 08.06.2020 Date of commencement of testing 09.06.2020 Date of completion of testing 18.06.2020 Sample condition at receipt Found ok Sample tested as received
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below	
Date of Sampling: 04.06.2020 Location of Sampling: Mahadev Nala Downstream	
Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	
Page No: 1 of 2	

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.79	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	94	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	208	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	17	30
6.	COD	mg/l	IS:3025 - Part-58	84	250
7.	Chloride as Cl ₁ ,	mg/l	IS:3025 -Part-32	46	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	25	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	38	-
12.	Colour	Hazen Units	IS:3025 -Part-4	10	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.34	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.38	2.0

Interpretation of results: Nil

Deviation from test method: Nil


Authorized Signatory
(Venugopal Badri)
Quality Manager

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Recognized by MoEF & CC, Gol: Valid upto August, 2022

TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-03207	
		Lab Code No : 200729306	
		Issue Date : 19.06.2020	
		Your Ref : Letter Dated 08.06.2020	
Sample Description: Surface Water Sample		Date of Receipt : 08.06.2020	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below	Date of Registration		08.06.2020
	Date of commencement of testing		09.06.2020
	Date of completion of testing		18.06.2020
	Sample condition at receipt		Found ok
	Sample tested as received		
Date of Sampling: 04.06.2020 Location of Sampling: Mahadev Nala Downstream		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	45.1	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	Nil	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	280	-

Interpretation of results: Nil

Deviation from test method: Nil

Authorized Signatory
(Venugopal Badri)
Quality Manager

... End of the Report...

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-03208 Lab Code No : 200729206 Issue Date : 19.06.2020 Your Ref : Letter Dated 08.06.2020 Date of Receipt : 08.06.2020	
Sample Description: Surface Water Sample		Date of Registration : 08.06.2020 Date of commencement of testing : 09.06.2020 Date of completion of testing : 18.06.2020 Sample condition at receipt : Found ok Sample tested as received	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below		Sampling Details Date of Sampling: 04.06.2020 Location of Sampling: Baitarani River Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.62	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	68	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	196	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	13	30
6.	COD	mg/l	IS:3025 - Part-58	72	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	28	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	17	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	26	-
12.	Colour	Hazen Units	IS:3025 -Part-4	5	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.24	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.28	2.0

Interpretation of results: Nil

Deviation from test method: Nil


 Authorized Signatory
 (Venugopal Badri)
 Quality Manager

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-03208	
Sample Description: Surface Water Sample Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below	Lab Code No : 200729206	
	Issue Date : 19.06.2020	
	Your Ref : Letter Dated 08.06.2020	
	Date of Receipt : 08.06.2020	
	Date of Registration	08.06.2020
	Date of commencement of testing	09.06.2020
	Date of completion of testing	18.06.2020
	Sample condition at receipt	Found ok
	Sample tested as received	
Sampling Details		
Date of Sampling: 04.06.2020	Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Baitarani River	General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	42.3	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	16	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	350	-

Interpretation of results: Nil

Deviation from test method: Nil

Authorized Signatory
(Venugopal Badri)
Quality Manager

... End of the Report...

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MURGABEDA MINES

SURFACE WATER QUALITY REPORT

JULY-2020



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-04199 Lab Code No : 200630107 Issue Date : 22.07.2020 Your Ref : Letter Dated 11.07.2020 Date of Receipt : 11.07.2020	
Sample Description: Surface Water Sample		Date of Registration : 11.07.2020 Date of commencement of testing : 13.07.2020 Date of completion of testing : 21.07.2020 Sample condition at receipt : Found ok Sample tested as received	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles & Pre-Sterilized Bottle Test Required : As given below		Sampling Details Date of Sampling: 06.07.2020 Location of Sampling: Suna river Upstream Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.68	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	70	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	164	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	12	30
6.	COD	mg/l	IS:3025 - Part-58	80	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	21	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	14	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	22	-
12.	Colour	Hazen Units	IS:3025 -Part-4	5	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.29	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.32	2.0

Interpretation of results: Nil, Deviation from test method: Nil



Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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CIN No. : U74210TG1999PTC032358



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-04199 Lab Code No : 200630107 Issue Date : 22.07.2020 Your Ref : Letter Dated 11.07.2020 Date of Receipt : 11.07.2020
Sample Description: Surface Water Sample	Date of Registration : 11.07.2020 Date of commencement of testing : 13.07.2020 Date of completion of testing : 21.07.2020 Sample condition at receipt : Found ok Sample tested as received
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles & Pre-Sterilized Bottle Test Required : As given below	
Sampling Details Date of Sampling: 06.07.2020 Location of Sampling: Suna river Upstream Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	41.3	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	16	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	300	-

Interpretation of results: Nil, Deviation from test method: Nil

... End of the Report...



Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-04200 Lab Code No : 200630007 Issue Date : 22.07.2020 Your Ref : Letter Dated 11.07.2020 Date of Receipt : 11.07.2020	
Sample Description: Surface Water Sample		Date of Registration : 11.07.2020 Date of commencement of testing : 13.07.2020 Date of completion of testing : 21.07.2020 Sample condition at receipt : Found ok Sample tested as received	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles & Pre-Sterilized Bottle Test Required : As given below		Sampling Details Date of Sampling: 06.07.2020 Location of Sampling: Suna river Donstream Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.89	5.5 - 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	92	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	206	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	16	30
6.	COD	mg/l	IS:3025 - Part-58	96	250
7.	Chloride as Cl ₁ ,	mg/l	IS:3025 -Part-32	30	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	21	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	36	-
12.	Colour	Hazen Units	IS:3025 -Part-4	10	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.31	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.37	2.0

Interpretation of results: Nil, Deviation from test method: Nil



Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-04200 Lab Code No : 200630007 Issue Date : 22.07.2020 Your Ref : Letter Dated 11.07.2020 Date of Receipt : 11.07.2020
Sample Description: Surface Water Sample	Date of Registration : 11.07.2020 Date of commencement of testing : 13.07.2020 Date of completion of testing : 21.07.2020 Sample condition at receipt : Found ok Sample tested as received
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles & Pre-Sterilized Bottle Test Required : As given below	
Sampling Details Date of Sampling: 06.07.2020 Location of Sampling: Suna river Donstream Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	44.2	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	16	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	350	-

Interpretation of results: Nil, Deviation from test method: Nil

... End of the Report...



Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-04201 Lab Code No : 200629907 Issue Date : 22.07.2020 Your Ref : Letter Dated 11.07.2020 Date of Receipt : 11.07.2020	
Sample Description: Surface Water Sample		Date of Registration : 11.07.2020 Date of commencement of testing : 13.07.2020 Date of completion of testing : 21.07.2020 Sample condition at receipt : Found ok Sample tested as received	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles & Pre-Sterilized Bottle Test Required : As given below		Sampling Details Date of Sampling: 06.07.2020 Location of Sampling: Mahadev Nala Upstream Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.64	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	72	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	184	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	11	30
6.	COD	mg/l	IS:3025 - Part-58	64	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	25	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	16	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	24	-
12.	Colour	Hazen Units	IS:3025 -Part-4	5	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.27	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.32	2.0

Interpretation of results: Nil, Deviation from test method: Nil



Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-04201 Lab Code No : 200629907 Issue Date : 22.07.2020 Your Ref : Letter Dated 11.07.2020 Date of Receipt : 11.07.2020
Sample Description: Surface Water Sample	Date of Registration 11.07.2020 Date of commencement of testing 13.07.2020 Date of completion of testing 21.07.2020 Sample condition at receipt Found ok Sample tested as received
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles & Pre-Sterilized Bottle Test Required : As given below	
Sampling Details Date of Sampling: 06.07.2020 Location of Sampling: Mahadev Nala Upstream Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	41.4	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	16	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	280	-

Interpretation of results: Nil, Deviation from test method: Nil

... End of the Report...



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabada Iron Ore Mines.		Test Report No. : BSET/2020/TR-04202 Lab Code No : 200629807 Issue Date : 22.07.2020 Your Ref : Letter Dated 11.07.2020 Date of Receipt : 11.07.2020	
Sample Description: Surface Water Sample		Date of Registration : 11.07.2020 Date of commencement of testing : 13.07.2020 Date of completion of testing : 21.07.2020 Sample condition at receipt : Found ok Sample tested as received	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology)			
Packing : Plastic Bottles & Pre-Sterilized Bottle			
Test Required : As given below			
Sampling Details Date of Sampling: 06.07.2020 Location of Sampling: Mahadev Nala Downstream Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok			

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.71	5.5 - 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	90	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	202	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	15	30
6.	COD	mg/l	IS:3025 - Part-58	76	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	35	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	22	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	30	-
12.	Colour	Hazen Units	IS:3025 -Part-4	10	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.29	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.36	2.0

Interpretation of results: Nil, Deviation from test method: Nil

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/TR-04202 Lab Code No : 200629807 Issue Date : 22.07.2020 Your Ref : Letter Dated 11.07.2020 Date of Receipt : 11.07.2020	
Sample Description: Surface Water Sample		Date of Registration : 11.07.2020 Date of commencement of testing : 13.07.2020 Date of completion of testing : 21.07.2020 Sample condition at receipt : Found ok Sample tested as received	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles & Pre-Sterilized Bottle Test Required : As given below		Sampling Details Date of Sampling: 06.07.2020 Location of Sampling: Mahadev Nala Downstream Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	44.5	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	6	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	350	-

Interpretation of results: Nil, Deviation from test method: Nil

... End of the Report...



Authorized Signatory
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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-04203	
Sample Description: Surface Water Sample Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles & Pre-Sterilized Bottle Test Required : As given below	Lab Code No : 200629707	
	Issue Date : 22.07.2020	
	Your Ref : Letter Dated 11.07.2020	
	Date of Receipt : 11.07.2020	
	Date of Registration : 11.07.2020	
	Date of commencement of testing : 13.07.2020	
	Date of completion of testing : 21.07.2020	
	Sample condition at receipt : Found ok	
	Sample tested as received	
Sampling Details		
Date of Sampling: 06.07.2020	Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Baitarani River	General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.73	5.5 - 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	82	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	214	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	15	30
6.	COD	mg/l	IS:3025 - Part-58	80	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	25	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	19	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	28	-
12.	Colour	Hazen Units	IS:3025 -Part-4	5	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.25	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.31	2.0

Interpretation of results: Nil, Deviation from test method: Nil


Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/TR-04203 Lab Code No : 200629707 Issue Date : 22.07.2020 Your Ref : Letter Dated 11.07.2020 Date of Receipt : 11.07.2020
Sample Description: Surface Water Sample	Date of Registration : 11.07.2020 Date of commencement of testing : 13.07.2020 Date of completion of testing : 21.07.2020 Sample condition at receipt : Found ok Sample tested as received
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles & Pre-Sterilized Bottle Test Required : As given below	
Date of Sampling: 06.07.2020 Location of Sampling: Baitarani River	
Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	41.8	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	32	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	280	-

Interpretation of results: Nil, Deviation from test method: Nil


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MURGABEDA MINES

SURFACE WATER QUALITY REPORT

AUGUST-2020



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/WS-04762 Lab Code No : 200573808 Issue Date : 20.08.2020 Your Ref : Letter Dated 10.08.2020 Date of Receipt : 10.08.2020	
Sample Description: Surface Water Sample		Date of Registration : 10.08.2020 Date of commencement of testing : 11.08.2020 Date of completion of testing : 19.08.2020 Sample condition at receipt : Found ok Sample tested as received	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology)			
Packing : Plastic Bottles & Pre-Sterilized Bottle			
Test Required : As given below			
Date of Sampling: 06.08.2020 Location of Sampling: Suna river Upstream		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.65	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	68	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	162	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	14	30
6.	COD	mg/l	IS:3025 - Part-58	88	250
7.	Chloride as Cl ₁ ,	mg/l	IS:3025 -Part-32	17	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	12	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	20	-
12.	Colour	Hazen Units	IS:3025 -Part-4	5	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.26	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.29	2.0

Interpretation of results: Nil, Deviation from test method: Nil



Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/WS-04762		
Sample Description: Surface Water Sample	Lab Code No	: 200573808	
	Issue Date	: 20.08.2020	
	Your Ref	: Letter Dated 10.08.2020	
	Date of Receipt	: 10.08.2020	
	Quantity	: 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	
Packing	: Plastic Bottles& Pre-Sterilized Bottle	Date of Registration	10.08.2020
Test Required	: As given below	Date of commencement of testing	11.08.2020
		Date of completion of testing	19.08.2020
		Sample condition at receipt	Found ok
		Sample tested as received	
Date of Sampling: 06.08.2020 Location of Sampling: Suna river Upstream		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	40.4	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	27	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	220	-

Interpretation of results: Nil, Deviation from test method: Nil

... End of the Report...

Authorized Signatory
(C.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/WS-04763 Lab Code No : 200573708 Issue Date : 20.08.2020 Your Ref : Letter Dated 10.08.2020 Date of Receipt : 10.08.2020	
Sample Description: Surface Water Sample		Date of Registration : 10.08.2020 Date of commencement of testing : 11.08.2020 Date of completion of testing : 19.08.2020 Sample condition at receipt : Found ok Sample tested as received	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below		
Date of Sampling: 06.08.2020 Location of Sampling: Suna river Donstream		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.73	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	84	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	198	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	20	30
6.	COD	mg/l	IS:3025 - Part-58	112	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	25	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	19	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	34	-
12.	Colour	Hazen Units	IS:3025 -Part-4	10	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.28	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.32	2.0

Interpretation of results: Nil, Deviation from test method: Nil

Authorized Signatory
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Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/WS-04763		
Sample Description: Surface Water Sample	Lab Code No	: 200573708	
	Issue Date	: 20.08.2020	
	Your Ref	: Letter Dated 10.08.2020	
	Date of Receipt	: 10.08.2020	
	Quantity	: 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	
Packing	: Plastic Bottles& Pre-Sterilized Bottle	Date of Registration	10.08.2020
Test Required	: As given below	Date of commencement of testing	11.08.2020
		Date of completion of testing	19.08.2020
		Sample condition at receipt	Found ok
		Sample tested as received	
Date of Sampling: 06.08.2020 Location of Sampling: Suna river Donstream		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	43.9	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	32	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	280	-

Interpretation of results: Nil, Deviation from test method: Nil

... End of the Report...

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

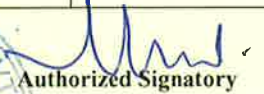
Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/WS-04764 Lab Code No : 200573608 Issue Date : 20.08.2020 Your Ref : Letter Dated 10.08.2020 Date of Receipt : 10.08.2020
Sample Description: Surface Water Sample	Date of Registration : 10.08.2020 Date of commencement of testing : 11.08.2020 Date of completion of testing : 19.08.2020 Sample condition at receipt : Found ok Sample tested as received
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles & Pre-Sterilized Bottle Test Required : As given below	
Date of Sampling: 06.08.2020 Location of Sampling: Mahadev Nala Upstream	Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.59	5.5 - 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	86	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	172	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	10	30
6.	COD	mg/l	IS:3025 - Part-58	60	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	21	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	14	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	26	-
12.	Colour	Hazen Units	IS:3025 -Part-4	5	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.28	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.34	2.0

Interpretation of results: Nil, Deviation from test method: Nil


Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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BSET/TR/FORM -56


Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/WS-04764 Lab Code No : 200573608 Issue Date : 20.08.2020 Your Ref : Letter Dated 10.08.2020 Date of Receipt : 10.08.2020
Sample Description: Surface Water Sample	Date of Registration 10.08.2020 Date of commencement of testing 11.08.2020 Date of completion of testing 19.08.2020 Sample condition at receipt Found ok Sample tested as received
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles & Pre-Sterilized Bottle Test Required : As given below	
Date of Sampling: 06.08.2020 Location of Sampling: Mahadev Nala Upstream	
Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	
Page No: 2 of 2	

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	41.1	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	21	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	220	-

Interpretation of results: Nil, Deviation from test method: Nil

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(G. Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/WS-04765 Lab Code No : 200573508 Issue Date : 20.08.2020 Your Ref : Letter Dated 10.08.2020 Date of Receipt : 10.08.2020
Sample Description: Surface Water Sample	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology)	Date of Registration 10.08.2020 Date of commencement of testing 11.08.2020 Date of completion of testing 19.08.2020 Sample condition at receipt Found ok Sample tested as received
Packing : Plastic Bottles & Pre-Sterilized Bottle Test Required : As given below	
Date of Sampling: 06.08.2020 Location of Sampling: Mahadev Nala Downstream	Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.67	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	98	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	204	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	16	30
6.	COD	mg/l	IS:3025 - Part-58	112	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	30	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	19	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	32	-
12.	Colour	Hazen Units	IS:3025 -Part-4	10	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.31	3
15.	Fluoride as F ⁻	mg/l	4500-F/D, APHA 23 rd Edition 2017	0.34	2.0

Interpretation of results: Nil, Deviation from test method: Nil



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Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/WS-04765 Lab Code No : 200573508 Issue Date : 20.08.2020 Your Ref : Letter Dated 10.08.2020 Date of Receipt : 10.08.2020
Sample Description: Surface Water Sample	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology)	Date of Registration 10.08.2020 Date of commencement of testing 11.08.2020 Date of completion of testing 19.08.2020 Sample condition at receipt Found ok Sample tested as received
Packing : Plastic Bottles & Pre-Sterilized Bottle Test Required : As given below	
Date of Sampling: 06.08.2020 Location of Sampling: Mahadev Nala Downstream	Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	44.3	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	16	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	280	-

Interpretation of results: Nil, Deviation from test method: Nil



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/WS-04766		
Sample Description: Surface Water Sample	Lab Code No	: 200573408	
	Issue Date	: 20.08.2020	
	Your Ref	: Letter Dated 10.08.2020	
	Date of Receipt	: 10.08.2020	
	Quantity	: 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology)	
Packing	: Plastic Bottles& Pre-Sterilized Bottle	Date of Registration	10.08.2020
Test Required	: As given below	Date of commencement of testing	11.08.2020
		Date of completion of testing	19.08.2020
		Sample condition at receipt	Found ok
		Sample tested as received	
Date of Sampling: 06.08.2020 Location of Sampling: Baitarani River		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.64	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	74	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	238	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	16	30
6.	COD	mg/l	IS:3025 - Part-58	88	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	21	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	15	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	20	-
12.	Colour	Hazen Units	IS:3025 -Part-4	5	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.26	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.29	2.0

Interpretation of results: Nil, Deviation from test method: Nil



Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/WS-04766		
Sample Description: Surface Water Sample	Lab Code No	: 200573408	
	Issue Date	: 20.08.2020	
	Your Ref	: Letter Dated 10.08.2020	
	Date of Receipt	: 10.08.2020	
	Quantity	: 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	
Packing	: Plastic Bottles& Pre-Sterilized Bottle	Date of Registration	10.08.2020
Test Required	: As given below	Date of commencement of testing	11.08.2020
		Date of completion of testing	19.08.2020
		Sample condition at receipt	Found ok
		Sample tested as received	
Date of Sampling: 06.08.2020 Location of Sampling: Baitarani River		Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	42.6	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	53	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	350	-

Interpretation of results: Nil, Deviation from test method: Nil

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/WS-04767 Lab Code No : 200573308 Issue Date : 20.08.2020 Your Ref : Letter Dated 10.08.2020 Date of Receipt : 10.08.2020
Sample Description: Surface runoff Water Sample	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Date of Registration 10.08.2020 Date of commencement of testing 11.08.2020 Date of completion of testing 19.08.2020 Sample condition at receipt Found ok Sample tested as received
Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below	
Sampling Details Date of Sampling: 06.08.2020 Location of Sampling: Inside ML Area (Surface Run off Water) Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	
Page No: 1 of 2	

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.72	5.5 - 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	24	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	128	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	3	30
6.	COD	mg/l	IS:3025 - Part-58	20	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	11	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	6.8	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	10	-
12.	Colour	Hazen Units	IS:3025 -Part-4	5	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.15	3
15.	Fluoride as F ⁻	mg/l	4500-F/D, APHA 23 rd Edition 2017	0.17	2.0

Interpretation of results: Nil, Deviation from test method: Nil



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Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/WS-04767		
Sample Description: Surface runoff Water Sample	Lab Code No	: 200573308	
	Issue Date	: 20.08.2020	
	Your Ref	: Letter Dated 10.08.2020	
	Date of Receipt	: 10.08.2020	
	Quantity	: 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	
Packing	: Plastic Bottles& Pre-Sterilized Bottle	Date of Registration	10.08.2020
Test Required	: As given below	Date of commencement of testing	11.08.2020
		Date of completion of testing	19.08.2020
		Sample condition at receipt	Found ok
		Sample tested as received	
Sampling Details			
Date of Sampling: 06.08.2020		Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Inside ML Area (Surface Run off Water)		General Environment conditions: Ok	
Page No: 2 of 2			

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	43.5	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	21	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	70	-

Interpretation of results: Nil, Deviation from test method: Nil



Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

... End of the Report...

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MURGABEDA MINES

SURFACE WATER QUALITY REPORT

SEPTEMBER-2020



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/WS-05134		
Sample Description: Surface Water Sample	Lab Code No	: 200536609	
	Issue Date	: 19.09.2020	
	Your Ref	: Letter Dated 07.09.2020	
	Date of Receipt	: 07.09.2020	
	Quantity	: 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	
Packing	: Plastic Bottles& Pre-Sterilized Bottle	Date of Registration	07.09.2020
Test Required : As given below		Date of commencement of testing	08.09.2020
		Date of completion of testing	18.09.2020
		Sample condition at receipt	Found ok
		Sample tested as received	
Sampling Details			
Date of Sampling: 03.09.2020		Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Suna river Upstream		General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.69	5.5 - 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	72	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	170	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	12	30
6.	COD	mg/l	IS:3025 - Part-58	72	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	19	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	15	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	23	-
12.	Colour	Hazen Units	IS:3025 -Part-4	5	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.24	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.31	2.0

Interpretation of results: Nil, Deviation from test method: Nil

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/WS-05134	
Sample Description: Surface Water Sample	Lab Code No : 200536609	
	Issue Date : 19.09.2020	
	Your Ref : Letter Dated 07.09.2020	
	Date of Receipt : 07.09.2020	
	Date of Registration	07.09.2020
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample (Metals) 1 No x 250 ml Sample (Microbiology)	Date of commencement of testing	08.09.2020
Packing : Plastic Bottles & Pre-Sterilized Bottle	Date of completion of testing	18.09.2020
Test Required : As given below	Sample condition at receipt	Found ok
Sample tested as received		
Sampling Details		
Date of Sampling: 03.09.2020	Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Suna river Upstream	General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	41.1	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	21	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	240	-

Interpretation of results: Nil, Deviation from test method: Nil

... End of the Report...

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/WS-05135 Lab Code No : 200536509 Issue Date : 19.09.2020 Your Ref : Letter Dated 07.09.2020 Date of Receipt : 07.09.2020	
Sample Description: Surface Water Sample		Date of Registration : 07.09.2020 Date of commencement of testing : 08.09.2020 Date of completion of testing : 18.09.2020 Sample condition at receipt : Found ok Sample tested as received	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)			
Packing : Plastic Bottles& Pre-Sterilized Bottle			
Test Required : As given below			
Sampling Details Date of Sampling: 03.09.2020 Location of Sampling: Suna river Downstream Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok			

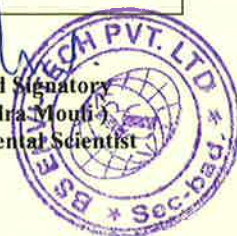
Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.78	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	89	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	205	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	18	30
6.	COD	mg/l	IS:3025 - Part-58	108	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	24	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	22	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	37	-
12.	Colour	Hazen Units	IS:3025 -Part-4	10	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.26	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.30	2.0

Interpretation of results: Nil, Deviation from test method: Nil

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/WS-05135 Lab Code No : 200536509 Issue Date : 19.09.2020 Your Ref : Letter Dated 07.09.2020 Date of Receipt : 07.09.2020	
Sample Description: Surface Water Sample			
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below	Date of Registration		07.09.2020
	Date of commencement of testing		08.09.2020
	Date of completion of testing		18.09.2020
	Sample condition at receipt		Found ok
	Sample tested as received		
Date of Sampling: 03.09.2020 Location of Sampling: Suna river Downstream		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	44.3	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	27	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	300	-

Interpretation of results: Nil, Deviation from test method: Nil

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/WS-05136	
Sample Description: Surface Water Sample	Lab Code No : 200536409	
	Issue Date : 19.09.2020	
	Your Ref : Letter Dated 07.09.2020	
	Date of Receipt : 07.09.2020	
	Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Date of Registration
Packing : Plastic Bottles& Pre-Sterilized Bottle	Date of commencement of testing	08.09.2020
Test Required : As given below	Date of completion of testing	18.09.2020
	Sample condition at receipt	Found ok
	Sample tested as received	
Sampling Details		
Date of Sampling: 03.09.2020	Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Mahadev Nala Upstream	General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.62	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	90	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	185	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	8	30
6.	COD	mg/l	IS:3025 - Part-58	58	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	25	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	16	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	29	-
12.	Colour	Hazen Units	IS:3025 -Part-4	5	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.29	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.36	2.0

Interpretation of results: Nil, Deviation from test method: Nil

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/WS-05136	
Sample Description: Surface Water Sample	Lab Code No :	200536409
	Issue Date :	19.09.2020
	Your Ref :	Letter Dated 07.09.2020
	Date of Receipt :	07.09.2020
	Quantity :	1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)
Packing :	Plastic Bottles& Pre-Sterilized Bottle	
Test Required :	As given below	
Date of Registration : 07.09.2020		
Date of commencement of testing : 08.09.2020		
Date of completion of testing : 18.09.2020		
Sample condition at receipt : Found ok		
Sample tested as received		
Sampling Details		
Date of Sampling: 03.09.2020		
Location of Sampling: Mahadev Nala Upstream		
Sampling Method/Procedure: IS 3025 Part 1		
General Environment conditions: Ok		

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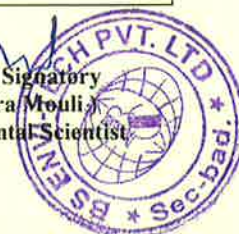
TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	42.5	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	27	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	170	-

Interpretation of results: Nil, Deviation from test method: Nil

... End of the Report...

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist



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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/WS-05137	
Sample Description: Surface Water Sample	Lab Code No : 200536309	
	Issue Date : 19.09.2020	
	Your Ref : Letter Dated 07.09.2020	
	Date of Receipt : 07.09.2020	
	Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Date of Registration
Packing : Plastic Bottles& Pre-Sterilized Bottle	Date of commencement of testing	08.09.2020
Test Required : As given below	Date of completion of testing	18.09.2020
	Sample condition at receipt	Found ok
	Sample tested as received	
Sampling Details		
Date of Sampling: 03.09.2020	Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Mahadev Nala Downstream	General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.74	5.5 - 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	105	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	212	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	14	30
6.	COD	mg/l	IS:3025 - Part-58	107	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	28	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	21	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	35	-
12.	Colour	Hazen Units	IS:3025 -Part-4	10	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.33	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.38	2.0

Interpretation of results: Nil, Deviation from test method: Nil

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/WS-05137 Lab Code No : 200536309 Issue Date : 19.09.2020 Your Ref : Letter Dated 07.09.2020 Date of Receipt : 07.09.2020	
Sample Description: Surface Water Sample			
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Date of Registration	07.09.2020	
Packing : Plastic Bottles& Pre-Sterilized Bottle	Date of commencement of testing	08.09.2020	
Test Required : As given below	Date of completion of testing	18.09.2020	
		Sample condition at receipt	Found ok
		Sample tested as received	
Date of Sampling: 03.09.2020 Location of Sampling: Mahadev Nala Downstream		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

Page No: 2 of 2

TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	45.1	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	27	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	220	-

Interpretation of results: Nil, Deviation from test method: Nil

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.	Test Report No. : BSET/2020/WS-05138	
Sample Description: Surface Water Sample	Lab Code No : 200536209	
	Issue Date : 19.09.2020	
	Your Ref : Letter Dated 07.09.2020	
	Date of Receipt : 07.09.2020	
	Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology)	Date of Registration
Packing : Plastic Bottles& Pre-Sterilized Bottle	Date of commencement of testing	08.09.2020
Test Required : As given below	Date of completion of testing	18.09.2020
	Sample condition at receipt	Found ok
	Sample tested as received	
Sampling Details		
Date of Sampling: 03.09.2020	Sampling Method/Procedure: IS 3025 Part 1	
Location of Sampling: Baitarani River	General Environment conditions: Ok	

Page No: 1 of 2

TEST RESULTS

S. No	Test Parameters	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
1.	pH	---	IS:3025- Part-11	6.69	5.5 – 9.0
2.	Oil & Grease	mg/l	IS:3025- Part-39	< 1	10
3.	Total Suspended Solids	mg/l	IS:3025- Part-17	70	100
4.	Total Dissolved Solids @ 105°C, mg/l	mg/l	IS:3025 - Part-16	235	2100
5.	BOD for 3days at 27°C,	mg/l	IS:3025 - Part-44	19	30
6.	COD	mg/l	IS:3025 - Part-58	92	250
7.	Chloride as Cl,	mg/l	IS:3025 -Part-32	25	1000
8.	Phosphate as P	mg/l	4500 P, E APHA 23 rd Edition 2017	< 0.10	5.0
9.	Sulphide as S ²⁻	mg/l	4500 S ²⁻ , D APHA 23 rd Edition 2017	< 0.10	2.0
10.	Sulphates as SO ₄	mg/l	4500-SO ₄ E, Turbidity Method, 23 rd Edition 2017	17	1000
11.	Total Volatile Suspended Solids (MLVSS)	mg/l	IS:3025- Part-18	18	-
12.	Colour	Hazen Units	IS:3025 -Part-4	5	Not to have Colour and Unpleasant Odour
13.	Odour	---	IS:3025 -Part-5	Agreeable	
14.	Iron as Fe	mg/l	3111 B of APHA 23 rd Edition 2017	0.24	3
15.	Fluoride as F ⁻	mg/l	4500-F D, APHA 23 rd Edition 2017	0.28	2.0

Interpretation of results: Nil, Deviation from test method: Nil

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

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TEST REPORT

BSET/TR/FORM -56

Name & Address of the Customer : M/s D.R.Patnaik Murgabeda Iron Ore Mines.		Test Report No. : BSET/2020/WS-05138	
		Lab Code No : 200536209	
		Issue Date : 19.09.2020	
		Your Ref : Letter Dated 07.09.2020	
Sample Description: Surface Water Sample		Date of Receipt : 07.09.2020	
Quantity : 1 No. x 2.0 Ltrs Sample 1 No. x 500 ml Sample(Metals) 1 No x 250 ml Sample (Microbiology) Packing : Plastic Bottles& Pre-Sterilized Bottle Test Required : As given below	Date of Registration		07.09.2020
	Date of commencement of testing		08.09.2020
	Date of completion of testing		18.09.2020
	Sample condition at receipt		Found ok
	Sample tested as received		
Date of Sampling: 03.09.2020 Location of Sampling: Baitarani River		Sampling Details Sampling Method/Procedure: IS 3025 Part 1 General Environment conditions: Ok	

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TEST RESULTS

S. No.	Test Parameter	Units	Test Method	Result	General Standards for discharge of Environment pollutants G.S.R 422(E)-1993
16.	Boron as B	mg/l	4500 B, B APHA 23 rd Edition 2017	< 0.10	2.0
17.	Percent Sodium	-	BSET/SOP/W & WW-26	41.8	-
18.	Residual Sodium Carbonate	mg/l	BSET/SOP/W & WW-25	48	-
19.	Copper as Cu	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
20.	Manganese as Mn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
21.	Selenium as Se	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.05
22.	Zinc as Zn	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	5.0
23.	Cadmium as Cd	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.003	2.0
24.	Lead as Pb	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.01	0.1
25.	Mercury as Hg	mg/l	3112 B of APHA 23 rd Edition 2017	< 0.001	0.01
26.	Nickel as Ni	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	3.0
27.	Total Arsenic as As	mg/l	3114 C of APHA 23 rd Edition 2017	< 0.01	0.2
28.	Total Chromium as Cr	mg/l	3111 B of APHA 23 rd Edition 2017	< 0.02	2.0
29.	Total Coliforms	CFU/100ml	APHA 23 rd Edition 2017	280	-

Interpretation of results: Nil, Deviation from test method: Nil

Authorized Signatory
(G.Chandra Mouli)
Environmental Scientist

... End of the Report...

Note: This report is subject to the terms and conditions mentioned overleaf.
Complaints Register is available at Laboratory.