

**HALF YEARLY COMPLIANCE REPORT  
ON  
ENVIRONMENTAL CLEARANCE CONDITIONS  
OF  
JINDAL CHROMITE MINES  
KALIPANI,JAJPUR(ODISHA)  
OF  
M/S JINDAL STAINLESS LIMITED  
FOR THE PERIOD  
OCTOBER 2021 TO MARCH 2022**

**F.NO.J-11015/12/2000-IA.II(M),DT.13.02.2001**

**F.NO.J-11015/369/2000-IA.II(M),DT.24.02.2016**

Letter no: JSL/KLPN/2022/76

Date: 27/05 /2022

To,

The Director (s)  
Ministry of Environment, Forest & Climate Change  
Eastern Regional Office  
A/3, Chandrasekharapur  
Bhubaneswar – 751023

Sub: Submission of half yearly compliance report in respect of the Environmental Clearance Conditions of Jindal Chromite Mines, M/s. Jindal Stainless Limited for the period from October - 2021 to March-2022.

Ref.1 : MOEF Letter No. J-11015/12/2000-IA.II(M),dated 13.02.2001

Ref.2 : MOEF Letter No. J-11015/369/2009-IA.II(M),dated 24.02.2016

Respected Sir,

We are enclosing herewith the half yearly compliance report on the status of the implementation of the conditions stipulated in environmental clearance of our Jindal Chromite Mines, Kaliapani, Jajpur (Odisha) of M/s. Jindal Stainless Limited.

Further our mines is under closure since 21.02.2018 by the direction of MoEF & CC, Newdelhi, vide letter no:J-11015/163/2016-IA.II(M) ,dt 21.02.2018.So there is no activities inside our lease hold area from the above mentioned date.

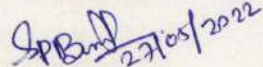
This is for your kind information and necessary records please.

This is for your kind perusal sir.

Thanking you

Yours faithfully,

For Jindal Stainless Limited

  
Sakti Prasad Biswal

Mines Manager **Mines Manager**  
**Jindal Chromite Mines**  
**M/s Jindal Stainless Limited**

Encl: Half Yearly Compliance Report for Oct'2021 to Mar'2022.

CC : 1.MoEF & CC , New Delhi

**Jindal Stainless Limited**  
**Jindal Chromite Mines**

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Registered Office : O.P. Jindal Marg, Hisar - 125 005. (Haryana) India.

Corporate Office : Jindal Centre, 12, Bhikaiji Cama Place, New Delhi - 110 066, India

T : +91 11 26188345 - 60, F : +91 11 26170691, 26161271, E : info@jindalsteel.com, Website : www.jindalstainless.com



**STATUS OF COMPLIANCE OF CONDITIONS STIPULATED BY MoEF IN ENVIRONMENTAL  
CLEARANCE VIDE J-11015/12/2000-IA.II (M) DATED 13.02.2001 OF  
JINDAL CHROMITE MINES OF M/S JINDAL STAINLESS LIMITED AS ON 31/03/2022.**

**COMPLIANCE PERIOD : 1<sup>ST</sup> OCTOBER 2021 TO 31<sup>ST</sup> MARCH 2022**

SL NO	SPECIAL CONDITIONS	COMPLIANCE STATUS
01	A comprehensive environmental impact assessment study should be carried out after getting scope of the study vetted by MOEF. Reports should be submitted to the ministry within 2 years.	Study report on comprehensive environmental impact assessment has already been submitted to MOEF, New Delhi vide our letter no. JSL/KLPN/05-06/196 dated 04.01.2006 with a copy to The Chief Conservator of Forests (Central), MOEF, Eastern Regional Office, Chandrasekharpur, Bhubaneswar. Again on 19.06.2019 another EIA-EMP report have been submitted to SEIAA, Bhubaneswar vide our letter no. JSL/KLPN/2019/71 dated 19.06.2019 as per TOR No – 1098/SEAC-180 dt 14.12.2018 issued for enhancement of production of chrome ore from 0.1 MTPA to 0.215 MTPA .
02	Run-off from the OB dumps should be analysed for cr+6 and in no case it's concentration is found higher than the permissible limit. The water should be treated using appropriate proven technology before discharge. Priority should be given for utilization of this treated water for plantation and dust suppression.	The total discharge of water is always being treated to keep the presence of hexavalent Chromium within the permissible limit by treating it in E.T.P. Regular testing of the discharge water is being carried out in our laboratory. The treated water is being utilized for plantation and dust suppression. However since the mining activities has been stopped w.e.f April 2013, there is no discharge of mines water to outside of lease area.
03	The nature of the deposit is such that finalisation of mining of deeper portion cannot be decided immediately. The present reclamation plan is therefore only conceptual. The proponent should submit a detailed reclamation plan within 5 years of the start of mining and get the same approved. In case there is change in scope of mining plan including possible underground mining the proponent should approach MOEF for fresh clearance.	A detailed reclamation plan shall be prepared and submitted for approval within 5 years of the start of mining operation. Any change in scope of mining plan including possible underground mining shall be intimated to MOEF and fresh clearance shall be sought.
04	A detailed greenbelt development plan indicating year wise plantation scheme, area to be covered (peripheral, roads, OB dumps, township) and type of nature of plant, species should be submitted to MOEF within 3 months.	A detailed green belt development plan indicating year wise plantation scheme has already been submitted to MOEF, New Delhi vide our letter No. JSL/JKRoad/2002/0069 dated 17.05.02, with a copy to MOEF, Eastern Regional Office, Chandrasekharpur, Bhubaneswar.
05	Top soil should be stacked properly with	We have collected 8420 m <sup>3</sup> of top soil. However we



	adequate measures at earmarked site. It should be used for reclamation and rehabilitation of mined out area.	have already used the total top soil for plantation purpose.
06	OB dumps should be stacked at earmarked dumpsite(s) only and should not be kept active for longer period .the overall slope of the dump(s) should not exceed 28°.	The overburden dumps are being stacked in earmarked area according to the mining plan. The overall slope is well within the permissible limit.
07	Drills should be operated with dust extractors or only wet drilling should be adopted.	Wet drilling is being adopted in our mines.
08	Controlled blasting should be carried out.	Controlled blasting is being done by muffling and by using delay detonators.
09	Check dam and siltation ponds of appropriate size should be constructed to arrest silts and sediments flows from OB and internal dumps. The water so collected should be utilized for watering mine area,roads,greenbelt etc.The drains should be regularly desilted and maintained properly.	Check dams and siltation ponds of appropriate sizes are constructed around the wastes dumps, mineral dumps (sub grade) & stack yards. The drains are being cleared regularly after monsoon season.
10	While mining operation is on, regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new peizometers.Monitoring should be done four times a year pre-monsoon (April/May), Monsoon (August), Post-Monsoon (November) and Winter (January).data thus collected should be sent at regular intervals to MOEF& Central ground water board.	Quarterly motoring of ground water level & quality are being carried by M/s. MITRA S.K Pvt.Ltd. an environmental consultant registered with Orissa State Pollution Control Board as a consultant for doing monitoring and analysis. Reports attached in <b>Annexure-I</b> .
11	A detailed mine plan should be submitted in MOEF 5 years in advance of approval.	The copy of Progressive Mining Closure Plan approved by Indian Bureau of Mines is being submitted for your kind reference and approval in <b>Annexure –II</b> .
12	The proponent should obtain permission from other concerned authorities if any.	We have obtained required permission from other statutory authorities for carrying out the mining activities.





### COMPLIANCE OF EC GENERAL CONDITIONS

SL NO	GENERAL CONDITIONS	COMPLIANCE STATUS
01	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment and forests.	The mining technology and scope of working is not changed.
02	No change in the calendar plan including excavation, quantum of chrome ore, waste/OB dumps should be made.	Production of acceptable / dispatchable grade of ore is within the permissible limit.
03	Four ambient air quality monitoring stations should be established in the core zone as well as buffer zone for SPM, RPM, SO <sub>2</sub> , NO <sub>x</sub> and CO monitoring. Location of the ambient air quality stations should be decided based on meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.	Ambient Air monitoring is being done establishing four stations both in core & buffer zone. The results of air quality parameter such as RPM, SPM, So <sub>2</sub> , NO <sub>x</sub> and Co of individual stations are enclosed in <b>Annexure-I</b> .
04	Data on ambient air quality should be regularly submitted to the Ministry including it's Regional office at Bhubaneswar and the State Pollution Control Board/Central Pollution Control Board once in six months.	Data on ambient Air quality is being submitted to the ministry including its regional office at Bhubaneswar and the State Pollution Control Board, Orissa once in six months.
05	Adequate measures for control of fugitive emissions should be taken during drilling and blasting operations, loading transportation of minerals etc.	Adequate precautions have been taken at all dust generating points for suppression of dust by water spraying with the help of two water tankers of 20KL & 12KL capacities, on the haul roads, stack yards ,loading & unloading point's dust.
06	Adequate measures should be taken for control of noise levels below 85 db in work environment.	Noise monitoring is being regularly done and found to be well within the permissible limit. The report of the above said is enclosed in the Annexure-I . To control the noise generation, periodical maintenance of all machineries is ensured. The workers engaged in blasting, Drilling operations and operators of HEMM are being provided with earmuff and earplugs.
07	Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on Safety and health aspects. Occupational health surveillance programme of the workers should be undertaken periodically	Nose masks have been provided to all personnel who are working in drills, dumpers and to HEMM operators and spot boys. Adequate training is being imparted to the persons, who are working in dust generating points by the Senior Mine

*S. B. D.*



	to observe any contractions due to exposure to dust and take corrective measures if needed	officials. Occupational health surveillance programme of the workers along with initial medical examination has been conducted for all departmental & contractor workers
08	The funds earmarked for Environmental Protection measures should be kept in separate account and not diverted for other purpose. Year wise expenditure should be reported to the Ministry of Environment and Forests.	The funds earmarked for environmental protection measures are not being diverted for any other purposes, the details of which are being sent to the regional office of MOEF, Chandrasekharpur, Bhubaneswar.
09	The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated environment safeguards. The project authorities should send one set of EIA/EMP report and mining plan to them and extent full cooperation to the officer(s) of the Regional Office by furnishing the detailed data/information/monitoring reports.	One set of EIA / EMP and Comprehensive EIA/EMP has already been sent to the regional office of the ministry located at Bhubaneswar.
10	The project authority should inform to the Regional Officers located at Bhubaneswar as well as to the Ministry of Environmental & Forests regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	This condition has already been complied with.
11	A copy of clearance letter will be marked to concerned panchayat /local NGO, if any ,from whom any suggestion/representation has been received while processing the proposal.	This condition has already been complied with
12	Orissa Pollution Control Board should display a copy of the clearance letter at the Regional Office ,District Industry Centre and Collector's office/Tahasildar's Office for 30 days.	This condition has already been complied with.
13	The project authorities should advertise at least in two local news paper weekly circulated around the project,one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the state pollution control board and may also be seen at web site of the Ministry of Environment & Forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a>	This condition has already been complied with.

*J.B.*



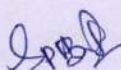
**STATUS OF COMPLIANCE OF ENVIRONMENT CLEARANCE CONDITIONS OF COBP-II**

REF F.No. J-11015/369/2009.IA-II (M) DATED 24.02.2016 OF  
JINDAL CHROMITE MINES OF M/S JINDAL STAINLESS LIMITED AS ON 31/03/2022

COMPLIANCE PERIOD : 1<sup>ST</sup> OCTOBER 2021 TO 31<sup>ST</sup> MARCH 2022

**SPECIFIC CONDITIONS:**

SL NO	CONDITION	COMPLIANCE STATUS
01	Continuous monitoring of the mine water should be done and reports furnished	Monitoring of Mine water is regularly being carried out and the report is being submitted to SPCB .Last monitoring report (Oct 2021 to Dec 2021) is attached as <b>Annexure-I.</b>
02	Continuous monitoring of all the drinking water sources for Cr(VI) of mine water should be done & reports furnished.	Monitoring of hexavalent chromium Cr(VI) in drinking water is regularly carried out and the report is being submitted to SPCB.
03	Morbidity pattern which is a sensitive indicator of ill health with regard to Cr related diseases need to be done.	Periodical health check up of all the employees is being carried out regularly & no sensitive indicator of ill health with regard to Cr related diseases found so far.
04	Mine water discharge and/or any waste water shall be properly treated in an ETP/s for the removal of hexavalent chromium and to meet the prescribed standards before reuse/discharge. The run-off from OB dumps and other surface run-off shall be analyzed for hexavalent chromium and in case it's concentration is found higher than the permissible limit, the waste water should be treated before discharge/reuse.	The total run-off generated is pumped back to quarry by the surface run-off management plan. However for treatment of mine discharge the effluent Treatment Plant of capacity 250m <sup>3</sup> has completed. The monitoring of quarry water is being regularly carried out and the report is being submitted to SPCB on regular basis.
05	The project proponent shall obtain consent to Establish and consent to Operate from the state pollution control board,Odisha and effectively implement all the conditions stipulated there in.	Consent to Establish from the state pollution control board, Odisha have been obtained on dt 30.11.2011 vide letter No.20031/Ind-II-Noc-5299 and consent to Operate from the state pollution control board, Odisha have been obtained on dt 20.03.2017 vide letter no-4258/IND-I-CON-2562 .Attached as <b>Annexure-III &amp; IV .</b>
06	Traffic density on the route of mineral transportation shall be regularly monitored and report shall be submitted along with the compliance report.	Monitoring of traffic density conducted by the project proponent. The report is attached as <b>Annexure- V.</b>
07	As part of ambient air quality monitoring during operational phase of the project, the air samples shall also be analysed for the mineralogical compositions and records maintained.	The ambient air quality monitoring is regularly carried out and the report is being submitted to SPCB on regular basis. The report is attached in <b>Annexure-I .</b>
08	Mineral handling plant shall be provided with adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.	Fixed water sprinklers are provided at loading/unloading points, transfer points and at hoppers for control of fugitive emission.





09	Effective safeguard measures such as conditioning of ore with water, regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around crushing and screening plant, loading and unloading point and transfer points. It should be ensured that the ambient air quality parameters conform to the norms prescribed by the central	Fixed water sprinklers are provided at loading/unloading points, transfer points and at hoppers for control of fugitive emission. The ambient air quality monitoring is regularly carried out and the report is being submitted to SPCB on regular basis.
10	The project authority shall implement suitable conservation measures to augment ground water resources in the area in consultation with the Regional Director, Central Ground water board.	We have identified a quarry of dimension 300 m Length x 200 m Width x 70 m Depth for storage of rain water as a conservation measure.
11	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and installing new Piezometers. The periodic monitoring [(at least four times in a year-pre-monsoon(April-May)Monsoon (August),post-monsoon(November) and winter (January),once in each season)] shall be carried out in consultation with the state Ground water Board/Central Ground water Authority and the data thus collected may be sent regularly to the Ministry of Environment ,forest & Climate change and it's Regional Office Bhubaneswar, the central Ground water Authority and the Regional Director, Central Ground water Board. If at any stage, it is observed that the ground water table is getting depleted due to the activity; necessary corrective measures shall be carried out.	Regular monitoring of ground water level and quality is being carried out in and around the mine lease on regular basis. 4 Nos of Piezometers have already been installed in consultation with CGWA.Reports are sent to the board in regular intervals. Ground Water level & quality report by NABL accredited lab is attached as <b>Annexure – VI</b> .
12	The project proponent shall regularly monitor the flow rate of natural water streams flowing adjacent to the mine lease and maintain the records.	The flow rate of natural water stream flowing adjacent to the mine lease i.e Damsala nallah 2 km away from lease is monitored and the reports are sent to SPCB on regular basis.
13	The reclaimed and rehabilitated area shall be afforested. Monitoring and management of rehabilitated areas shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment, forest & Climate change and it's Regional office located at Bhubaneswar on six monthly basis.	Being complied. Reclamation/Backfilling over an area of 8.24 ha is completed and 5000 nos. of plantation has already made over the area up to 2018-19.
14	Dimension of retaining wall at the toe of temporary overburden dumps and OB benches within the mine to check run-off and siltation based on the rain fall data.	A length of 1087 m toe wall (boulder masonry), having dimensions- 1m width x 1m height, has been constructed at the toe of over burden benches. 348 mtr boulder wall has been constructed at the toe of the temporary over burden dumps.
15	Plantation shall be raised in the specified including a 7.5m wide green belt in the safety zone around the mining lease, backfilled and reclaimed area ,around the higher benches of excavated void to be converted in to	Being complied. Reclamation over an area of 8.24 ha is completed and 5000 nos. of plantation has already made over the area.

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	water body, roads etc. By planting the native species in consultation with the local DFO /Agriculture Department. The density of the trees should be around 2500 plants per Ha.	In green belt area of 5.04 ha, we have planted 11000 Nos. Over the worked out benches we have planted 6000 Nos.
16	Effect safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of SPM & RPM such as haul road, loading point, and unloading point & transfer points. It shall be ensured that the ambient air quality parameters conform to the norms prescribed by the central pollution control board in this regard.	Fixed type water sprinklers are provided at loading/unloading points, transfer points and at hoppers for control of fugitive emission. Mobile water tankers are provided for haul roads for control of fugitive emission. Partly the haul roads are covered with fixed type water sprinkler.
17	Process water discharge and/or any water shall be properly treated to meet the prescribed standards before reuse/discharge. The run-off from temporary OB dumps and other surface runoff shall analyzed for iron and in case it's concentration is found higher than the permissible limit, the waste water should be treated before discharge/reuse.	At present there is no water discharge from the plant operation. Only the process water is recycled/ reused within the plant and tailing pond. The surface run-off generated is pumped back to the quarry-I through the surface run-off arrangement.
18	The decanted water from the beneficiation plant and slime/tailing pond shall be re-circulated within the mine and there shall be zero discharge from the mine.	Noted & agreed. There is no waste water from beneficiation plant, as total water will be re used/ re-circulated within the plant.
19	Regular monitoring of the flow rate of the springs and perennial nallahs shall be carried out and records maintained.	The flow rate of natural water stream flowing adjacent to the mine lease i.e Damsala nallah 2 km away from lease is monitored and the reports are sent to SPCB on quarterly basis.
20	Regular monitoring of water quality ,upstream and downstream of natural water bodies shall be carried out and record of monitoring data should be maintained and submitted to Ministry of Environment ,forest & Climate change, it's Regional Office, Bhubaneswar, Central Ground water Authority, Regional Director, Central Ground water Board, State pollution control board and central pollution control board.	Regular monitoring of water quality, upstream and downstream of natural water bodies are carried out and record of monitoring data is maintained and submitted .
21	Suitable rainwater harvesting measures on long term basis shall be planned and implemented in consultation with the Regional Director, Central Ground water Board.	We have constructed 300 m <sup>2</sup> roof top for rain water harvesting.
22	Vehicular emissions shall be kept under control and regularly monitored .Measures shall be taken for maintenance of vehicles during transportation of mineral from mine face to the beneficiation plant. The vehicles shall be covered with a tarpaulin and shall not be overloaded.	All the mineral transport vehicles are properly covered with tarpaulin during transportation. The vehicular emissions are found to be within limit .
23	Sewage water treatment plant shall be installed for the	05 no's of soak pits of dimension (6m




	colony.ETP shall also be provided for workshop and waste water generated during operation.	Length x 2m Width x 4m Depth) have constructed for work shop and colony purpose.
24	Digital processing of the entire lease area using remote sensing technique shall be carried out regularly once in three years for maintaining land use pattern and report submitted to ministry of environment, forest & climate change and it's regional Office, Bhubaneswar.	Digital processing of the entire lease area using remote sensing technique method have conducted in 2020-21 and reports have been annexed as <b>Annexure-VII</b> .
25	Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.	Being complied. All the employees are undergone IME and every year 20% of employees are being covered under medical examination as a part of statutory compliance and records are being maintained.
26	The project proponent shall take all precautionary measures during operation for conservation and protection of endangered fauna spotted in the study area. Action plan for conservation of flora and fauna shall be prepared and implemented in consultation with the state forest and wildlife Department. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. All the safeguard measures brought out in the Wildlife conservation pan so prepared specific to the project site shall be effectively implemented copy of action plan shall be submitted to the Ministry of environment, forest & climate change and it's regional office Bhubaneswar.	Wild life conservation plan has been prepared & approved from PCCF Wildlife, Government of Odisha detailing action plan for flora and fauna with the fund allocation vide letter No.7226/1 WL-SSP-34/2016,dt. 12.09.2016.
27	A FMCP along with details of corpus fund shall be submitted to the ministry of environment & forests 5 years in advance of final mine closure for approval.	Noted & agreed.
28	The project proponent shall undertake all the commitments made during the public hearing and efficiently address the concerns raised by the locals in the public hearing as well as during consideration of the project, while implementing the project.	Noted & agreed.

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## GENERAL CONDITIONS

SL NO	CONDITION	COMPLIANCE STATUS
01	No change in chrome Ore processing/Beneficiation technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.	Noted and agreed.
02	No change in the calendar plan including Processing/Beneficiation of mineral / Iron ore and waste should be made.	Noted and agreed.
03	At least four ambient air quality – monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10 micron i.e., PM10) and NOx monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets and frequency of monitoring should be undertaken in consultation with the State Pollution Control Board. The data so recorded should be regularly submitted to the Ministry including its Regional Office located at Bhubaneswar and the State Pollution Control Board /Central Pollution Control Board once in six months.	Being complied. Reports are submitted to the board in every quarter. Last monitoring report (Oct 2021 to Dec 2021)) is attached as <b>Annexure-I</b> .
04	Measures should be taken for control of noise levels below 85dBA in the work environment. Workers engaged in operations of HEMM, etc. Should be provided with ear plugs/muffs.	Engineering controls and maintenance schedules are followed to keep the noise levels below 85 dBA .All workers are provided with ear muffs those who are working in operations of HEMM.
05	There will be zero waste discharge from the plant.	Noted and agreed.
06	Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.	Persons those who are working in dusty areas are provided with nose mask and relevant training is imparted to them.
07	Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	Being complied. Every year 20% of employees are being covered under medical examination as a part of statutory compliance and records are being maintained.
08	A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the head of the organization.	Separate environmental management cell is operating for mines and is headed by dully qualified Senior Officials.
09	The Funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the ministry and its Regional Office located at Bhubaneswar.	Funds earmarked for environmental protection measures are spent only for environmental measures. Year wise expenditures are reported to ministry and it's Regional Office.
10	The project authorities should inform to the Regional Office located at Bhubaneswar regarding date of financial closures and final approval of the project by	Noted and agreed.





	the concerned authorities and the date of start of land development work.	
11	The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional office by furnishing the requisite date/information/monitoring reports.	Noted and agreed.
12	The project proponent shall submit six monthly reports on the status of results of monitored date(both in hard copies as well as by email) to the Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board. The proponent shall upload the status of compliance of the environmental clearance conditions, including results of monitored data on their website and shall upload the status of compliance of the environment al clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry Of Environment, forest & Climate Change, Bhubaneswar, the respective zonal officer of Central Pollution Control Board and the State Pollution Control Board.	Complied . Last EC six monthly Compliance submitted on 29.11.2021 vide letter no: JSL/KLPN/2021/164. Letter attached as <b>Annexure- VIII</b>
13	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, ZilaParisad / Municipal Corporation, Urban Local Body and the Local NGO,if any, from whom suggestions/representations, if any ,were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	Complied.
14	The State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Centre and the Collector's office/Tahasildars office for 30 days.	Complied.
15	The Environmental statement for each financial year ending 31 <sup>st</sup> March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (protection) Rules, 1986,as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to Climate Change, Bhubaneswar by e-mail.	Being Complied. Form-V for the year 2020 -21 submitted vide Letter No –JSL/KLPN/2021/62,Date : 21/05/2021. Letter attached as <b>Annexure- IX</b>
16	The project authorities should advertise at least two local newspapers of the District or State in which the project is located and widely circulated, one of which	Complied.





shall be in the vernacular language of the locality concerned, Within 7 days of the issue of the clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at website of the Ministry of Environment, Forest & Climate Change at <a href="http://envfor.nic.in">http://envfor.nic.in</a> and a copy of the same should be forwarded to the Regional Office of tis Ministry located at Bhubaneswar.	
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*J. B. D.*



## Ministry of Environment &amp; Forests : Regional Office

BHUBANESWAR

Monitoring Report

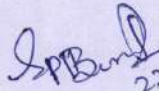
Part-I

**DATA - SHEET**

1	Project type: River-valley / Mining / industry / Thermal / Nuclear / Other (Specify)	:	Mining Industry
2	Name of the Project	:	Jindal Chromite Mines
3	Clearance letter (s) / OM No. & date (Mines)	:	No.-J-11015/12/2000-IA II(M) dated 13.02.2001
	Environment Clearance (COBP)	:	No.-J-11015/369/2009.IA.II(M) dated 24.02.2016
4	Locations:		
	a) Districts(s)	:	Jajpur
	b) State(s)	:	Odisha
	c) Latitudes/Longitudes	:	Survey of India Toposheet No 73 G/16.Latitude - N 21° 01' 04.39824 " to N 21° 02' 03.53184 " & Longitude - E 85° 45' 18.17352" to 86° 46' 31.69704" E
5	Address of correspondence:		
	a. Address of concerned project Chief Engineer(with pincode & telephone/telex/fax numbers)	:	Sakti Prasad Biswal, Mines Manager Jindal Chromite Mines Jindal Stainless limited. Po: Kaliapani, Dist: Jajpur (Orissa), Pin: 755047, Ph: 9777451265
	b. Address of Executive Project Engineer / Manager (with pincode & telephone/telex/fax numbers)	:	Sakti Prasad Biswal, Mines Manager Jindal Chromite Mines Jindal Stainless Limited. Po: Kaliapani, Dist: Jajpur (Orissa), Pin: 755047, Ph: 9777451265
6	Salient Features:		
	a. of the project	:	Fully mechanised mining of 0.1 MTA.
	b. of the environmental management plan	:	It is as per EIA/EMP management plans and environmental clearance conditions.
7	Break up of the Project areas:		
	a. Submergence area (forest & non-forest)	:	Nil
	b. Others	:	Forest- 89.00 ha.( Hal kisam forest)
8	Break up of the Project affected population, with enumeration of those losing houses / dwelling units only, agricultural land and land less labourers / artisans.	:	NA
	a. SC, ST / Adivasis	:	Nil
	b. Others	:	Nil



9	Financial Details:	:	
	a. Project cost as originally planned and subsequent revised estimated and the years of price reference.	:	Rs.19.00 Crores
	b. Allocations made for environmental management plans, with item-wise and years-wise break up.	:	Rs.11 Lakh
	c. Benefit cost ratio/internal rate of return and the year of assessment.	:	
	d. Wehter© includes the cost of environmental management as show in (b) above.	:	Yes
	e. Actual expenditure incurred on the project so far	:	
	f. Actual expenditure incurred on the environmental management plans so far.(From 01.10.2021 to 31.03.2022 )	:	Rs.4,43,112.00 (Four Lakh Forty Three Thousand One Hundred Twelve Only)
10	Forest land requirement :		
	a. the status of approval for a diversion of forest land for non-forestry use.	:	(i)Forest Clearance for 22.80 ha.(Hal Kisam Forest)obtained vide letter no. 8-68/2000-FC/2327(F) dated 05.07.2001 (ii)Forest Clearance for 66.20 ha.(Hal Kisam Forest)obtained vide letter no. 8-68/2000-FC(Pt.) dated 29.03.2022
	b. the status of compensatory afforestation.	:	Compensatory afforestation done for 22.80 ha. against Hal kisam forest. Financial outlay towards Compensatory afforestation for 65.645 ha. against Hal kisam forest deposited at the Office of District Forest Office for further plantation .
	c. the status of clear felling	:	
	d. comments on the viability & sustainability of compensatory afforestation programme in the light of actual field experience so far.	:	
11	The status of clear felling in non-forest areas (such as sub-mergency area of reservoir, approach road), if any with quantitative information.	:	NA
12	Status of construction:	:	NA
	a. Date of commencement (actual and/	:	NA
	b. Date of completion (actual and/	:	NA
13	Reasons so far the delay if the project is yet to start.	:	NA

  
 27/5/2022  
 Mines Manager  
 Jindal Chromite Mines  
 M/s Jindal Stainless Limited



## 194, KHARVELNAGAR, BHUBANESWAR - 751 001

## FORMAT FOR PROVIDING PARTICULARS ON GREEN BELT / PLANTATION UNDER F ( C ) ACT 1980 AND E ( P ) ACT 1986

1	a) Name of the Organisation	:	Jindal Chromite Mines			
	b) Env't/Forest clearance order No(Mines)	:	No.-J-11015/12/2000-IA II(M) dated 13.02.2001			
	c)Environment Clearance (COBP)	:	No.-J-11015/369/2009.IA.II(M) dated 24.02.2016			
2	Location, Block / Sub.Divn./Dist/State	:	Tahasil - Sukinda, Dist - Jajpur, State -Orissa			
3	Address for communication	:	Jindal Chromite Mines, M/s. Jindal Stainless Limited, Kaliapani,Jajpur (Odisha)			
4	Existing vegetation in the area/region.	:				
	a) Species (trees/shrubs/grasses/climbers)	:	Species like - Akasia, Chakunda, Bela,Chhatiana,krushna chuda ,Radha Chuda etc. are present in this valley.			
	b) Major prevalent species of each type	:				
5	Land coverage by the Project	:	89 Hect.			
	a) Total area under the project	:	89 Hect.			
	b) Area covered for basic infrastructure (roads/building/Factory etc.)	:	4.769 Hect.			
6	Details about natural vegetation	:				
	a) Name and number of tree / species felled.	:	No normal growth of trees within the lease area except some bushes & creepers. 192 nos of trees of species like Sal, Dhaura, Kurum, Jamu etc.were felled during the year 2003 after the clearance of forest diversion			
	b) Name and number of plant species still available in the area.	:	Spice like - Kurum, Dhura, Kasi, Jamu, Asan, Bahada, Simili, Moi, Kusum, Char and Shrubs etc. are present in this valley.			
	c) By protecting the area will indigenous stock come up ?	:	Yes.			
	d) Extent of green belt developed.	:	Green belt developed over 3.12 ha.			
7	Plantations required to be carried out as per	:				
	a) Conditions of Environmental clearance in ha./nos.	:	Per ha. 2000 nos. per annum.			
	b) Conditions of Forest ( C ) Act clearance in ha./nos.	:	- do -			
	c) Voluntarily in ha./nos.	:	2035 per ha. & 6621 per annum.			



8	Details of plantation					
	a) Total area available for plantation in each category.					
	i) Green belt	ii) Dumps	iii) Back filled areas	iv) Road sides	v) Block plantation	
	3.12	12.08	3	Nil	Nil	
	Year of plantation	Species planted	Spacing	Height attained	Total area covered	Area still available
	2002-03	10200	1.5mtr. X 1.5mtr.	1 to 2mtr.	5.6 ha.	
	2003-04	5400	1.5mtr. X 1.5mtr.	1 to 2mtr.	5.6 ha.	
	2004-05	9300	1.5mtr. X 1.5mtr.	1 to 2mtr.	3.5 ha.	
	2005-06	8000	1.5mtr. X 1.5mtr.	1 to 2mtr.	3.5 ha.	
	2006-07	10800	1.5mtr. X 1.5mtr.	1 to 2mtr.	4.05 ha *	
	2007-08	3500	1.5mtr. X 1.5mtr.	1 to 2mtr.	1.8 ha *	
	2008-09	5500	1.5mtr. X 1.5mtr.	1 to 2mtr.	2.2 ha *	
	2009-10	3500	1.5mtr. X 1.5mtr.	1 to 2mtr.	1.6 ha *	
	2010-11	5000	1.5mtr. X 1.5mtr.	1 to 2mtr.	2.00 ha *	
	2011-12	3000	1.5mtr. X 1.5mtr.	1 to 2mtr.	1.1 ha *	
	2012-13	3500	1.5mtr x 1.5mtr	1 to 2mtr.	1.1 ha *	
	2013-14	8000	1.5mtr x 1.5mtr	1 to 2mtr.	5 ha *	
	2014-15	8000	1.5mtr x 1.5mtr	1 to 2mtr.	5 ha *	
	2015-16	3800	1.5mtr x 1.5mtr	1 to 2mtr.	3.5 ha *	
	2016-17	21000	1.5mtr x 1.5mtr	1.5 mtr to 2 mtr	11.0 ha *	
	2017-18	5000	1.5mtr x 1.5mtr	1 to 2mtr.	2.0 ha *	
	2018-19	5000	1.5mtr x 1.5mtr	1 to 1.5 mtr.	2.5 ha *	
	2019-20	5000	1.5mtr x 1.5mtr	1 to 1.5 mtr.	2.0 ha *	
	2020-21	3500	1.5mtr x 1.5mtr	1 to 1.5 mtr.	1.0 ha *	
	2021-22	3500	1.5mtr x 1.5mtr	1 to 1.5 mtr.	1.5 ha *	
	* Planted in the previous plantation area.					
	c) Survival % of plantation					
	Total plantations (No)		Total No. of plantation	130500		
	Survival (No.)			86620		
	Survival %		66%			
9	Agency carrying out plantation and maintenance		In house / contractor			
	Financial details (yearwise) Plantation wise and item wise					
	Sl.No.	Year	Funds allocated	Expenditure made	Average cost of each surviving plant in Rs.	
	1	2002-03	1,200,000.00	10,00,000.00		
	2	2003-04	1,200,000.00	10,00,000.00		
	3	2004-05	1,200,000.00	10,00,000.00		
	4	2005-06	1,200,000.00	10,00,000.00		
	5	2006-07	1,500,000.00	1,500,000.00		
	6	2007-08	2,000,000.00	1,600,000.00		
	7	2008-09	3,850,000.00	3,845,000.00		
	8	2009-10	4,000,000.00	3,850,000.00		
	9	2010-11	2,825,000.00	2,525,000.00		
	10	2011-12	5,130,000.00	4,510,000.00		
	11	2012-13	5,200,000.00	4,770,000.00		
	12	2013-14	4,260,000.00	4,050,000.00		
	13	2014-15	3,840,000.00	3,626,000.00		
	14	2015-16	5,560,000.00	5,514,000.00		
	15	2016-17	1,180,000.00	2,194,212.00		
	16	2017-18	250,000.00	280,000.00		
	17	2018-19	50,000.00	50,000.00		
	18	2019-20	50,000.00	50,000.00		
	19	2020-21	70,000.00	70,000.00		
	20	2021-22	70,000.00	70,000.00		

*Spd*



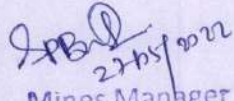
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Mines Manager  
Jindal Chromite Mines  
M/s Jindal Stainless Limited



**Annexure-III (Details of Expenses for the period October - 2021 to March-2022 .**

Sl.No	Particulars	Fund allocated (Rs.)	Expenditure made (Rs.)
1	Plant specis & it's plantation	Nil	Nil
2	Water spraying	Nil	Nil
3	Arrangement of water sprinkler in ore plot	Nil	Nil
4	Environmental monitoring	92,500.00	95,612.00
5	Others	3,40,000.00	3,47,500.00
	<b>TOTAL</b>	<b>4,32,500.00</b>	<b>4,43,112.00</b>

  
 27.05/2022  
 Mines Manager  
 Jindal Chromite Mines  
 M/s Jindal Stainless Limited



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Web : [www.mitrask.com](http://www.mitrask.com)

**TEST REPORT**

ULR: TC-695021000004510F

**Name & Address of the Customer:**

Jindal Stainless Limited,  
Kaliapani Chromite Mines  
Jajpur-755028, Odisha

**Report No.**

: C/2021/4510

**Date**

: 24.11.21

**Sample No.**

: MSK/KOL/2021/4394

**Date of receipt of sample**

: 13.11.21

**Date(s) of performance**

: 13.11.21-24.11.21

**Ref. No. & Date**

: P.O No.: 6200008210 Date: 06.01.21

**Discipline**

: Chemical

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	: Atmospheric Pollution
2	Description of sample (As declared by customer)	: Ambient Air
3	Date of sampling	: 11.11.2021 to 12.11.2021
4	Unique Identification	: Equipment Used: MSK/BBSR/FIELD/RDS-03 MSK/BBSR/FIELD/FDS-03
5	Place of sampling	: Main Gate
6	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)
7	Environmental conditions during sampling & Transport Condition	: 1) Temperature :22-26°C 2) Barometric Pressure: 760 mm of Hg 3) Rain fall : No & Cold Chain Maintained
8	Identification of the personnel performing sampling	: Mr. Akram Khan

**Report prepared by:**

Signature : *S. Chakraborty*  
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

**Report Verified By**

Signature : *P. Dutta*  
Name : Ms. Paulami Dutta  
Designation : Executive QA

**Report Sign By Authorized Signatory**

Signature : *S. Chakraborty*  
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge

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- The reserved part of sample(s), Soil, Solid & Liquid Waste shall be retained for 15 days (as per CPCB guideline) from the date of issue of the Test Report.
- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis



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Web : [www.mitrask.com](http://www.mitrask.com)

Doc No MSK/GEN/19/07



TC-6950

Report No. : C/2021/4510

Sample No. : MSK/KOL/2021/4394

ULR: TC-695021000004510F

## ANALYSIS RESULT

Sl. No.	Name of Pollutants	Unit	Results	Limit *	Test Method
1	Particulate matter (<10 µm)	µg/m <sup>3</sup>	63.3	100	IS: 5182 (Part-23)
2	Particulate matter (<2.5µm)	µg/m <sup>3</sup>	26.6	60	TPM/MSK/ENV(AP)/01/03
3	Sulphur dioxide as SO <sub>2</sub>	µg/m <sup>3</sup>	7.2	80	IS: 5182 (Part-2)
4	Nitrogen dioxide as NO <sub>2</sub>	µg/m <sup>3</sup>	26.3	80	IS: 5182 (Part- 6)
5	Carbon monoxide as CO	mg/m <sup>3</sup>	1.08	2	IS: 5182 (Part- 10)
6	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	30.2	180	TPM/MSK/ENV(AP)/01/07
7	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	17.4	400	TPM/MSK/ENV(AP)/01/08
8	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	<4.2	5	IS 5182: Part. 11
9	Benzo(a) pyrene (BaP)	ng/m <sup>3</sup>	<0.5	1	IS 5182: Part. 12
10	Lead (Pb)	µg/m <sup>3</sup>	<0.01	1	USEPA IO3.4 by ICP-OES
11	Nickel (Ni)	ng/m <sup>3</sup>	<5.0	20	USEPA IO3.4 by ICP-OES
12	Arsenic (As)	ng/m <sup>3</sup>	<1.0	6	USEPA IO3.4 by ICP-OES

\*Limit as per CPCB notification, New Delhi, 18<sup>th</sup> November 2009, for Ambient air quality

End

### Report prepared by:

Signature :   
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

### Report Verified By

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge



# Mitra S.K.Private Limited

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Web : [www.mitrask.com](http://www.mitrask.com)

Doc No MSK/GEN/19/07



## TEST REPORT

ULR: TC-695021000004511F

<b>Name &amp; Address of the Customer:</b>	<b>Report No.</b>	: C/2021/4511
Jindal Stainless Limited,	<b>Date</b>	: 24.11.21
Kaliapani Chromite Mines	<b>Sample No.</b>	: MSK/KOL/2021/4395
Jajpur-755028, Odisha	<b>Date of receipt of sample</b>	: 13.11.21
	<b>Date(s) of performance</b>	: 13.11.21-24.11.21
	<b>Ref. No. &amp; Date</b>	: P.O No.: 6200008210 Date: 06.01.21
	<b>Discipline</b>	: Chemical

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	: Atmospheric Pollution
2	Description of sample (As declared by customer)	: Ambient Air
3	Date of sampling	: 11.11.2021 to 12.11.2021
4	Unique Identification	: Equipment Used: MSK/BBSR/FIELD/RDS-04 MSK/BBSR/FIELD/FDS-04
5	Place of sampling	: COB Plant-1
6	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)
7	Environmental conditions during sampling & Transport Condition	: 1) Temperature :22-26°C 2) Barometric Pressure: 760 mm of Hg 3) Rain fall : No & Cold Chain Maintained
8	Identification of the personnel performing sampling	: Mr. Akram Khan

### Report prepared by:

Signature : *S. Chandra Sanyal*  
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

### Report Verified By

Signature : *P. Dutta*  
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature : *Dr. Soumyadeep Mukhopadhyay*  
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab in charge

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- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis



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Doc No MSK/GEN/19/07



Report No. : C/2021/4511  
Sample No. : MSK/KOL/2021/4395

ULR: TC-695021000004511F

## ANALYSIS RESULT

Sl. No.	Name of Pollutants	Unit	Results	Limit *	Test Method
1	Particulate matter (<10 µm)	µg/m <sup>3</sup>	59.1	100	IS: 5182 (Part-23)
2	Particulate matter (<2.5µm)	µg/m <sup>3</sup>	24.7	60	TPM/MSK/ENV(AP)/01/03
3	Sulphur dioxide as SO <sub>2</sub>	µg/m <sup>3</sup>	6.8	80	IS: 5182 (Part-2)
4	Nitrogen dioxide as NO <sub>2</sub>	µg/m <sup>3</sup>	22.7	80	IS: 5182 (Part- 6)
5	Carbon monoxide as CO	mg/m <sup>3</sup>	1.12	2	IS: 5182 (Part- 10)
6	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	33.5	180	TPM/MSK/ENV(AP)/01/07
7	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	23.6	400	TPM/MSK/ENV(AP)/01/08
8	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	<4.2	5	IS 5182: Part. 11
9	Benzo(a) pyrene (BaP)	ng/m <sup>3</sup>	<0.5	1	IS 5182: Part. 12
10	Lead (Pb)	µg/m <sup>3</sup>	<0.01	1	USEPA IO3.4 by ICP-OES
11	Nickel (Ni)	ng/m <sup>3</sup>	<5.0	20	USEPA IO3.4 by ICP-OES
12	Arsenic (As)	ng/m <sup>3</sup>	<1.0	6	USEPA IO3.4 by ICP-OES

\*Limit as per CPCB notification, New Delhi, 18<sup>th</sup> November 2009, for Ambient air quality

End

### Report prepared by:

Signature :   
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

### Report Verified By

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge



## TEST REPORT

ULR: TC-695021000004516F

**Name & Address of the Customer:**

Jindal Stainless Limited,  
Kaliapani Chromite Mines  
Jajpur-755028, Odisha

**Report No.**

: C/2021/4516

**Date**

: 25.11.21

**Sample No.**

: MSK/KOL/2021/4398

**Date of receipt of sample**

: 15.11.21

**Date(s) of performance**

: 15.11.21-25.11.21

**Ref. No. & Date**

: P.O No.: 6200008210 Date: 06.01.21


**Discipline**

: Chemical

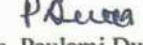
We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	: Atmospheric Pollution
2	Description of sample (As declared by customer)	: Ambient Air
3	Date of sampling	: 12.11.2021 to 13.11.2021
4	Unique Identification	: Equipment Used: MSK/BBSR/FIELD/RDS-04 MSK/BBSR/FIELD/FDS-04
5	Place of sampling	: Mining Sub Station
6	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)
7	Environmental conditions during sampling & Transport Condition	: 1) Temperature :21-26°C 2) Barometric Pressure: 760 mm of Hg 3) Rain fall : No & Cold Chain Maintained
8	Identification of the personnel performing sampling	: Mr. Akram Khan

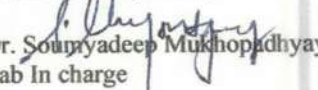
**Report prepared by:**

Signature :   
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

**Report Verified By**

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

**Report Sign By Authorized Signatory**

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge

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Web : [www.mitrask.com](http://www.mitrask.com)

Doc No MSK/GEN/19/07



TC-6950

Report No. : C/2021/4516

Sample No. : MSK/KOL/2021/4398

ULR: TC-695021000004516F

## ANALYSIS RESULT

Sl. No.	Name of Pollutants	Unit	Results	Limit *	Test Method
1	Particulate matter (<10 µm)	µg/m <sup>3</sup>	58.4	100	IS: 5182 (Part-23)
2	Particulate matter (<2.5µm)	µg/m <sup>3</sup>	26.6	60	TPM/MSK/ENV(AP)/01/03
3	Sulphur dioxide as SO <sub>2</sub>	µg/m <sup>3</sup>	6.5	80	IS: 5182 (Part-2)
4	Nitrogen dioxide as NO <sub>2</sub>	µg/m <sup>3</sup>	21.4	80	IS: 5182 (Part- 6)
5	Carbon monoxide as CO	mg/m <sup>3</sup>	0.91	2	IS: 5182 (Part- 10)
6	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	<20.0	180	TPM/MSK/ENV(AP)/01/07
7	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	15.2	400	TPM/MSK/ENV(AP)/01/08
8	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	<4.2	5	IS 5182: Part. 11
9	Benzo(a) pyrene (BaP)	ng/m <sup>3</sup>	<0.5	1	IS 5182: Part. 12
10	Lead (Pb)	µg/m <sup>3</sup>	<0.01	1	USEPA IO3.4 by ICP-OES
11	Nickel (Ni)	ng/m <sup>3</sup>	<5.0	20	USEPA IO3.4 by ICP-OES
12	Arsenic (As)	ng/m <sup>3</sup>	<1.0	6	USEPA IO3.4 by ICP-OES

\*Limit as per CPCB notification, New Delhi, 18<sup>th</sup> November 2009, for Ambient air quality

End

### Report prepared by:

Signature :   
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

### Report Verified By

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature :   
Name : Dr. Sourmyadeep Mukhopadhyay  
Designation : Lab In charge



# Mitra S.K.Private Limited

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Doc No MSK/GEN/19/07



## TEST REPORT

ULR: TC-695021000004517F

### Name & Address of the Customer:

Jindal Stainless Limited,  
Kaliapani Chromite Mines  
Jajpur-755028, Odisha

### Report No.

: C/2021/4517

### Date

: 25.11.21

### Sample No.

: MSK/KOL/2021/4399

### Date of receipt of sample

: 15.11.21

### Date(s) of performance

: 15.11.21-25.11.21

### Ref. No. & Date

: P.O No.: 6200008210 Date: 06.01.21

### Discipline

: Chemical

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	: Atmospheric Pollution
2	Description of sample (As declared by customer)	: Ambient Air
3	Date of sampling	: 12.11.2021 to 13.11.2021
4	Unique Identification	: Equipment Used: MSK/BBSR/FIELD/RDS-03 MSK/BBSR/FIELD/FDS-03
5	Place of sampling	: Hul Road
6	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)
7	Environmental conditions during sampling & Transport Condition	: 1) Temperature :21-26°C 2) Barometric Pressure: 760 mm of Hg 3) Rain fall : No & Cold Chain Maintained
8	Identification of the personnel performing sampling	: Mr. Akram Khan

### Report prepared by:

Signature :   
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

### Report Verified By

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab in charge

- The results relate only to the item(s) tested.
- This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.
- The reserved part of sample(s), except perishable sample(s), shall be retained for 15 days & 1 year (Air) from the date of issue of the Test Report.
- The reserved part of sample(s), Soil, Solid & Liquid Waste shall be retained for 15 days (as per CPCB guideline) from the date of issue of the Test Report.
- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis



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Web : [www.mitrask.com](http://www.mitrask.com)

Doc No MSK/GEN/19/07



**Report No.** : C/2021/4517

**Sample No.** : MSK/KOL/2021/4399

**ULR:** TC-695021000004517F

## ANALYSIS RESULT

Sl. No.	Name of Pollutants	Unit	Results	Limit *	Test Method
1	Particulate matter (<10 µm)	µg/m <sup>3</sup>	51.1	100	IS: 5182 (Part-23)
2	Particulate matter (<2.5µm)	µg/m <sup>3</sup>	22.3	60	TPM/MSK/ENV(AP)/01/03
3	Sulphur dioxide as SO <sub>2</sub>	µg/m <sup>3</sup>	6.7	80	IS: 5182 (Part-2)
4	Nitrogen dioxide as NO <sub>2</sub>	µg/m <sup>3</sup>	20.5	80	IS: 5182 (Part- 6)
5	Carbon monoxide as CO	mg/m <sup>3</sup>	0.57	2	IS: 5182 (Part- 10)
6	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	<20.0	180	TPM/MSK/ENV(AP)/01/07
7	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	17.3	400	TPM/MSK/ENV(AP)/01/08
8	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	<4.2	5	IS 5182: Part. 11
9	Benzo(a) pyrene (BaP)	ng/m <sup>3</sup>	<0.5	1	IS 5182: Part. 12
10	Lead (Pb)	µg/m <sup>3</sup>	<0.01	1	USEPA IO3.4 by ICP-OES
11	Nickel (Ni)	ng/m <sup>3</sup>	<5.0	20	USEPA IO3.4 by ICP-OES
12	Arsenic (As)	ng/m <sup>3</sup>	<1.0	6	USEPA IO3.4 by ICP-OES

\*Limit as per CPCB notification, New Delhi, 18<sup>th</sup> November 2009, for Ambient air quality

End

### Report prepared by

Signature :   
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

### Report Verified By

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge





## TEST REPORT

ULR: TC-695021000004551F

**Name & Address of the Customer:**

Jindal Stainless Limited,  
Kaliapani Chromite Mines  
Jajpur-755028, Odisha

**Report No.**

: C/2021/4551

**Date**

: 29.11.21

**Sample No.**

: MSK/KOL/2021/4425

**Date of receipt of sample**

: 17.11.21

**Date(s) of performance**

: 17.11.21-29.11.21

**Ref. No. & Date**

: P.O No.: 6200008210 Date: 06.01.21

**Discipline**

: Chemical

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	: Atmospheric Pollution
2	Description of sample (As declared by customer)	: Ambient Air
3	Date of sampling	: 13.11.2021 to 14.11.2021
4	Unique Identification	: Equipment Used: MSK/BBSR/FIELD/RDS-03 MSK/BBSR/FIELD/FDS-03
5	Place of sampling	: Kaliapani Village
6	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)
7	Environmental conditions during sampling & Transport Condition	: 1) Temperature :22-27°C 2) Barometric Pressure: 760 mm of Hg 3) Rain fall : No & Cold Chain Maintained
8	Identification of the personnel performing sampling	: Mr. Akram Khan

**Report prepared by:**

Signature : *S. Chakraborty*  
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

**Report Verified By**

Signature : *P. Paulami*  
Name : Ms. Paulami Dutta  
Designation : Executive QA

**Report Sign By Authorized Signatory**

Signature : *Dr. Soumyadeep Mukhopadhyay*  
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge

- The results relate only to the item(s) tested.
- This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.
- The reserved part of sample(s), except perishable sample(s), shall be retained for 15 days & 1 year (Air) from the date of issue of the Test Report.
- The reserved part of sample(s), Soil, Solid & Liquid Waste shall be retained for 15 days (as per CPCB guideline) from the date of issue of the Test Report.
- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis



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Web : [www.mitrask.com](http://www.mitrask.com)

**Report No.** : C/2021/4551**Sample No.** : MSK/KOL/2021/4425**ULR:** TC-695021000004551F**ANALYSIS RESULT**

Sl. No.	Name of Pollutants	Unit	Results	Limit *	Test Method
1	Particulate matter (<10 µm)	µg/m <sup>3</sup>	41.4	100	IS: 5182 (Part-23)
2	Particulate matter (<2.5µm)	µg/m <sup>3</sup>	18.9	60	TPM/MSK/ENV(AP)/01/03
3	Sulphur dioxide as SO <sub>2</sub>	µg/m <sup>3</sup>	6.2	80	IS: 5182 (Part-2)
4	Nitrogen dioxide as NO <sub>2</sub>	µg/m <sup>3</sup>	18.6	80	IS: 5182 (Part- 6)
5	Carbon monoxide as CO	mg/m <sup>3</sup>	0.42	2	IS: 5182 (Part- 10)
6	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	<20.0	180	TPM/MSK/ENV(AP)/01/07
7	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	22.2	400	TPM/MSK/ENV(AP)/01/08
8	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	<4.2	5	IS 5182: Part. 11
9	Benzo(a) pyrene (BaP)	ng/m <sup>3</sup>	<0.5	1	IS 5182: Part. 12
10	Lead (Pb)	µg/m <sup>3</sup>	<0.01	1	USEPA IO3.4 by ICP-OES
11	Nickel (Ni)	ng/m <sup>3</sup>	<5.0	20	USEPA IO3.4 by ICP-OES
12	Arsenic (As)	ng/m <sup>3</sup>	<1.0	6	USEPA IO3.4 by ICP-OES

\*Limit as per CPCB notification, New Delhi, 18<sup>th</sup> November 2009, for Ambient air quality

End

**Report prepared by:**

Signature : *S. Chakraborty*  
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

**Report Verified By**

Signature : *P. Dutta*  
Name : Ms. Paulami Dutta  
Designation : Executive QA

**Report Sign By Authorized Signatory**

Signature : *S. Chakraborty*  
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge





## TEST REPORT

ULR: TC-695021000004552F

**Name & Address of the Customer:**

Jindal Stainless Limited,  
Kaliapani Chromite Mines  
Jajpur-755028, Odisha

**Report No.**

: C/2021/4552

**Date**

: 29.11.21

**Sample No.**

: MSK/KOL/2021/4426

**Date of receipt of sample**

: 17.11.21

**Date(s) of performance**

: 17.11.21-29.11.21

**Ref. No. & Date**

: P.O No.: 6200008210 Date: 06.01.21

**Discipline**

: Chemical

*We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:*

1	Group	: Atmospheric Pollution
2	Description of sample (As declared by customer)	: Ambient Air
3	Date of sampling	: 13.11.2021 to 14.11.2021
4	Unique Identification	: Equipment Used: MSK/BBSR/FIELD/RDS-04 MSK/BBSR/FIELD/FDS-04
5	Place of sampling	: Saruabil Village
6	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)
7	Environmental conditions during sampling & Transport Condition	: 1) Temperature :22-27°C 2) Barometric Pressure: 760 mm of Hg 3) Rain fall : No & Cold Chain Maintained
8	Identification of the personnel performing sampling	: Mr. Akram Khan

**Report prepared by:**

Signature : *S. Chakraborty*  
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

**Report Verified By**

Signature : *P. Dutta*  
Name : Ms. Paulami Dutta  
Designation : Executive QA

**Report Sign By Authorized Signatory**

Signature : *S. Chakraborty*  
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge

- The results relate only to the item(s) tested.
- This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.
- The reserved part of sample(s), except perishable sample(s), shall be retained for 15 days & 1 year (Air) from the date of issue of the Test Report.
- The reserved part of sample(s), Soil, Solid & Liquid Waste shall be retained for 15 days (as per CPCB guideline) from the date of issue of the Test Report.
- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis



**Report No.** : C/2021/4552

**Sample No.** : MSK/KOL/2021/4426

**ULR:** TC-695021000004552F

## ANALYSIS RESULT

Sl. No.	Name of Pollutants	Unit	Results	Limit *	Test Method
1	Particulate matter (<10 µm)	µg/m <sup>3</sup>	40.6	100	IS: 5182 (Part-23)
2	Particulate matter (<2.5µm)	µg/m <sup>3</sup>	17.8	60	TPM/MSK/ENV(AP)/01/03
3	Sulphur dioxide as SO <sub>2</sub>	µg/m <sup>3</sup>	6.3	80	IS: 5182 (Part-2)
4	Nitrogen dioxide as NO <sub>2</sub>	µg/m <sup>3</sup>	19.5	80	IS: 5182 (Part- 6)
5	Carbon monoxide as CO	mg/m <sup>3</sup>	0.47	2	IS: 5182 (Part- 10)
6	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	<20.0	180	TPM/MSK/ENV(AP)/01/07
7	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	15.3	400	TPM/MSK/ENV(AP)/01/08
8	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	<4.2	5	IS 5182: Part. 11
9	Benzo(a) pyrene (BaP)	ng/m <sup>3</sup>	<0.5	1	IS 5182: Part. 12
10	Lead (Pb)	µg/m <sup>3</sup>	<0.01	1	USEPA IO3.4 by ICP-OES
11	Nickel (Ni)	ng/m <sup>3</sup>	<5.0	20	USEPA IO3.4 by ICP-OES
12	Arsenic (As)	ng/m <sup>3</sup>	<1.0	6	USEPA IO3.4 by ICP-OES

\*Limit as per CPCB notification, New Delhi, 18<sup>th</sup> November 2009, for Ambient air quality

End

### Report prepared by:

Signature : *S. Chakraborty*  
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

### Report Verified By

Signature : *P. Dutta*  
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature : *S. Soumyadeep*  
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge



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Web : [www.mitrask.com](http://www.mitrask.com)



## TEST REPORT

ULR: TC-695021000004553F

### Name & Address of the Customer:

Jindal Stainless Limited,  
Kaliapani Chromite Mines  
Jajpur-755028, Odisha

### Report No.

: C/2021/4553

### Date

: 29.11.21

### Sample No.

: MSK/KOL/2021/4427

### Date of receipt of sample

: 17.11.21

### Date(s) of performance

: 17.11.21-29.11.21

### Ref. No. & Date

: P.O No.: 6200008210 Date: 06.01.21

### Discipline

: Chemical

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	: Atmospheric Pollution
2	Description of sample (As declared by customer)	: Ambient Air
3	Date of sampling	: 14.11.2021 to 15.11.2021
4	Unique Identification	: Equipment Used: MSK/BBSR/FIELD/RDS-03 MSK/BBSR/FIELD/FDS-03
5	Place of sampling	: Sendhasara Village
6	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)
7	Environmental conditions during sampling & Transport Condition	: 1) Temperature :22-28°C 2) Barometric Pressure: 760 mm of Hg 3) Rain fall : No & Cold Chain Maintained
8	Identification of the personnel performing sampling	: Mr. Akram Khan

### Report prepared by:

Signature :   
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

### Report Verified By

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge

- The results relate only to the item(s) tested.
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- The reserved part of sample(s), except perishable sample(s), shall be retained for 15 days & 1 year (Air) from the date of issue of the Test Report.
- The reserved part of sample(s), Soil, Solid & Liquid Waste shall be retained for 15 days (as per CPCB guideline) from the date of issue of the Test Report.
- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis



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Web : [www.mitrask.com](http://www.mitrask.com)

Doc No MSK/GEN/19/07



TC-6950

Report No. : C/2021/4553  
Sample No. : MSK/KOL/2021/4427

ULR: TC-695021000004553F

## ANALYSIS RESULT

Sl. No.	Name of Pollutants	Unit	Results	Limit *	Test Method
1	Particulate matter (<10 µm)	µg/m <sup>3</sup>	50.7	100	IS: 5182 (Part-23)
2	Particulate matter (<2.5µm)	µg/m <sup>3</sup>	21.2	60	TPM/MSK/ENV(AP)/01/03
3	Sulphur dioxide as SO <sub>2</sub>	µg/m <sup>3</sup>	6.8	80	IS: 5182 (Part-2)
4	Nitrogen dioxide as NO <sub>2</sub>	µg/m <sup>3</sup>	23.6	80	IS: 5182 (Part- 6)
5	Carbon monoxide as CO	mg/m <sup>3</sup>	0.45	2	IS: 5182 (Part- 10)
6	Ozone (O <sub>3</sub> )	µg/m <sup>3</sup>	<20.0	180	TPM/MSK/ENV(AP)/01/07
7	Ammonia (NH <sub>3</sub> )	µg/m <sup>3</sup>	19.7	400	TPM/MSK/ENV(AP)/01/08
8	Benzene (C <sub>6</sub> H <sub>6</sub> )	µg/m <sup>3</sup>	<4.2	5	IS 5182: Part. 11
9	Benzo(a) pyrene (BaP)	ng/m <sup>3</sup>	<0.5	1	IS 5182: Part. 12
10	Lead (Pb)	µg/m <sup>3</sup>	<0.01	1	USEPA IO3.4 by ICP-OES
11	Nickel (Ni)	ng/m <sup>3</sup>	<5.0	20	USEPA IO3.4 by ICP-OES
12	Arsenic (As)	ng/m <sup>3</sup>	<1.0	6	USEPA IO3.4 by ICP-OES

\*Limit as per CPCB notification, New Delhi, 18<sup>th</sup> November 2009, for Ambient air quality

End

<b>Report prepared by:</b>	<b>Report Verified By</b>	<b>Report Sign By Authorized Signatory</b>
Signature : <i>S. Chandra Sanyal</i>	Signature : <i>P. Dutta</i>	Signature : <i>Dr. Soumyadeep Mukhopadhyay</i>
Name : Mr. Subyendu Chakraborty	Name : Ms. Paulami Dutta	Name : Dr. Soumyadeep Mukhopadhyay
Designation : QA Assistant	Designation : Executive QA	Designation : Lab In charge





TC-6950

## TEST REPORT

ULR: TC-695021000004554F

<b>Name &amp; Address of the Customer:</b>	<b>Report No.</b>	: C/2021/4554
Jindal Stainless Limited,	<b>Date</b>	: 29.11.21
Kaliapani Chromite Mines	<b>Sample No.</b>	: MSK/KOL/2021/4428
Jajpur-755028, Odisha.	<b>Date of receipt of sample</b>	: 17.11.21
	<b>Date(s) of performance</b>	: 17.11.21-29.11.21
	<b>Ref. No. &amp; Date</b>	: P.O No.: 6200008210 Date: 06.01.21
	<b>Discipline</b>	: Chemical

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	: Atmospheric Pollution
2	Description of sample(As declared by customer)	: Fugitive Air
3	Date of sampling	: 14.11.2021
4	Unique Identification	: Equipment Used: MSK/BBSR/FIELD/RDS -04
5	Place of sampling	: Near Main Gate
6	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)
7	Environmental conditions during sampling & Transport Condition	: 1) Temperature: 23-26 °C 2) Barometric Pressure: 760 mm of Hg 3) Rain fall: NIL & Cold Chain Maintained
8	Identification of the personnel performing sampling	: Mr. Akram Khan

## ANALYSIS RESULT

Sl. No.	Name of Pollutants	Unit	Results	Test Method
1	Particulate matter (<10 µm)	µg/m <sup>3</sup>	44.5	TPM/MSK/ENV(AP)/04/02
2	Sulphur dioxide as SO <sub>2</sub>	µg/m <sup>3</sup>	7.8	TPM/MSK/ENV(AP)/04/04
3	Nitrogen dioxide as NO <sub>2</sub>	µg/m <sup>3</sup>	27.6	TPM/MSK/ENV(AP)/04/05

\_\_\_ END \_\_\_

**Report prepared by:**  
Signature : *P. Subyendu Chakraborty*  
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

**Report Verified By**  
Signature : *Ms. Paulami Dutta*  
Name : Ms. Paulami Dutta  
Designation: Executive - QA

**Report Sign By Authorized Signatory**  
Signature : *Mr. Pradip Bag*  
Name : Mr. Pradip Bag  
Designation: Technical In Charge

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- The reserved part of sample(s), Soil, Solid & Liquid Waste shall be retained for 15 days (as per CPCB guideline) from the date of issue of the Test Report.
- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis



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Web : [www.mitrask.com](http://www.mitrask.com)

**TEST REPORT****ULR: TC-695021000004555F****Name & Address of the Customer:**

Jindal Stainless Limited,  
Kaliapani Chromite Mines  
Jajpur-755028, Odisha.

**Report No.**

: C/2021/4555

**Date**

: 29.11.21

**Sample No.**

: MSK/KOL/2021/4429

**Date of receipt of sample**

: 17.11.21

**Date(s) of performance**

: 17.11.21-29.11.21

**Ref. No. & Date**

: P.O No.: 6200008210 Date: 06.01.21

**Discipline**

: Chemical

*We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:*

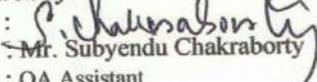
1	Group	: Atmospheric Pollution
2	Description of sample(As declared by customer)	: Fugitive Air
3	Date of sampling	: 15.11.2021
4	Unique Identification	: Equipment Used: MSK/BBSR/FIELD/RDS -03
5	Place of sampling	: COB Plant-1
6	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)
7	Environmental conditions during sampling & Transport Condition	: 1) Temperature: 23-26 °C 2) Barometric Pressure: 760 mm of Hg 3) Rain fall: NIL & Cold Chain Maintained
8	Identification of the personnel performing sampling	: Mr. Akram Khan

**ANALYSIS RESULT**

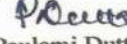
Sl. No.	Name of Pollutants	Unit	Results	Test Method
1	Particulate matter (<10 µm)	µg/m <sup>3</sup>	41.4	TPM/MSK/ENV(AP)/04/02
2	Sulphur dioxide as SO <sub>2</sub>	µg/m <sup>3</sup>	6.7	TPM/MSK/ENV(AP)/04/04
3	Nitrogen dioxide as NO <sub>2</sub>	µg/m <sup>3</sup>	24.2	TPM/MSK/ENV(AP)/04/05

\_\_\_ END \_\_\_


**Report prepared by:**

Signature :   
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

**Report Verified By**

Signature :   
Name : Ms. Paulami Dutta  
Designation: Executive - QA

**Report Sign By Authorized Signatory**

Signature :   
Name : Mr. Pradip Bag  
Designation: Technical In Charge

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- The reserved part of sample(s), Soil, Solid & Liquid Waste shall be retained for 15 days (as per CPCB guideline) from the date of issue of the Test Report.
- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis





## TEST REPORT

ULR: TC-695021000004556F

<b>Name &amp; Address of the Customer:</b>	<b>Report No.</b>	: C/2021/4556
Jindal Stainless Limited,	<b>Date</b>	: 29.11.21
Kaliapani Chromite Mines	<b>Sample No.</b>	: MSK/KOL/2021/4430
Jajpur-755028, Odisha.	<b>Date of receipt of sample</b>	: 17.11.21
	<b>Date(s) of performance</b>	: 17.11.21-29.11.21
	<b>Ref. No. &amp; Date</b>	: P.O No.: 6200008210 Date: 06.01.21
	<b>Discipline</b>	: Chemical

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	: Atmospheric Pollution
2	Description of sample(As declared by customer)	: Fugitive Air
3	Date of sampling	: 15.11.2021
4	Unique Identification	: Equipment Used: MSK/BBSR/FIELD/RDS -04
5	Place of sampling	: Near Weigh Bridge
6	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)
7	Environmental conditions during sampling & Transport Condition	: 1) Temperature: 23-26 °C 2) Barometric Pressure: 760 mm of Hg 3) Rain fall: NIL & Cold Chain Maintained
8	Identification of the personnel performing sampling	: Mr. Akram Khan

## ANALYSIS RESULT

Sl. No.	Name of Pollutants	Unit	Results	Test Method
1	Particulate matter (<10 µm)	µg/m <sup>3</sup>	38.7	TPM/MSK/ENV(AP)/04/02
2	Sulphur dioxide as SO <sub>2</sub>	µg/m <sup>3</sup>	6.6	TPM/MSK/ENV(AP)/04/04
3	Nitrogen dioxide as NO <sub>2</sub>	µg/m <sup>3</sup>	21.9	TPM/MSK/ENV(AP)/04/05

\_\_\_ END \_\_\_

**Report prepared by:**  
Signature : *S. Chakraborty*  
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

**Report Verified By:**  
Signature : *Paulami Dutta*  
Name : Ms. Paulami Dutta  
Designation: Executive - QA

**Report Sign By Authorized Signatory**  
Signature : *Pradip Bag*  
Name : Mr. Pradip Bag  
Designation: Technical In Charge

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- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis





## TEST REPORT

ULR: TC-695021000004512F

### Name & Address of the Customer:

Jindal Stainless Limited,  
Kaliapani Chromite Mines  
Jajpur-755028, Odisha.

### Report No.

: C/2021/4512

### Date

: 24.11.21

### Sample No.

: MSK/KOL/2021/4396

### Date of receipt of sample

: 13.11.21

### Date(s) of performance

: 13.11.21-24.11.21

### Ref. No. & Date

: P.O No.: 6200008210 Date: 06.01.21

### Discipline

: Chemical

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	: Atmospheric Pollution
2	Description of sample(As declared by customer)	: Noise
3	Date of sampling	: 11.11.2021 to 12.11.2021
4	Unique Identification	: Equipment Used: MSK/BBSR/FIELD/SLM/01
5	Place of sampling	: Near COB Plant-1
6	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)
7	Environmental conditions during sampling & Transport Condition	: NA
8	Identification of the personnel performing sampling	: Mr. Akram Khan

## ANALYSIS RESULT

SL. No	Parameter(s)	Unit of Measurement	Test Method	Result	Zone	Limits as per CPCB	
						Day Time (6.00 - 22.00)	Night Time (22.00 - 06.00)
1.	Leq Day time (6.00-22.00)	dB(A)	IS:9989	57.9	Industrial	75	70
2.	Leq Night time (22.00 -6.00)			42.7			

\_\_\_ END \_\_\_

### Report prepared by:

Signature : *S. Subyendu Chakraborty*  
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

### Report Verified By

Signature : *P. Dutta*  
Name : Ms. Paulami Dutta  
Designation: Executive - QA

### Report Sign By Authorized Signatory

Signature : *P. Bag*  
Name : Mr. Pradip Bag  
Designation: Technical In Charge

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- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis



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Web : [www.mitrask.com](http://www.mitrask.com)



TC-6950

**TEST REPORT**

ULR: TC-695021000004513F

<b>Name &amp; Address of the Customer:</b>	<b>Report No.</b>	: C/2021/4513
Jindal Stainless Limited,	<b>Date</b>	: 24.11.21
Kaliapani Chromite Mines	<b>Sample No.</b>	: MSK/KOL/2021/4397
Jajpur-755028, Odisha.	<b>Date of receipt of sample</b>	: 13.11.21
	<b>Date(s) of performance</b>	: 13.11.21-24.11.21
	<b>Ref. No. &amp; Date</b>	: P.O No.: 6200008210 Date: 06.01.21
	<b>Discipline</b>	: Chemical


We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:


1	Group	: Atmospheric Pollution
2	Description of sample(As declared by customer)	: Noise
3	Date of sampling	: 11.11.2021 to 12.11.2021
4	Unique Identification	: Equipment Used: MSK/BBSR/FIELD/SLM/01
5	Place of sampling	: Near Main Gate
6	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)
7	Environmental conditions during sampling & Transport Condition	: NA
8	Identification of the personnel performing sampling	: Mr. Akram Khan


**ANALYSIS RESULT**

SL. No	Parameter(s)	Unit of Measurement	Test Method	Result	Zone	Limits as per CPCB	
						Day Time (6.00 - 22.00)	Night Time (22.00 - 06.00)
1.	Leq Day time (6.00-22.00)	dB(A)	IS:9989	58.0	Industrial	75	70
2.	Leq Night time (22.00 -6.00)			43.3			

— END —

**Report prepared by:**  
Signature :   
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

**Report Verified By**  
Signature :   
Name : Ms. Paulami Dutta  
Designation: Executive - QA

**Report Sign By Authorized Signatory**  
Signature :   
Name : Mr. Pradip Bag  
Designation: Technical In Charge

- The results relate only to the item(s) tested.
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- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis



## Mitra S.K.Private Limited



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Email : [mitrasklab@yahoo.com](mailto:mitrasklab@yahoo.com)  
Web : [www.mitrask.com](http://www.mitrask.com)

**TEST REPORT****ULR: TC-695021000004518F**

**Name & Address of the Customer:**  
Jindal Stainless Limited,  
Kaliapani Chromite Mines  
Jajpur-755028, Odisha.

**Report No.** : C/2021/4518  
**Date** : 25.11.21  
**Sample No.** : MSK/KOL/2021/4400  
**Date of receipt of sample** : 15.11.21  
**Date(s) of performance** : 15.11.21-25.11.21  
**Ref. No. & Date** : P.O No.: 6200008210 Date: 06.01.21  
**Discipline** : Chemical

*We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:*

1	Group	: Atmospheric Pollution
2	Description of sample(As declared by customer)	: Noise
3	Date of sampling	: 12.11.2021 to 13.11.2021
4	Unique Identification	: Equipment Used: MSK/BBSR/FIELD/SLM/01
5	Place of sampling	: Near Admin Building
6	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)
7	Environmental conditions during sampling & Transport Condition	: NA
8	Identification of the personnel performing sampling	: Mr. Akram Khan

**ANALYSIS RESULT**

SL. No	Parameter(s)	Unit of Measurement	Test Method	Result	Zone	Limits as per CPCB	
						Day Time (6.00 - 22.00)	Night Time (22.00 - 06.00)
1.	Leq Day time (6.00-22.00)	dB(A)	IS:9989	59.0	Industrial	75	70
2.	Leq Night time (22.00 - 6.00)			43.5			

— END —

**Report prepared by:**

Signature : *Subyendu Chakraborty*  
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

**Report Verified By**

Signature : *Paulami Dutta*  
Name : Ms. Paulami Dutta  
Designation: Executive - QA

**Report Sign By Authorized Signatory**

Signature : *Pradip Bag*  
Name : Mr. Pradip Bag  
Designation: Technical In Charge

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- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis



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Web : [www.mitrask.com](http://www.mitrask.com)



## TEST REPORT

**ULR: TC-695021000004519F**

<b>Name &amp; Address of the Customer:</b> Jindal Stainless Limited, Kaliapani Chromite Mines Jajpur-755028, Odisha.	<b>Report No.</b>	: C/2021/4519
	<b>Date</b>	: 25.11.21
	<b>Sample No.</b>	: MSK/KOL/2021/4401
	<b>Date of receipt of sample</b>	: 15.11.21
	<b>Date(s) of performance</b>	: 15.11.21-25.11.21
	<b>Ref. No. &amp; Date</b>	: P.O No.: 6200008210 Date: 06.01.21
	<b>Discipline</b>	: Chemical

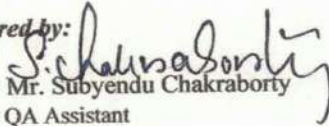
We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

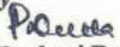
1	Group	: Atmospheric Pollution
2	Description of sample(As declared by customer)	: Noise
3	Date of sampling	: 12.11.2021 to 13.11.2021
4	Unique Identification	: Equipment Used: MSK/BBSR/FIELD/SLM/01
5	Place of sampling	: Out Side Boundary Wall, JSL Main Gate
6	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)
7	Environmental conditions during sampling & Transport Condition	: NA
8	Identification of the personnel performing sampling	: Mr. Akram Khan


## ANALYSIS RESULT

SL. No	Parameter(s)	Unit of Measurement	Test Method	Result	Zone	Limits as per CPCB	
						Day Time (6.00 - 22.00)	Night Time (22.00 - 06.00)
1.	Leq Day time (6.00-22.00)	dB(A)	IS:9989	62.5	Industrial	75	70
2.	Leq Night time (22.00 -6.00)			50.4			

END

**Report prepared by:**  
Signature :   
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

**Report Verified By**  
Signature :   
Name : Ms. Paulami Dutta  
Designation: Executive - QA

**Report Sign By Authorized Signatory**  
Signature :   
Name : Mr. Pradip Bag  
Designation: Technical In Charge

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- The reserved part of sample(s), Soil, Solid & Liquid Waste shall be retained for 15 days (as per CPCB guideline) from the date of issue of the Test Report.
- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis



## Mitra S.K.Private Limited

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Web : [www.mitrask.com](http://www.mitrask.com)

**TEST REPORT**

ULR: TC-695021000004520F

**Name & Address of the Customer:**

Jindal Stainless Limited,  
Kaliapani Chromite Mines  
Jajpur-755028, Odisha.

**Report No.**

: C/2021/4520

**Date**

: 25.11.21

**Sample No.**

: MSK/KOL/2021/4402

**Date of receipt of sample**

: 15.11.21

**Date(s) of performance**

: 15.11.21-25.11.21

**Ref. No. & Date**

: P.O No.: 6200008210 Date: 06.01.21

**Discipline**

: Chemical

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	: Atmospheric Pollution
2	Description of sample(As declared by customer)	: Noise
3	Date of sampling	: 12.11.2021 to 13.11.2021
4	Unique Identification	: Equipment Used: MSK/BBSR/FIELD/SLM/01
5	Place of sampling	: Near Mining Substation
6	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)
7	Environmental conditions during sampling & Transport Condition	: NA
8	Identification of the personnel performing sampling	: Mr. Akram Khan

**ANALYSIS RESULT**

SL. No	Parameter(s)	Unit of Measurement	Test Method	Result	Zone	Limits as per CPCB	
						Day Time (6.00 - 22.00)	Night Time (22.00 - 06.00)
1.	Leq Day time (6.00-22.00)	dB(A)	IS:9989	58.6	Industrial	75	70
2.	Leq Night time (22.00 -6.00)			42.1			

END

**Report prepared by:**

Signature :   
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

**Report Verified By**

Signature :   
Name : Ms. Paulami Dutta  
Designation: Executive - QA

**Report Sign By Authorized Signatory**

Signature :   
Name : Mr. Pradip Bag  
Designation: Technical In Charge

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- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis





## TEST REPORT

ULR: TC-695021000004542F

### Name & Address of the Customer:

Jindal Stainless Limited,  
Kaliapani Chromite Mines  
Jajpur-755028, Odisha.

### Report No.

: C/2021/4542

### Date

: 25.11.21

### Sample No.

: MSK/KOL/2021/4463

### Date of receipt of sample

: 17.11.21

### Date(s) of performance

: 17.11.21-25.11.21

### Ref. No. & Date

: P.O No.: 6200008210 Date: 06.01.21

### Discipline

: Chemical

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	: Atmospheric Pollution
2	Description of sample(As declared by customer)	: Noise
3	Date of sampling	: 13.11.2021 to 14.11.2021
4	Unique Identification	: Equipment Used: MSK/BBSR/FIELD/SLM/01
5	Place of sampling	: Kaliapani Village
6	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)
7	Environmental conditions during sampling & Transport Condition	: NA
8	Identification of the personnel performing sampling	: Mr. Akram Khan

## ANALYSIS RESULT

SL. No	Parameter(s)	Unit of Measurement	Test Method	Result	Zone	Limits as per CPCB	
						Day Time (6.00 - 22.00)	Night Time (22.00 - 06.00)
1.	Leq Day time (6.00-22.00)	dB(A)	IS:9989	61.3	Industrial	75	70
2.	Leq Night time (22.00 -6.00)			43.4			

\_\_\_ END \_\_\_

### Report prepared by:

Signature : *S. Chakraborty*  
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

### Report Verified By

Signature : *Paulami Dutta*  
Name : Ms. Paulami Dutta  
Designation: Executive - QA

### Report Sign By Authorized Signatory

Signature : *Pradip Bag*  
Name : Mr. Pradip Bag  
Designation: Technical In Charge

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Web : [www.mitrask.com](http://www.mitrask.com)



## TEST REPORT

ULR: TC-695021000004543F

<b>Name &amp; Address of the Customer:</b>	<b>Report No.</b>	: C/2021/4543
Jindal Stainless Limited,	<b>Date</b>	: 25.11.21
Kaliapani Chromite Mines	<b>Sample No.</b>	: MSK/KOL/2021/4464
Jajpur-755028, Odisha.	<b>Date of receipt of sample</b>	: 17.11.21
	<b>Date(s) of performance</b>	: 17.11.21-25.11.21
	<b>Ref. No. &amp; Date</b>	: P.O No.: 6200008210 Date: 06.01.21
	<b>Discipline</b>	: Chemical

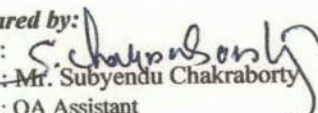
We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

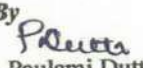
1	Group	: Atmospheric Pollution
2	Description of sample(As declared by customer)	: Noise
3	Date of sampling	: 13.11.2021 to 14.11.2021
4	Unique Identification	: Equipment Used: MSK/BBSR/FIELD/SLM/01
5	Place of sampling	: Saruabil Village
6	Sampling Plan & Procedures used	: IS/CPCB Guidelines (Volume-1)
7	Environmental conditions during sampling & Transport Condition	: NA
8	Identification of the personnel performing sampling	: Mr. Akram Khan


## ANALYSIS RESULT

SL. No	Parameter(s)	Unit of Measurement	Test Method	Result	Zone	Limits as per CPCB	
						Day Time (6.00 - 22.00)	Night Time (22.00 - 06.00)
1.	Leq Day time (6.00-22.00)	dB(A)	IS:9989	59.5	Industrial	75	70
2.	Leq Night time (22.00 -6.00)			42.1			

\_\_\_ END \_\_\_

**Report prepared by:**  
Signature :   
Name : Mr. Subyendu Chakraborty  
Designation : QA Assistant

**Report Verified By**  
Signature :   
Name : Ms. Paulami Dutta  
Designation: Executive - QA

**Report Sign By Authorized Signatory**  
Signature :   
Name : Mr. Pradip Bag  
Designation: Technical In Charge

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**TEST REPORT**

ULR: TC-695021000004538F

**Name & Address of the Customer:**

Jindal Stainless Limited,  
Kaliapani Chromite Mines  
Jajpur-755028, Odisha.

**Report No.**

:C/2021/4538

**Date**

:25.11.21

**Sample No.**

:MSK/KOL/2021/4443

**Date of receipt of sample**

:17.11.21

**Date(s) of performance**

:17.11.21-25.11.21

**Ref. No. & Date**

:P.O No.: 6200006415 Date: 29.04.19

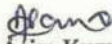
**Discipline**

:Chemical


We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	:Water & Residue in Water
2	Description of sample(As declared by customer)	:Drinking Water
3	Date of sampling	:16.11.21
4	Unique Identification	:Near Main Gate
5	Place of sampling	:Jindal Stainless Limited, Kaliapani Chromite Mines, Jajpur-755028, Odisha
6	Sampling Plan & Procedures used	:As per FSSAI Manual
7	Environmental conditions during sampling & Transport Condition	:2 <sup>o</sup> C-5 <sup>o</sup> C
8	Identification of the personnel performing sampling	:Mr. Akram Khan

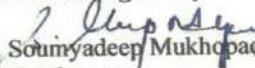
**Report prepared by:**

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

**Report Verified By**

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

**Report Sign By Authorized Signatory**

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In-charge

- The results relate only to the item(s) tested.
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- The reserved part of sample(s), Soil, Solid & Liquid Waste shall be retained for 15 days (as per CPCB guideline) from the date of issue of the Test Report.
- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis



## Mitra S.K.Private Limited



Building No. P- 48, Udayan Industrial Estate,  
3, Pagladanga Road,  
Kolkata 700015, West Bengal  
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TC-6950

Report No. : C/2021/4538  
Sample No. : MSK/KOL/2021/4443

ULR: TC-695021000004538F

Analysis Result**Table 1: Organoleptic and Physical Parameters as per IS 10500:2012**

Sl. No.	Characteristic	Requirement (Acceptable Limit)	Permissible limit in the absence of alternate Source	Method of Test	Result
1	Colour in Hazen unit	5	15	IS 3025 (Part 4)	BDL(DL:1.0)
2	Odour	Agreeable	Agreeable	IS 3025 (Part 5)	Agreeable
3	Turbidity in N.T. U	1	5	IS 3025 (Part 10)	BDL(DL:1.0)
4	Total Dissolved Solids in mg/l	500	2000	IS 3025 (Part 16)	42.0
5	pH value at 25°C	6.5-8.5	No Relaxation	IS 3025 (Part 11)	7.48

**Table2: General Parameters- Concerning Substances Undesirable in Excessive Amounts as per IS 10500:2012**

Sl. No.	Characteristic	Requirement (Acceptable Limit)	Permissible limit in the absence of alternate Source	Method of Test	Result
1	Aluminium (as Al) in mg/l	0.03	0.2	IS 3025(Part-2)	BDL(DL:0.01)
2	Ammonia (as total ammonia- N) in mg/l	0.5	No Relaxation	IS 3025 (Part 34)	BDL(DL:0.1)
3	Barium (as Ba) in mg/l	0.7	No Relaxation	IS 3025(Part-2)	BDL(DL:0.1)
4	Boron (as B) in mg/l	0.5	1.0	IS 3025(Part-2)	BDL(DL:0.3)
5	Calcium (as Ca) in mg/l	75	200	IS 3025 (Part 40)	6.34
6	Chloride (as Cl) in mg/l	250	1000	IS 3025(Part32)	10.78
7	Copper (as Cu) in mg/l	0.05	1.5	IS 3025(Part-2)	BDL(DL:0.02)
8	Fluoride (as F) in mg/l	1.0	1.5	IS 3025 (Part 60)	BDL(DL:0.2)
9	Free Residual Chlorine in mg/l	0.2	1.0	IS 3025 (Part 26)	BDL(DL:0.1)
10	Iron (as Fe) in mg/l	0.3	No Relaxation	IS 3025 (Part 53)	BDL(DL:0.05)
11	Magnesium (as Mg) in mg/l	30	100	IS 3025 (Part 46)	3.33
12	Manganese (as Mn) in mg/l	0.1	0.3	IS 3025(Part-2)	BDL(DL:0.02)
13	Nitrate (as NO <sub>3</sub> ) in mg/l	45	No Relaxation	IS 3025 (Part 34)	BDL(DL:0.4)
14	Selenium (as Se) in mg/l	0.01	No Relaxation	IS 3025(Part-2)	BDL(DL:0.005)
15	Silver (as Ag) in mg/l	0.1	No Relaxation	IS 3025(Part-2)	BDL(DL:0.005)
16	Sulphate (as SO <sub>4</sub> ) in mg/l	200	400	IS 3025 (Part 24)	BDL(DL:1.0)
17	Sulphide (as H <sub>2</sub> S) in mg/l	0.05	No Relaxation	IS 3025 (Part 29)	BDL(DL:0.02)
18	Total Alkalinity (as CaCO <sub>3</sub> ) in mg/l	200	600	IS 3025 (Part 23)	28.28
19	Total Hardness (as CaCO <sub>3</sub> ) in mg/l	200	600	IS 3025 (Part 21)	29.70
20	Zinc (as Zn) in mg/l	5	15	IS 3025(Part-2)	BDL(DL:0.02)

BDL = Below Detection Limit, DL = Detection Limit

**Report prepared by:**

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

**Report Verified By**

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

**Report Sign By Authorized Signatory**

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In-charge



**Mitra S.K.Private Limited**

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**Report No.** : C/2021/4538  
**Sample No.** : MSK/KOL/2021/4443

ULR: TC-695021000004538F

**ANALYSIS RESULT****Table 3: Parameters Concerning Toxic Substances as per IS 10500:2012**

Sl. No.	Characteristic	Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source	Method of Test, Ref to	Result
1	Cadmium (as Cd) in mg/l	0.003	No Relaxation	IS 3025(Part-2)	BDL(DL:0.001)
2	Lead (as Pb) in mg/l	0.01	No Relaxation	IS 3025(Part-2)	BDL(DL:0.005)
3	Mercury (as Hg) in mg/l	0.001	No Relaxation	IS 3025(Part-48)	BDL(DL:0.0002)
4	Molybdenum (as Mo) in mg/l	0.07	No Relaxation	IS 3025(Part-2)	BDL(DL:0.05)
5	Nickel (as Ni) in mg/l	0.02	No Relaxation	IS 3025(Part-2)	BDL(DL:0.01)
6	Total Arsenic (as As) in mg/l	0.01	0.05	IS 3025(Part-2)	BDL(DL:0.005)
7	Total Chromium (as Cr) in mg/l	0.05	No Relaxation	IS 3025(Part-2)	BDL(DL:0.01)

**Extra parameter as per Work Order**

Sl. No.	Characteristic	Requirement (Acceptable Limit)	Permissible limit in the absence of alternate Source	Method of Test	Result
1	Chromium (as Cr <sup>+6</sup> ) in mg/l	-	-	IS 3025 (Part 52)	BDL(DL:0.01)

BDL = Below Detection Limit, DL = Detection Limit

----- END -----

**Report prepared by:**

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

**Report Verified By**

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

**Report Sign By Authorized Signatory**

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In-charge





## TEST REPORT

**Name & Address of the Customer:**  
Jindal Stainless Limited,  
Kaliapani Chromite Mines  
Jajpur-755028, Odisha.

**Report No.**

**Date**

**Sample No.**

**Date of receipt of sample**

**Date(s) of performance**

**Ref. No. & Date**

**Discipline**

**ULR: TC-695021000004538F**

:C/2021/4538

:25.11.21

:MSK/KOL/2021/4443

:17.11.21

:17.11.21-18.11.21

:P.O No.: 6200006415 Date: 29.04.19

:Biological

*We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:*

1	Group	:Water
2	Description of sample(As declared by customer)	:Drinking Water
3	Date of sampling	:16.11.21
4	Unique Identification	:Near Main Gate
5	Place of sampling	:Jindal Stainless Limited, Kaliapani Chromite Mines, Jajpur-755028, Odisha
6	Sampling Plan & Procedures used	:As per FSSAI Manual
7	Environmental conditions during sampling & Transport Condition	:2 <sup>0</sup> C-5 <sup>0</sup> C
8	Identification of the personnel performing sampling	:Mr. Akram Khan

### Analysis Result

#### Bacteriological Quality of Drinking Water as per IS 10500:2012 Amendment No.2 September 2018

Sl. No.	Test Parameter	Limit	Method of Test	Result
1.	<i>E. coli</i> /100 ml	Not Detectable	IS 15185:2016	Not Detected
2.	Total Coliform Bacteria/100 ml	Not Detectable	IS 15185:2016	Not Detected

END

#### Report prepared by

Signature :   
Name :Mr. Asim Kumar Jana  
Designation :Sr. Office Assistant

#### Report Verified By

Signature :   
Name :Ms. Paulami Dutta  
Designation :Executive QA

#### Report Sign By Authorized Signatory

Signature :   
Name :Mr. Sukanta Palui  
Designation :Executive Microbiologist

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- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis





## TEST REPORT

ULR: TC-695021000004538F

### Name & Address of the Customer:

Jindal Stainless Limited,  
Kaliapani Chromite Mines  
Jajpur-755028, Odisha.

### Report No.

:C/2021/4539

### Date

:25.11.21

### Sample No.

:MSK/KOL/2021/4444

### Date of receipt of sample

:17.11.21

### Date(s) of performance

:17.11.21-25.11.21

### Ref. No. & Date

:P.O No.: 6200006415 Date: 29.04.19


### Discipline

:Chemical

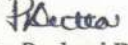
We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	:Water & Residue in Water
2	Description of sample(As declared by customer)	:Drinking Water
3	Date of sampling	:16.11.21
4	Unique Identification	:Colony
5	Place of sampling	:Jindal Stainless Limited, Kaliapani Chromite Mines, Jajpur-755028, Odisha
6	Sampling Plan & Procedures used	:As per FSSAI Manual
7	Environmental conditions during sampling & Transport Condition	:2 <sup>0</sup> C-5 <sup>0</sup> C
8	Identification of the personnel performing sampling	:Mr. Akram Khan

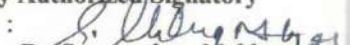
### Report prepared by:

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

### Report Verified By

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In-charge

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- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis



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Report No. : C/2021/4539  
Sample No. : MSK/KOL/2021/4444

ULR: TC-695021000004539F

## Analysis Result

**Table 1: Organoleptic and Physical Parameters as per IS 10500:2012**

Sl. No.	Characteristic	Requirement (Acceptable Limit)	Permissible limit in the absence of alternate Source	Method of Test	Result
1	Colour in Hazen unit	5	15	IS 3025 (Part 4)	BDL(DL:1.0)
2	Odour	Agreeable	Agreeable	IS 3025 (Part 5)	Agreeable
3	Turbidity in N.T. U	1	5	IS 3025 (Part 10)	BDL(DL:1.0)
4	Total Dissolved Solids in mg/l	500	2000	IS 3025 (Part 16)	34.0
5	pH value at 25°C	6.5-8.5	No Relaxation	IS 3025 (Part 11)	8.41

**Table2: General Parameters- Concerning Substances Undesirable in Excessive Amounts as per IS 10500:2012**

Sl. No.	Characteristic	Requirement (Acceptable Limit)	Permissible limit in the absence of alternate Source	Method of Test	Result
1	Aluminium (as Al) in mg/l	0.03	0.2	IS 3025(Part-2)	BDL(DL:0.01)
2	Ammonia (as total ammonia- N) in mg/l	0.5	No Relaxation	IS 3025 (Part 34)	BDL(DL:0.1)
3	Barium (as Ba) in mg/l	0.7	No Relaxation	IS 3025(Part-2)	BDL(DL:0.1)
4	Boron (as B) in mg/l	0.5	1.0	IS 3025(Part-2)	BDL(DL:0.3)
5	Calcium (as Ca) in mg/l	75	200	IS 3025 (Part 40)	6.34
6	Chloride (as Cl) in mg/l	250	1000	IS 3025(Part32)	9.80
7	Copper (as Cu) in mg/l	0.05	1.5	IS 3025(Part-2)	BDL(DL:0.02)
8	Fluoride (as F) in mg/l	1.0	1.5	IS 3025 (Part 60)	BDL(DL:0.2)
9	Free Residual Chlorine in mg/l	0.2	1.0	IS 3025 (Part 26)	BDL(DL:0.1)
10	Iron (as Fe) in mg/l	0.3	No Relaxation	IS 3025 (Part 53)	BDL(DL:0.05)
11	Magnesium (as Mg) in mg/l	30	100	IS 3025 (Part 46)	1.9
12	Manganese (as Mn) in mg/l	0.1	0.3	IS 3025(Part-2)	BDL(DL:0.02)
13	Nitrate (as NO <sub>3</sub> ) in mg/l	45	No Relaxation	IS 3025 (Part 34)	BDL(DL:0.4)
14	Selenium (as Se) in mg/l	0.01	No Relaxation	IS 3025(Part-2)	BDL(DL:0.005)
15	Silver (as Ag) in mg/l	0.1	No Relaxation	IS 3025(Part-2)	BDL(DL:0.005)
16	Sulphate (as SO <sub>4</sub> ) in mg/l	200	400	IS 3025 (Part 24)	BDL(DL:1.0)
17	Sulphide (as H <sub>2</sub> S) in mg/l	0.05	No Relaxation	IS 3025 (Part 29)	BDL(DL:0.02)
18	Total Alkalinity (as CaCO <sub>3</sub> ) in mg/l	200	600	IS 3025 (Part 23)	24.24
19	Total Hardness (as CaCO <sub>3</sub> ) in mg/l	200	600	IS 3025 (Part 21)	23.76
20	Zinc (as Zn) in mg/l	5	15	IS 3025(Part-2)	BDL(DL:0.02)

BDL = Below Detection Limit, DL = Detection Limit

### Report prepared by:

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

### Report Verified By

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In-charge





TC-6950

## TEST REPORT

**Name & Address of the Customer:**  
Jindal Stainless Limited,  
Kaliapani Chromite Mines  
Jajpur-755028, Odisha.

**Report No.**

**Date**

**Sample No.**

**Date of receipt of sample**

**Date(s) of performance**

**Ref. No. & Date**

**Discipline**

**ULR: TC-695021000004539F**

:C/2021/4539

:25.11.21

:MSK/KOL/2021/4444

:17.11.21

:17.11.21-18.11.21

:P.O No.: 6200006415 Date: 29.04.19

:Biological

*We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:*

1	Group	: Water
2	Description of sample(As declared by customer)	: Drinking Water
3	Date of sampling	: 16.11.21
4	Unique Identification	: Colony
5	Place of sampling	: Jindal Stainless Limited, Kaliapani Chromite Mines, Jajpur-755028, Odisha
6	Sampling Plan & Procedures used	: As per FSSAI Manual
7	Environmental conditions during sampling & Transport Condition	: 2° C-5°C
8	Identification of the personnel performing sampling	: Mr. Akram Khan

### Analysis Result

#### Bacteriological Quality of Drinking Water as per IS 10500:2012 Amendment No.2 September 2018

Sl. No.	Test Parameter	Limit	Method of Test	Result
1.	<i>E. coli</i> /100 ml	Not Detectable	IS 15185:2016	Not Detected
2.	Total Coliform Bacteria/100 ml	Not Detectable	IS 15185:2016	Not Detected

END

#### Report prepared by

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

#### Report Verified By

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

#### Report Sign By Authorized Signatory

Signature :   
Name : Mr. Sukanta Palui  
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## 8.3.4 Summary of Year-wise Proposal for Item No 8.3

Items	Details	Cumulative as on date	Proposed (Year)				
			2017-18	2018-19	2019-20	2020-21	2021-22
Dump management	Area afforested (Ha)	21.7 Ha inside ML	Gap plantation	On 1 <sup>st</sup> year dump	On 2 <sup>nd</sup> year dump	On 3 <sup>rd</sup> year dump	On 4 <sup>th</sup> year dump
	No of saplings planted	112000 (as on 30.09.16)	3000	3500	2500	3000	3000
	Cumulative no of plants	112000	115000	118500	121000	124000	127000
	Cost including watch and care during the year (Lakhs)	212 lakhs	-	-	-	-	-
Management of worked out benches	Area available for rehabilitation (Ha)	8.24 ha	-	-	-	-	-
	Afforestation done (ha)	2.8	-	-	-	-	-
	No of saplings planted in the year	-	500	500	500	500	500
	Cumulative no of plants	5000	5500	6000	6500	7000	7500
	Any other method of rehabilitation (specify)	-	-	-	-	-	-
	Cost including watch and care during the year (L)	-	1,00,000	1,00,000	1,00,000	1,00,000	1,00,000
Reclamation and Rehabilitation by backfilling	Void available for Backfilling (L x B x D) pit wise /stope wise	265 x 311 x 93 (8.24 Ha)	-	-	-	-	-
	Void filled by waste /tailings	From 71 mRL to 150 mRL	-	-	-	-	-
	Afforestation on the backfilled area	5000	-	-	-	-	-
	Rehabilitation by making water reservoir		-	-	-	-	-
	Any other means (specify)		-	-	-	-	-
Rehabilitation of waste land within lease	Area available (ha)		-	-	-	-	-
	Area rehabilitated		-	-	-	-	-
	Method of rehabilitation		-	-	-	-	-
Others (specify)	Besides, retaining wall, garland drain, settling tank etc have been constructed and shall be re-constructed. Details are as follows.		-	-	-	-	-



Particulars	Already Constructed	To be constructed				
		2017-18	2018-19	2019-20	2020-21	2021-22
Retaining wall (m)	633	100	100	Regular maintenance		
Garland drain (m)	2815	Regular de-silting				
Boulder wall (m)	348	Regular maintenance				
Settling Pond	One	Regular de-silting				
Afforestation (Dump, lease boundary, office premises)	21.7 Ha/112,000 nos	3000 (Gap plantation)	3500 (Gap plantation)	2500 (Gap plantation)	3000(Gap plantation)	3000(Gap plantation)
Construction of check Dam (No.)	---	As required				

#### 8.4 Disaster Management and Risk Assessment

Action plan for high risk accidents like landslides, subsidence flood, fire, seismic activities, tailing dam failure etc. and emergency plan proposed for quick evacuation, ameliorative measures to be taken etc. The capability of lessee to meet such eventualities and the assistance to be required from the local authority are also described.

As far as the nature of deposit and method of mining (opencast) is concerned, there is no possibility of landslide, subsidence, flood, inundation, fire, seismic activity and tailing dam failure etc.

##### 8.4.1 Measures taken for controlling any unforeseen disaster and risk etc

- Ultimate slope of the quarry is kept at  $\leq 30^\circ$  and the waste dump at  $\leq 30^\circ$ .
- The nearest water body which controls the drainage system and receives the entire rain & run-off water is Damsala nala at a distance of 2 km from the mine towards north. There were no floods in the past & not expected in future too, as the area is located in higher altitudes.
- Though earthquake is felt several times in Orissa, damage to man & material has not been severe till date.
- One explosives magazines with total capacity of 600 Kgs have been constructed within the lease area for storage of explosives. Handling of explosives and blasting operations are done by qualified blasters and blaster helpers under the supervision of an Asst. Manager. The Asst. Manager is assisted with a qualified foreman to have effective supervision. To control fly rock fragments during blasting thereby creating problems to nearby men and machinery, precautionary measures are being adopted and shall be continued in future which are as below.



SPCB

BY REGD POST



OFFICE OF THE  
STATE POLLUTION CONTROL BOARD, ODISHA

Parivesh Bhawan, A/118, Nilakantha Nagar, Unit-VIII,  
Bhubaneswar - 751 012

No. 25031 / Ind-II-NOC-5299 Date 30-11-11

OFFICE MEMORANDUM

in consideration of the application for obtaining Consent to Establish for Jindal Chromite Mines of M/s Jindal Stainless Ltd., the State Pollution Control Board has been pleased to convey its Consent to Establish under section 25 of Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981 for increase in Production of Chromite ore of quantity from 1,00,000 Ton/Annum to 2,15,000 Ton/Annum and additional COB Plant to increase chrome concentrate production from 36,000 Ton/Annum to 60,000 Ton/Annum with throughput 1,20,000 Ton/Annum (over mine lease hold area of 89.0 Ha.) At : Kaliapani, PO:Sukinda in the district of Jaipur with the following conditions.

GENERAL CONDITIONS:

1. This Consent to establish is valid for the ROM, product, method of mining and capacity mentioned in the application form. This order is valid for five years, which means the proponent shall commence mining activities for the proposal within a period of five years from the date of issue of this order. If the proponent fails to commence mining activities for the proposal within five years then a renewal of this consent to establish shall be sought by the proponent.
2. Adequate effluent treatment facilities are to be provided such that the quality of sewage and trade effluent satisfies the standards as prescribed under Environment Protection Rule, 1986 or as prescribed by the Central Pollution Control Board and/or State Pollution Control Board or otherwise stipulated in the special conditions.
3. All emission from the mining activities as well as the ambient air quality and noise shall conform to the standards as laid down under Environment (Protection) Act, 1986 or as prescribed by Central Pollution Control Board/State Pollution Control Board or otherwise stipulated in the special conditions.
4. Appropriate method of disposal of solid waste is to be adopted to avoid environmental pollution.



5. The mine shall comply to the provisions of Environment Protection Act, 1986 and the rules made there under with their amendments from time to time such as the Hazardous Waste (Management & Handling) Rules 1989, Hazardous Chemical Rules, /Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 etc. and amendments there under. The mine shall also comply to the provisions of Public Liability Insurance Act, 1991, if applicable.
6. The mine shall apply for grant of Consent to operate under section 25/26 of Water(Prevention & Control of Pollution)Act, 1974 & Air (Prevention & Control of Pollution)Act, 1981 at least 3 (three) months before the commencement of production and obtain Consent to Operate from this Board.
7. This consent to establish is subject to statutory and other clearances from Govt. of Odisha and/or Govt. of India, as and when applicable.

**SPECIAL CONDITIONS:**

1. The mine shall obtain environmental clearance as per the EIA notification 2006 and the proposed mining activity with COB Plant shall commence after obtaining environmental clearance from MoEF, Govt. of India.
2. A bank guarantee, commensurate with the production level will be taken by the Board for continuous satisfactory environmental compliance of the mine during the period for which consent to operate is granted as and where required.
3. The proponent shall not use ground water. They shall submit a proposal for use of surface water and obtain permission from the concerned authority for the same. This consent to establish is subject to permission for use of surface water from the concerned authority.
4. The proponent shall obtain forest clearance for forest land involved in mining lease area and this consent to establish is subject to forest clearance. No change shall be undertaken in the site before obtaining forest clearance under Forest (Conservation) Act, 1980 for forest land in the mining lease area.
5. The production will be achieved through following equipment & machineries.

Sl.No.	Equipment	Nos. Required
1.	Excavator	6
2.	Wagon drill	5
3.	Dumper	27
4.	Water Pump	4
5.	Air Compressor	6
6.	Water tanker	2
7.	Jeep	4

6. No change in mining technology and scope of working shall be made without prior approval of the Board.



7. Top soil should be stacked separately with proper slope at earmarked site(s) with adequate measures and shall be used for reclamation and rehabilitation of mined out areas.
8. Concurrent back-filling should be started from the fourth year of operation. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining. Compliance status in this regard shall be submitted to the Ministry of Environment & Forests with a copy to the Board on yearly basis.
9. Dimension of the retaining wall at the toe of dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data. The detail specification shall be worked out and submitted to the Board within two months.
10. At stockpile, loading point and COB Plant area a network of drains shall be constructed at a depth of 1.5 meter below the lowest level on the sites parallel to the stockpile area with interconnected box culverts. The sloping of surface shall be given towards the drain so that surface water will only infiltrate into the drain.
11. Surface run-off contaminated with  $\text{Cr}^{+6}$  from all sources including tailing pond area shall be routed through ETP of adequate capacity (31080  $\text{m}^3/\text{hr}$ ) to meet prescribed standard of SS-50 mg/l and  $\text{Cr}^{+6}$  of 0.1 mg/l before discharge into natural stream/water courses during monsoon.
12. Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells. The monitoring should be done four times a year in pre-monsoon (April/May), Monsoon (August), Post-monsoon (November) and winter (January) seasons. Data thus collected should be submitted to the Board quarterly. Following heavy metals need to be monitored at least once during post monsoon period whose values shall not exceed as per following standard.

i)	Cd	-	2.0 mg/l
ii)	Cr+6	-	0.10 mg/l
iii)	Copper	-	3.0 mg/l
iv)	Lead	-	0.10 mg/l
v)	Mercury	-	0.01 mg/l
vi)	Nickel	-	0.50 mg/l
vii)	Zinc	-	5.0 mg/l

13. Domestic effluent shall be discharged to soak pit via septic tank constructed as per BIS specification.
14. Wastewater (workshop, wastewater from check dams or any other discharge leaving lease boundary of the mine) should be properly collected, treated so as to conform the prescribed standard i.e. pH = 6 - 9.0, SS = 50 mg/l, & O & G = 5 mg/l  $\text{Cr}^{+6}$  = 0.1 mg/l as amended from time to time. Oil and grease trap should be installed before discharge of effluents from workshop.
15. Mine drainage water shall be treated in a full fledged effluent treatment plant and treated effluent shall be partly used in beneficiation plant, dust suppression and balance shall be discharged to Damsala nala after conforming to the standard prescribed by the Board i.e. pH = 6 - 9.0, Total Suspended Solids = 50 mg/l & Oil & Grease = 5 mg/l and  $\text{Cr}^{+6}$  = 0.1 mg/l.
16. The effluent generated from COB Plant shall be taken to clarifier and clarifier overflow shall be completely recycled in the process. Underflow of clarifier



shall be taken to tailing pond and tailing pond overflow will be collected in a storage tank and reused in beneficiation process. In no case the mine shall discharge effluent from COB Plant and Tailing pond area to outside the ML area.

17. The mine shall provide adequate tailing pond with life period of minimum 5 years for disposal of tailings as life of beneficiation plant is for 5 years. The bottom and inner side of the embankment shall be adequately compacted and have an impervious HDPE liner of at least 1.5 mm thickness to prevent any ground water contamination.
18. The mine shall provide adequate free board in tailing pond to prevent overflow of surface run-off during rainy season.
19. The mine shall explore possibility of reuse of tailings in tile and brick making.
20. Six ambient air quality monitoring stations for 24 hours operation should be established in the core zone as well as in the buffer zone for RPM, SPM, SO<sub>2</sub>, NO<sub>x</sub> and CO monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.
21. Data on ambient air quality (PM<sub>10</sub>, PM<sub>2.5</sub>, SPM, SO<sub>2</sub>, NO<sub>x</sub> and CO) should be regularly submitted to the State Pollution Control Board once in six months.
22. Adequate measures to control fugitive emission shall be taken during loading and transportation of minerals, haul roads, drilling, excavation, ore stack pile and truck loading areas.
23. The mine shall provide dry fog as well as bag filter in the crushing and screening and other potential dust generating points of COB plant to control fugitive emission.
24. During transportation of ore by trucks through public roads, the truck shall be properly covered with tarpaulin sheets / leak proof coverings and shall ply at safe speed. Regular collection of spilled over raw material from haul roads shall be practiced to prevent the generation of dust due to movement of dumpers/truck.
23. Dust suppression on mine haul roads, active OB dumps and mine working benches shall be done by spraying water through water sprinklers along with chemical binders/wetting agents at frequent interval in order to reduce water consumption and to improve retention and re-absorption capacity of water. The additive chemicals should not have any adverse impact on the environment. Water sprinklers of fixed type shall also be provided at the mine HEMM maintenance shop, other service centers and approach roads from mines to raw material handling & product handling area to prevent the generation of dust to be air borne.
24. A Green belt of adequate width and density preferably with local species along the periphery of the mine shall be raised so as to provide protection against particulates and noise. It must be ensured that at least 33% of the total land area shall be under permanent green cover. The proponent shall ensure the maintenance of green belt throughout the year and for all time to come. It is advised that they may engage professionals in this field for creation and maintenance of the green belt. An action plan for this purpose shall be prepared and shall be submitted accordingly.



25. Drill should be wet operated or with dust extractors and controlled blasting should be practices. Pre-wetting of blasting site shall be practiced.
26. Drilling operation need to be conducted as per the recommendations of the manufacturer using sharp drill bits. Applying sufficient thrust on the drill bit and providing dust hood at the mouth of drill hole collar to prevent the generation of dust to be air-borne.
27. Optimized blasting methods shall be practiced i.e. matching the explosive to the drilling pattern, rock characteristics and proper stemming of the holes. Site specific drilling pattern, optimum charging of explosives, adequate stemming and introduction of delays shall be practiced.
28. Noise barriers shall be constructed between sources and affected areas (thick belt of trees around mine boundaries, waste dumps, hills and mountainous land forms can act as such barrier).
29. The operation of the noise generating units shall be suspended between 6PM and 6AM.
30. Adequate measures shall be taken for control of noise levels in the work environment of mine area so that noise levels at the boundary line of ML area shall not exceed 75 dB(A) during day time ( 6 AM to 10 AM) and 70 dB(A) during night time (10 PM to 6 AM).
31. The waste dumps shall be located away from the natural nallahs, rivers in the area and on an impervious & non-mineralised area to minimize the water pollution.
32. The completed out slope of the waste dumps should not exceed 37degrees from horizontal to avoid excessive erosion and easy vegetation.
33. Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.
34. A separate environmental management cell with suitable qualified personnel should be set up under the control of a Senior Executive, who will report directly to the Head of the organization.
35. All efforts shall be taken to protect the existing water bodies in the surrounding. A definite plan in this regard shall be submitted to the Board within 06 month from the date of issue of this order.
36. This consent to establish is granted subject to grant of Explosive License from competent Authority. The valid Explosive License must be submitted to this Board while applying for consent to operate to this Board.
37. The Board may impose further conditions or modify the conditions stipulated in this order during installation and/or at the time of obtaining consent to operate and may revoke this clearance in case the stipulated conditions are not implemented.
38. The above conditions will be enforced, inter-alia, under the provisions of the water (Prevention & Control of pollution) Act, 1974 and Air (Prevention & Control of Pollution) Act, 1981 and Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rule.

*[Signature]*  
MEMBER SECRETARY *[Signature]*



To,  
The Resident Director,  
Jindal Chromite Mines of M/s Jindal Stainless Ltd.,  
6<sup>th</sup> Floor, IDCO Tower, Janpath,  
Bhubaneswar - 751022  
Dist: Khurda (Odisha)

Memo No. 20032 /Dt. 20.11.11

Copy forwarded to :

1. Secretary Steels & Mines, Govt. of Orissa, Bhubaneswar
2. Collector, Jaipur
3. District Industries Centre, Jaipur
4. Sr. Env. Scientist (Mine),
5. Regional Officer, S.P.C. Board, Cuttack
6. DFO, Jaipur
7. Copy to Guard file

*[Signature]*  
SR. ENV. ENGINEER (N) *[Signature]*

*[Signature]*

2670  
2220  
2361  
7251





CONSENT ORDER  
JINDAL CHROMITE MINES OF M/S. JINDAL STAINLESS LIMITED

Page 1 of 12

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](mailto:paribesh1@ospcbboard.org), Website: [www.ospcbboard.org](http://www.ospcbboard.org)

### CONSENT ORDER

No. 4258 / IND-I-CON-2562 Dt. 20.03.17

CONSENT ORDER NO. 1150

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. 1462378, Dated 30.12.2016 & online reply dated 07.3.2017

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: JINDAL CHROMITE MINES OF M/S. JINDAL STAINLESS LIMITED

Name of the Occupier & Designation: SRI SUBRATA BHATTACHARYA,  
WHOLE TIME DIRECTOR,

Address: AT/PO: KALIAPANI, DIST: JAJPUR

This consent order is valid for the period up to 31.03.2018.

This consent order supersedes the earlier consent order issued vide letter No. 15742 dated 26.10.2016.

#### Details of Production

Sl. No	Name of the mineral	Quantity
01.	Chrome Ore and concentrate	0.1 MTPA

#### Details of Mineral Handling/Processing Plants

01.	Operation of COBP-I of capacity to produce 35,000 TPA of concentrated ore
02.	Operation of COBP-II of capacity to produce 24,000 TPA of concentrated ore

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 therein.





By speed post/Email

Tel : 0674-2564033  
FAX : 0674-2564033/2564573  
EPABX : 2561909/2562847  
E-mail: paribesh1@ospcboard.org  
Website: www.ospcboard.org

## STATE POLLUTION CONTROL BOARD, ODISHA

[DEPARTMENT OF FOREST & ENVIRONMENT, GOVERNMENT OF ODISHA]  
Paribesh Bhawan, A/118, Nilakantha Nagar, Unit - VIII  
Bhubaneswar - 751 012, INDIA

No. 3869 / Ind.I-Con- 2562

Dated 29.03.18

To

The Mines Manager,  
Kaliapani Chromite Mine  
M/s. Jindal Stainless Ltd  
At/ Po: Kaliapani,  
Dist: Jajpur, PIN-755047.  
E-mail: Jindal\_mines@yahoo.com

Sub: Consent to operate of Kaliapani Chromite Mines of M/s. Jindal Stainless Ltd ....  
Regarding.

Ref: i. Your Online Application No. 1944235 dated 28-12-2017  
ii. MoEF & CC, Govt. of India Letter No. J-11015/163/2016-IA.II(M) dated 21.2.2018  
Sir,

You have made an application for consent to operate to the Board for the year 2018-19. While examining your case of consent to operate, it was found that MoEF & CC, Govt. of India has directed you to close down the mining operation vide their Letter dated 21.2.2018, since, you exceeded the production beyond the approved limit specified in the Environmental Clearance dated 13.02.2001.

Therefore, your application for consent to operate for the period 2018-19 cited under reference cannot be considered. You are requested to revert back to us after obtaining necessary permission from MoEF & CC, Govt. of India for resumption of mining operation.

Yours faithfully,

MEMBER SECRETARY

Memo No. \_\_\_\_\_ / Dt. \_\_\_\_\_  
Copy to Regional Officer, SPC Board, Kalinganagar, Odisha for information and necessary action.

SR. ENV. ENGINEER(L-I)



Jindal Chromite Mines												
Traffic Density Study Report												
Station	Working Day				Non Working Day				Market Day			
	Result	Light Vehicle	Medium Vehicle	Heavy Vehicle	Light Vehicle	Medium Vehicle	Heavy Vehicle	Light Vehicle	Medium Vehicle	Heavy Vehicle	Light Vehicle	Heavy Vehicle
Mines Main Gate	Total Nos	2715	660	1018	1927	1020	1150	3853	753	741		
	Avg Traffic Load/Hr	113.12	27.5	42.41	80.29	42.5	47.91	160.54	31.37	30.87		
	Passenger Car Unit(PCU) Factor	0.75	2	3.7	0.75	2	3.7	0.75	2	3.7		
	PCU/Hr	84.84	55	156.94	60.21	85	177.29	120.4	62.75	114.23		
Kalrangiatla	Total Nos	6435	1603	2515	2618	2265	2193	7995	2358	2438		
	Avg Traffic Load/Hr	268.12	66.79	104.79	109.08	94.37	91.37	333.12	98.25	101.58		
	Passenger Car Unit(PCU) Factor	0.75	2	3.7	0.75	2	3.7	0.75	2	3.7		
	PCU/Hr	201.09	133.58	387.72	81.81	188.74	338.06	249.84	196.5	375.85		
Kansa	Total Nos	1392	439	1051	2034	803	892	1362	327	933		
	Avg Traffic Load/Hr	58	18.29	43.79	84.75	33.45	37.16	56.75	13.62	38.87		
	Passenger Car Unit(PCU) Factor	0.75	2	3.7	0.75	2	3.7	0.75	2	3.7		
	PCU/Hr	43.5	36.58	162.02	63.56	66.9	137.51	42.56	27.25	143.83		

Good 22/10/2022



## Mitra S.K. Private Limited

Building No. P- 48, Udayan Industrial Estate,  
3, Pagladanga Road,  
Kolkata 700015, West Bengal  
Tel. : 91 33 23230072. Fax : 91 33 23230078.  
Email : [mitrasklab@yahoo.com](mailto:mitrasklab@yahoo.com)  
Web : [www.mitrask.com](http://www.mitrask.com)



TC-6950

**TEST REPORT**

ULR: TC-695021000002367F

**Name & Address of the Customer:**

Jindal Stainless Limited,  
Kaliapani Chromite Mines  
Jajpur-755028, Odisha.

**Report No.**

:C/2021/4563

**Date**

:29.11.21

**Sample No.**

:MSK/KOL/2021/4437

**Date of receipt of sample**

:17.11.21

**Date(s) of performance**

:17.11.21-29.11.21

**Ref. No. & Date**

:P.O No.: 6200006415 Date: 29.04.19

**Discipline**

:Chemical

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	:Water & Residue in Water
2	Description of sample(As declared by customer)	:Ground Water
3	Date of sampling	:16.11.21
4	Unique Identification	:Near Store
5	Place of sampling	:Jindal Stainless Limited, Kaliapani Chromite Mines, Jajpur-755028, Odisha
6	Sampling Plan & Procedures used	:As per FSSAI Manual
7	Environmental conditions during sampling & Transport Condition	:2 <sup>0</sup> C-5 <sup>0</sup> C
8	Identification of the personnel performing sampling	:Mr. Akram Khan

**Report prepared by:**

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

**Report Verified By**

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

**Report Sign By Authorized Signatory**

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In-charge

- The results relate only to the item(s) tested.
- This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.
- The reserved part of sample(s), except perishable sample(s), shall be retained for 15 days & 1 year (Air) from the date of issue of the Test Report.
- The reserved part of sample(s), Soil, Solid & Liquid Waste shall be retained for 15 days (as per CPCB guideline) from the date of issue of the Test Report.
- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis



# Mitra S.K.Private Limited

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3, Pagladanga Road,  
Kolkata 700015, West Bengal  
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Email : [mitrasklab@yahoo.com](mailto:mitrasklab@yahoo.com)  
Web : [www.mitrask.com](http://www.mitrask.com)

Doc No MSK/GEN/19/07



Report No. : C/2021/4563  
Sample No. : MSK/KOL/2021/4437

ULR: TC-695021000004563F

## Analysis Result

**Table 1: Organoleptic and Physical Parameters as per IS 10500:2012**

Sl. No.	Characteristic	Requirement (Acceptable Limit)	Permissible limit in the absence of alternate Source	Method of Test	Result
1	Colour in Hazen unit	5	15	IS 3025 (Part 4)	BDL(DL:1.0)
2	Odour	Agreeable	Agreeable	IS 3025 (Part 5)	Agreeable
3	Turbidity in N.T. U	1	5	IS 3025 (Part 10)	BDL(DL:1.0)
4	Total Dissolved Solids in mg/l	500	2000	IS 3025 (Part 16)	184.0
5	pH value at 25°C	6.5-8.5	No Relaxation	IS 3025 (Part 11)	7.99

**Table2: General Parameters- Concerning Substances Undesirable in Excessive Amounts as per IS 10500:2012**

Sl. No.	Characteristic	Requirement (Acceptable Limit)	Permissible limit in the absence of alternate Source	Method of Test	Result
1	Aluminium (as Al) in mg/l	0.03	0.2	IS 3025(Part-2)	BDL(DL:0.01)
2	Ammonia (as total ammonia- N) in mg/l	0.5	No Relaxation	IS 3025 (Part 34)	BDL(DL:0.1)
3	Barium (as Ba) in mg/l	0.7	No Relaxation	IS 3025(Part-2)	BDL(DL:0.1)
4	Boron (as B) in mg/l	0.5	1.0	IS 3025(Part-2)	BDL(DL:0.3)
5	Calcium (as Ca) in mg/l	75	200	IS 3025 (Part 40)	39.6
6	Chloride (as Cl) in mg/l	250	1000	IS 3025(Part32)	14.70
7	Copper (as Cu) in mg/l	0.05	1.5	IS 3025(Part-2)	BDL(DL:0.02)
8	Fluoride (as F) in mg/l	1.0	1.5	IS 3025 (Part 60)	BDL(DL:0.2)
9	Free Residual Chlorine in mg/l	0.2	1.0	IS 3025 (Part 26)	BDL(DL:0.1)
10	Iron (as Fe) in mg/l	0.3	No Relaxation	IS 3025 (Part 53)	BDL(DL:0.05)
11	Magnesium (as Mg) in mg/l	30	100	IS 3025 (Part 46)	14.26
12	Manganese (as Mn) in mg/l	0.1	0.3	IS 3025(Part-2)	BDL(DL:0.02)
13	Nitrate (as NO <sub>3</sub> ) in mg/l	45	No Relaxation	IS 3025 (Part 34)	BDL(DL:0.4)
14	Selenium (as Se) in mg/l	0.01	No Relaxation	IS 3025(Part-2)	BDL(DL:0.005)
15	Silver (as Ag) in mg/l	0.1	No Relaxation	IS 3025(Part-2)	BDL(DL:0.005)
16	Sulphate (as SO <sub>4</sub> ) in mg/l	200	400	IS 3025 (Part 24)	2.10
17	Sulphide (as H <sub>2</sub> S) in mg/l	0.05	No Relaxation	IS 3025 (Part 29)	BDL(DL:0.02)
18	Total Alkalinity (as CaCO <sub>3</sub> ) in mg/l	200	600	IS 3025 (Part 23)	151.5
19	Total Hardness (as CaCO <sub>3</sub> ) in mg/l	200	600	IS 3025 (Part 21)	158.40
20	Zinc (as Zn) in mg/l	5	15	IS 3025(Part-2)	BDL(DL:0.02)

BDL = Below Detection Limit, DL = Detection Limit

### Report prepared by:

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

### Report Verified By

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In-charge



**Mitra S.K.Private Limited**

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**Report No.** : C/2021/4563  
**Sample No.** : MSK/KOL/2021/4437

**ULR: TC-695021000004563F****ANALYSIS RESULT****Table 3: Parameters Concerning Toxic Substances as per IS 10500:2012**

Sl. No.	Characteristic	Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternate Source	Method of Test, Ref to	Result
1	Cadmium (as Cd) in mg/l	0.003	No Relaxation	IS 3025(Part-2)	BDL(DL:0.001)
2	Lead (as Pb) in mg/l	0.01	No Relaxation	IS 3025(Part-2)	BDL(DL:0.005)
3	Mercury (as Hg) in mg/l	0.001	No Relaxation	IS 3025(Part-48)	BDL(DL:0.0002)
4	Molybdenum (as Mo) in mg/l	0.07	No Relaxation	IS 3025(Part-2)	BDL(DL:0.05)
5	Nickel (as Ni) in mg/l	0.02	No Relaxation	IS 3025(Part-2)	BDL(DL:0.01)
6	Total Arsenic (as As) in mg/l	0.01	0.05	IS 3025(Part-2)	BDL(DL:0.005)
7	Total Chromium (as Cr) in mg/l	0.05	No Relaxation	IS 3025(Part-2)	BDL(DL:0.01)

**Extra parameter as per Work Order**

Sl. No.	Characteristic	Requirement (Acceptable Limit)	Permissible limit in the absence of alternate Source	Method of Test	Result
1	Chromium (as Cr <sup>+6</sup> ) in mg/l	-	-	IS 3025 (Part 52)	BDL(DL:0.01)

**BDL = Below Detection Limit, DL = Detection Limit**

----- END -----

**Report prepared by:**

Signature : *[Signature]*  
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

**Report Verified By**

Signature : *[Signature]*  
Name : Ms. Paulami Dutta  
Designation : Executive QA

**Report Sign By Authorized Signatory**

Signature : *[Signature]*  
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In-charge



# Mitra S.K. Private Limited

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Web : [www.mitrask.com](http://www.mitrask.com)

Doc No MSK/GEN/19/07



TC-6950

## TEST REPORT

**Name & Address of the Customer:**  
Jindal Stainless Limited,  
Kaliapani Chromite Mines  
Jajpur-755028, Odisha.

**Report No.**

**Date**

**Sample No.**

**Date of receipt of sample**

**Date(s) of performance**

**Ref. No. & Date**

**Discipline**

**ULR: TC-695021000004563F**

:C/2021/4563

:29.11.21

:MSK/KOL/2021/4437

:17.11.21

:17.11.21-18.11.21

:P.O No.: 6200006415 Date: 29.04.19

:Biological

*We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:*

1	Group	: Water
2	Description of sample(As declared by customer)	: Ground Water
3	Date of sampling	: 16.11.21
4	Unique Identification	: Near Store
5	Place of sampling	: Jindal Stainless Limited, Kaliapani Chromite Mines, Jajpur-755028, Odisha.
6	Sampling Plan & Procedures used	: As per FSSAI Manual
7	Environmental conditions during sampling & Transport Condition	: 2 <sup>0</sup> C-5 <sup>0</sup> C
8	Identification of the personnel performing sampling	: Mr. Akram Khan

### Analysis Result

#### Bacteriological Quality of Ground Water as per IS 10500:2012 Amendment No.2 September 2018

Sl. No.	Test Parameter	Limit	Method of Test	Result
1.	<i>E. coli</i> /100 ml	Not Detectable	IS 15185:2016	Not Detected
2.	Total Coliform Bacteria/100 ml	Not Detectable	IS 15185:2016	Not Detected

END

#### Report prepared by

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

#### Report Verified By

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

#### Report Sign By Authorized Signatory

Signature :   
Name : Mr. Sukanta Palui  
Designation : Executive Microbiologist

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- The reserved part of sample(s), Soil, Solid & Liquid Waste shall be retained for 15 days (as per CPCB guideline) from the date of issue of the Test Report.
- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis



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Email : [mitrasklab@yahoo.com](mailto:mitrasklab@yahoo.com)  
Web : [www.mitrask.com](http://www.mitrask.com)

Doc No MSK/GEN/19/07



## TEST REPORT

ULR: TC-695021000004567F

Name & Address of the Customer:	Report No.	: C/2021/4567
Jindal Stainless Limited,	Date	: 29.11.21
Kaliapani Chromite Mines	Sample No.	: MSK/KOL/2021/4441
Jajpur-755028, Odisha.	Date of receipt of sample	: 17.11.21
	Date(s) of performance	: 17.11.21-29.11.21
	Ref. No. & Date	: P.O No.: 6200008210 Date: 06.01.21
	Discipline	: Chemical

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	: Pollution & Environment
2	Description of sample (As declared by customer)	: Water
3	Date of sampling	: 16.11.21
4	Unique Identification	: Surface Water (Damsal Nullah UP Stream)
5	Place of sampling	: Jindal Stainless Limited, Kaliapani Chromite Mines, Jajpur-755028, Odisha.
6	Sampling Plan & Procedures used	: APHA 23 <sup>rd</sup> edition, 2017, 1060B, C
7	Environmental conditions during sampling & Transport Condition	: Maintained
8	Identification of the personnel performing sampling	: Mr. Akram Khan

### Report prepared by:

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

### Report Verified by

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign by Authorized Signatory

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge

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- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis



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Web : [www.mitrask.com](http://www.mitrask.com)

Doc No MSK/GEN/19/07



TC-6950

Report No. : C/2021/4567  
Sample No. : MSK/KOL/2021/4441

ULR: TC-695021000004567F

## ANALYSIS RESULT

SL. No.	Test Parameter	Test Method	Result
1	pH at 25°C	APHA 23 <sup>rd</sup> edition, 4500-H-B	7.80
2	Colour in Hazen	APHA 23 <sup>rd</sup> edition, 2120B	<1.0
3	Odour	APHA 23 <sup>rd</sup> edition, 2150B	Agreeable
4	Total Suspended Solid as TSS in mg/l	APHA 23 <sup>rd</sup> edition, 2540D	20
5	TDS in mg/l	APHA 23 <sup>rd</sup> edition, 2540C	102
6	Temperature °C	IS 3025 (Part 9)	25
7	Oil & Grease in mg/l	APHA 23 <sup>rd</sup> edition, 5520B	<1.4
8	Residual Free Chlorine in mg/l	IS:3025(Part-26)	<0.1
9	NH <sub>3</sub> N in mg/l	APHA 23 <sup>rd</sup> edition, 4500 NH <sub>3</sub> - F	<0.1
10	TKN in mg/l	APHA 23 <sup>rd</sup> edition, 4500 N <sub>org</sub> B	<0.3
11	Bio-Chemical Oxygen Demand as BOD in mg/l	APHA 23 <sup>rd</sup> edition, 5210B	<2.0
12	Chemical Oxygen Demand as COD in mg/l	APHA 23 <sup>rd</sup> edition, 5220B	8.0
13	Fluoride as F in mg/l	APHA 23 <sup>rd</sup> edition, 4500 F-C	0.24
14	Iron as Fe in mg/l	APHA 23 <sup>rd</sup> edition, 3500 Fe B	1.9
15	Nitrate as NO <sub>3</sub> in mg/l	APHA 23 <sup>rd</sup> edition, 4500 NO <sub>3</sub> E	<0.5
16	Hexavalent Chromium as Cr+6 in mg/l	APHA 23 <sup>rd</sup> edition, 3500 Cr B	<0.01
17	Sulphide as S <sup>-2</sup> in mg/l	APHA 23 <sup>rd</sup> edition, 4500 S-D	<0.1
18	Dissolved Phosphate as P in mg/l	APHA 23 <sup>rd</sup> Edition, 4500P-B, D	<0.05
19	Bio Assay Test	IS 6582 (P-2)	All fish survived in 100% effluent water after 96 hrs (TF=1)

### Report prepared by:

Signature : *Asim*  
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

### Report Verified By

Signature : *Paulami*  
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature : *Soumyadeep*  
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge



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Email : [mitrasklab@yahoo.com](mailto:mitrasklab@yahoo.com)  
Web : [www.mitrask.com](http://www.mitrask.com)

Doc No MSK/GEN/19/07



Report No. : C/2021/4567  
Sample No. : MSK/KOL/2021/4441

ULR: TC-695021000004567F

## Analysis Result

SL. No.	Test Parameter	Test Method	Result
1.	As in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.005
2.	Pb in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
3.	Cd in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
4.	Cu in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
5.	Zn in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
6.	Se in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.005
7.	Ni in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
8.	Hg in mg/l	IS 3025(Part 48)	<0.001
9.	V in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
10.	Total Cr in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
11.	Mn in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05

### Report prepared by:

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

### Report Verified By

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge



**Mitra S. K. Private Limited**

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**Report No.** : C/2021/4567  
**Sample No.** : MSK/KOL/2021/4441

**ANALYSIS RESULT**

SL. No.	Test Parameter	Test Method	Result
1	Free NH <sub>3</sub> in mg/l	APHA 23 <sup>rd</sup> edition, 4500 NH <sub>3</sub> -B	<0.1

End

**Report prepared by:**

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

**Report Verified By**

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

**Report Sign By Authorized Signatory**

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge



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Web : [www.mitrask.com](http://www.mitrask.com)

Doc No MSK/GEN/19/07



## TEST REPORT

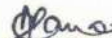
ULR: TC-695021000004566F

Name & Address of the Customer:	Report No.	: C/2021/4566
Jindal Stainless Limited,	Date	: 29.11.21
Kaliapani Chromite Mines	Sample No.	: MSK/KOL/2021/4440
Jajpur-755028, Odisha.	Date of receipt of sample	: 17.11.21
	Date(s) of performance	: 17.11.21-29.11.21
	Ref. No. & Date	: P.O No.: 6200008210 Date: 06.01.21
	Discipline	: Chemical


We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	: Pollution & Environment
2	Description of sample (As declared by customer)	: Water
3	Date of sampling	: 16.11.21
4	Unique Identification	: Surface Water (Quarry No-2)
5	Place of sampling	: Jindal Stainless Limited, Kaliapani Chromite Mines, Jajpur-755028, Odisha.
6	Sampling Plan & Procedures used	: APHA 23 <sup>rd</sup> edition, 2017, 1060B, C
7	Environmental conditions during sampling & Transport Condition	: Maintained
8	Identification of the personnel performing sampling	: Mr. Akram Khan

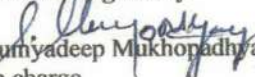
### Report prepared by:

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

### Report Verified by

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign by Authorized Signatory

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab in charge

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- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis





TC-6950

Report No. : C/2021/4566  
Sample No. : MSK/KOL/2021/4440

ULR: TC-695021000004566F

## ANALYSIS RESULT

SL. No.	Test Parameter	Test Method	Result
1	pH at 25°C	APHA 23 <sup>rd</sup> edition, 4500-H-B	8.10
2	Colour in Hazen	APHA 23 <sup>rd</sup> edition, 2120B	<1.0
3	Odour	APHA 23 <sup>rd</sup> edition, 2150B	Agreeable
4	Total Suspended Solid as TSS in mg/l	APHA 23 <sup>rd</sup> edition, 2540D	<2.5
5	TDS in mg/l	APHA 23 <sup>rd</sup> edition, 2540C	122
6	Temperature °C	IS 3025 (Part 9)	25
7	Oil & Grease in mg/l	APHA 23 <sup>rd</sup> edition, 5520B	<1.4
8	Residual Free Chlorine in mg/l	IS:3025(Part-26)	<0.1
9	NH <sub>3</sub> N in mg/l	APHA 23 <sup>rd</sup> edition, 4500 NH <sub>3</sub> - F	<0.1
10	TKN in mg/l	APHA 23 <sup>rd</sup> edition, 4500 N-org B	<0.3
11	Bio-Chemical Oxygen Demand as BOD in mg/l	APHA 23 <sup>rd</sup> edition, 5210B	<2.0
12	Chemical Oxygen Demand as COD in mg/l	APHA 23 <sup>rd</sup> edition, 5220B	<4.0
13	Fluoride as F in mg/l	APHA 23 <sup>rd</sup> edition, 4500 F-C	0.32
14	Iron as Fe in mg/l	APHA 23 <sup>rd</sup> edition, 3500 Fe B	<0.05
15	Nitrate as NO <sub>3</sub> in mg/l	APHA 23 <sup>rd</sup> edition, 4500NO <sub>3</sub> E	<0.5
16	Hexavalent Chromium as Cr+6 in mg/l	APHA 23 <sup>rd</sup> edition, 3500 Cr B	<0.01
17	Sulphide as S <sup>2-</sup> in mg/l	APHA 23 <sup>rd</sup> edition, 4500 S-D	<0.1
18	Dissolved Phosphate as P in mg/l	APHA 23 <sup>rd</sup> Edition, 4500P-B, D	<0.05
19	Bio Assay Test	IS 6582 (P-2)	All fish survived in 100% effluent water after 96 hrs (TF=1)

### Report prepared by:

Signature : *[Signature]*  
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

### Report Verified By

Signature : *[Signature]*  
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature : *[Signature]*  
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge





**Report No.** : C/2021/4566  
**Sample No.** : MSK/KOL/2021/4440

**ULR: TC-695021000004566F**

## Analysis Result

SL. No.	Test Parameter	Test Method	Result
1.	As in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.005
2.	Pb in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
3.	Cd in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
4.	Cu in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
5.	Zn in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
6.	Se in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.005
7.	Ni in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
8.	Hg in mg/l	IS 3025(Part 48)	<0.001
9.	V in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
10.	Total Cr in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
11.	Mn in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05

### Report prepared by:

Signature : *[Signature]*  
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

### Report Verified By

Signature : *[Signature]*  
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature : *[Signature]*  
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab. In charge



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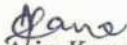
**Report No.** : C/2021/4566  
**Sample No.** : MSK/KOL/2021/4440

## ANALYSIS RESULT

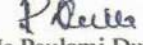
SL. No.	Test Parameter	Test Method	Result
1	Free NH <sub>3</sub> in mg/l	APHA 23 <sup>rd</sup> edition, 4500 NH <sub>3</sub> . B	<0.1

End


### Report prepared by:

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

### Report Verified By

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge



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Web : [www.mitrask.com](http://www.mitrask.com)

Doc No MSK/GEN/19/07



TC-6950

## TEST REPORT

ULR: TC-695021000004568F

Name & Address of the Customer:	Report No.	: C/2021/4568
Jindal Stainless Limited,	Date	: 29.11.21
Kaliapani Chromite Mines	Sample No.	: MSK/KOL/2021/4442
Jajpur-755028, Odisha.	Date of receipt of sample	: 17.11.21
	Date(s) of performance	: 17.11.21-29.11.21
	Ref. No. & Date	: P.O No.: 6200008210 Date: 06.01.21
	Discipline	: Chemical

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	: Pollution & Environment
2	Description of sample (As declared by customer)	: Water
3	Date of sampling	: 16.11.21
4	Unique Identification	: Surface Water (Damsal Nullah Down Stream)
5	Place of sampling	: Jindal Stainless Limited, Kaliapani Chromite Mines, Jajpur-755028, Odisha.
6	Sampling Plan & Procedures used	: APHA 23 <sup>rd</sup> edition, 2017, 1060B, C
7	Environmental conditions during sampling & Transport Condition	: Maintained
8	Identification of the personnel performing sampling	: Mr. Akram Khan

### Report prepared by:

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

### Report Verified by

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign by Authorized Signatory

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge

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- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis





**Report No.** : C/2021/4568  
**Sample No.** : MSK/KOL/2021/4442

**ULR: TC-695021000004568F**

## ANALYSIS RESULT

SL. No.	Test Parameter	Test Method	Result
1	pH at 25°C	APHA 23 <sup>rd</sup> edition, 4500-H-B	7.95
2	Colour in Hazen	APHA 23 <sup>rd</sup> edition, 2120B	<1.0
3	Odour	APHA 23 <sup>rd</sup> edition, 2150B	Agreeable
4	Total Suspended Solid as TSS in mg/l	APHA 23 <sup>rd</sup> edition, 2540D	26
5	TDS in mg/l	APHA 23 <sup>rd</sup> edition, 2540C	128
6	Temperature °C	IS 3025 (Part 9)	25
7	Oil & Grease in mg/l	APHA 23 <sup>rd</sup> edition, 5520B	<1.4
8	Residual Free Chlorine in mg/l	IS:3025(Part-26)	<0.1
9	NH <sub>3</sub> N in mg/l	APHA 23 <sup>rd</sup> edition, 4500 NH <sub>3</sub> - F	<0.1
10	TKN in mg/l	APHA 23 <sup>rd</sup> edition, 4500 N <sub>org</sub> B	<0.3
11	Bio-Chemical Oxygen Demand as BOD in mg/l	APHA 23 <sup>rd</sup> edition, 5210B	3.2
12	Chemical Oxygen Demand as COD in mg/l	APHA 23 <sup>rd</sup> edition, 5220B	12
13	Fluoride as F in mg/l	APHA 23 <sup>rd</sup> edition, 4500 F-C	0.18
14	Iron as Fe in mg/l	APHA 23 <sup>rd</sup> edition, 3500 Fe B	2.9
15	Nitrate as NO <sub>3</sub> in mg/l	APHA 23 <sup>rd</sup> edition, 4500 NO <sub>3</sub> E	1.4
16	Hexavalent Chromium as Cr+6 in mg/l	APHA 23 <sup>rd</sup> edition, 3500 Cr B	<0.01
17	Sulphide as S <sup>2-</sup> in mg/l	APHA 23 <sup>rd</sup> edition, 4500 S-D	<0.1
18	Dissolved Phosphate as P in mg/l	APHA 23 <sup>rd</sup> Edition, 4500P-B, D	<0.05
19	Bio Assay Test	IS 6582 (P-2)	All fish survived in 100% effluent water after 96 hrs (TF=1)

### Report prepared by:

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

### Report Verified By

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge





**Report No.** : C/2021/4568  
**Sample No.** : MSK/KOL/2021/4442

**ULR: TC-695021000004568F**

## Analysis Result

SL. No.	Test Parameter	Test Method	Result
1.	As in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.005
2.	Pb in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
3.	Cd in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
4.	Cu in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
5.	Zn in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
6.	Se in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.005
7.	Ni in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
8.	Hg in mg/l	IS 3025(Part 48)	<0.001
9.	V in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
10.	Total Cr in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
11.	Mn in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05

### Report prepared by:

Signature : *Asim Kumar Jana*  
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

### Report Verified By

Signature : *Paulami Dutta*  
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature : *Dr. Soumyadeep Mukhopadhyay*  
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge



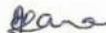
Report No. : C/2021/4568  
Sample No. : MSK/KOL/2021/4442

## ANALYSIS RESULT


SL. No.	Test Parameter	Test Method	Result
1	Free NH <sub>3</sub> in mg/l	APHA 23 <sup>rd</sup> edition, 4500 NH <sub>3</sub> -B	<0.1

End


### Report prepared by:

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

### Report Verified By

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge



# Mitra S. K. Private Limited

Building No. P- 48, Udayan Industrial Estate,  
3, Pagladanga Road,  
Kolkata 700015, West Bengal  
Tel. : 91 33 23230072. Fax : 91 33 23230078.  
Email : [mitrasklab@yahoo.com](mailto:mitrasklab@yahoo.com)  
Web : [www.mitrask.com](http://www.mitrask.com)

Doc No MSK/GEN/19/07



TC-6950

## TEST REPORT

ULR: TC-695021000004564F

### Name & Address of the Customer:

Jindal Stainless Limited,  
Kaliapani Chromite Mines  
Jajpur-755028, Odisha.

Report No.

:C/2021/4564

Date

:29.11.21

Sample No.

:MSK/KOL/2021/4438

Date of receipt of sample

:17.11.21

Date(s) of performance

:17.11.21-29.11.21

Ref. No. & Date

:P.O No.: 6200008210 Date: 06.01.21

Discipline

:Chemical

We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:

1	Group	:Pollution & Environment
2	Description of sample(As declared by customer)	:Effluent Water
3	Date of sampling	:16.11.21
4	Unique Identification	:Surface Run-off Pit (ETP Inlet)
5	Place of sampling	:Jindal Stainless Limited, Kaliapani Chromite Mines, Jajpur-755028, Odisha.
6	Sampling Plan & Procedures used	:APHA 23 <sup>rd</sup> edition, 2017, 1060B, C
7	Environmental conditions during sampling & Transport Condition	:Maintained
8	Identification of the personnel performing sampling	:Mr.Akram Khan

## ANALYSIS RESULT

Serial No.	Test Parameter	Test Method	Result
1.	pH value at 24°C	APHA 23 <sup>rd</sup> edition, 4500-H+B	8.49
2.	Total Suspended Solid as TSS in mg/l	APHA 23 <sup>rd</sup> edition, 2540D	2.8
3.	Oil and Grease in mg/l	APHA 23 <sup>rd</sup> edition, 5520B	<1.4
4.	Iron as Fe in mg/l	APHA 23 <sup>rd</sup> edition, 3500Fe B	<0.05
5.	Total Chromium as Cr in mg/l	APHA 23 <sup>rd</sup> edition, 3120 B	<0.05
6.	Hexavalent Chromium as Cr+6 in mg/l	APHA 23 <sup>rd</sup> edition, 3500 Cr B	<0.01

End

### Report prepared by:

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

### Report Verified By

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In Charge

- The results relate only to the item(s) tested.
- This Test Report shall not be reproduced except in full, without the permission of Mitra S.K. Private Limited.
- The reserved part of sample(s), except perishable sample(s), shall be retained for 15 days & 1 year (Air) from the date of issue of the Test Report.
- The reserved part of sample(s), Soil, Solid & Liquid Waste shall be retained for 15 days (as per CPCB guideline) from the date of issue of the Test Report.
- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis



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TC-6950

**TEST REPORT****ULR: TC-695021000004565F**

Name & Address of the Customer:	Report No.	: C/2021/4565
Jindal Stainless Limited,	Date	: 29.11.21
Kaliapani Chromite Mines	Sample No.	: MSK/KOL/2021/4439
Jajpur-755028, Odisha.	Date of receipt of sample	: 17.11.21
	Date(s) of performance	: 17.11.21-29.11.21
	Ref. No. & Date	: P.O No.: 6200008210 Date: 06.01.21
	Discipline	: Chemical

*We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results:*

1	Group	: Pollution & Environment
2	Description of sample (As declared by customer)	: Soil
3	Date of sampling	: 16.11.21
4	Unique Identification	: Dumping Area
5	Place of sampling	: Jindal Stainless Limited, Kaliapani Chromite Mines, Jajpur-755028, Odisha.
6	Sampling Plan & Procedures used	: Soil Chemical Analysis M.L. Jackson
7	Environmental conditions during sampling & Transport Condition	: Maintained
8	Identification of the personnel performing sampling	: Mr. Akram Khan

**Report prepared by:**

Signature : *[Signature]*  
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

**Report Verified by**

Signature : *[Signature]*  
Name : Ms. Paulami Dutta  
Designation : Executive QA

**Report Sign by Authorized Signatory**

Signature : *[Signature]*  
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In charge

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- The reserved part of sample(s), Soil, Solid & Liquid Waste shall be retained for 15 days (as per CPCB guideline) from the date of issue of the Test Report.
- Microbiological sealed pack water sample(s) shall be retained for 15 days & food sample(s) shall be retained for 4 days after analysis



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Doc No MSK/GEN/19/07



Report No. : C/2021/4565  
Sample No. : MSK/KOL/2021/4439

ULR: TC-695021000004565F

## ANALYSIS RESULT

SL. No.	Test Parameter	Test Method	Result
1	pH (1:2.5) at 25° C	IS:2720(Part-26)	5.85
2	Available Iron as Fe in mg/kg	TPM/MSK/P&E/1/13, issued on- 02/04/2018	<5.0
3	Bulk Density in g/cc	IS:2720(Part-29)	1.38
4	Texture	TPM/MSK/P&E/1/1/36A, issued on- 02/04/2018	Sandy Loam
5	Moisture in %	IS:2720(Part-2)	11
6	Total Nitrogen as N in mg/kg	IS: 14684	162
7	Water Holding Capacity in %	TPM/MSK/P&E/1/17, issued on-02/04/2018	40
8	Cation Exchange Capacity in meq/100gm	IS:2720(Part-24)	3.4
9	Available Phosphorus in mg/kg	TPM/MSK/P&E/1/12, issued on-02/04/2018	<3.0
10	Mercury as Hg in mg/kg	USEPA 245.5	<0.1
11	Arsenic as As in mg/kg	EPA 6010 D (ICP- OES)	<0.25
12	Cobalt as CO in mg/kg	EPA 6010 D (ICP- OES)	26.5

### Report prepared by:

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

### Report Verified By

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

### Report Sign By Authorized Signatory

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In-charge



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Web : [www.mitrask.com](http://www.mitrask.com)

**Report No.** : C/2021/4565  
**Sample No.** : MSK/KOL/2021/4439

**ANALYSIS RESULT**

SL. No.	Test Parameter	Test Method	Result
1	Manganese as Mn in mg/kg	EPA 6010 D (ICP- OES)	1448
2	Nickel as Ni in mg/kg	EPA 6010 D (ICP- OES)	1510
3	Chromium as Cr in mg/kg	EPA 6010 D (ICP- OES)	3895

\_\_\_ END \_\_\_

**Report prepared by:**

Signature :   
Name : Mr. Asim Kumar Jana  
Designation : Sr. Office Assistant

**Report Verified By**

Signature :   
Name : Ms. Paulami Dutta  
Designation : Executive QA

**Report Sign By Authorized Signatory**

Signature :   
Name : Dr. Soumyadeep Mukhopadhyay  
Designation : Lab In-charge



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## TEST REPORT

**Name & Address of the Customer :**
**Jindal Stainless Limited.**

Kaliapani Chromite Mines

Jajpur – 755028, Odisha

**Report No. : BBS/101**
**Date : 29.11.2021**
**Sample No. : MSKGL/ED/2021-22/11/00124**
**Date of Sampling: 16.11.2021**

*We hereby certify that the following sample drawn by us from the customer has been analyzed with the following results*

1.	Description of Sample	: Dustfall Measurement
2.	Sample Mark	: NA
3.	Date of sampling	: 16.11.2021
4.	Place of Sampling	: Roof Top of Administrative Building
5.	Environmental conditions during sampling	: NA
6.	Sampling Plan & Procedures used	: NA

### Analysis Result

SL No	Name of Pollutants	Unit	Test Method	Result
1.	Nickel (as Ni)	mg/m <sup>2</sup> -day	USEPA IO-3.4	0.252
2.	Arsenic (as As)	ug/m <sup>2</sup> -day	USEPA IO-3.4	<0.6
3.	Cobalt (as CO)	mg/m <sup>2</sup> -day	EPA-IO3.2 -June,1999	0.005
4.	Mercury (as Hg)	mg/m <sup>2</sup> -day	EPA-IO5 .0-June,1999	0.07

 Report Prepared by: *Ananta Kumar Datta*
**For Mitra S.K. Private Limited**
*P. Pradhan*

Authorized Signatory





Letter no: JSL/KLPN/2021/164

Date: 29 /11 /2021

To,

The Director (s)  
Ministry of Environment, Forest & Climate Change  
Eastern Regional Office  
A/3, Chandrasekharpur  
Bhubaneswar – 751023

Sub: Submission of half yearly compliance report in respect of the Environmental Clearance Conditions of Jindal Chromite Mines, M/s. Jindal Stainless Limited for the period from April - 2021 to September – 2021

Ref.1 : MOEF Letter No. J-11015/12/2000-IA.II(M), dated 13.02.2001

Ref.2 : MOEF Letter No. J-11015/369/2009-IA.II(M), dated 24.02.2016

Respected Sir,

We are enclosing herewith the half yearly compliance report on the status of the implementation of the conditions stipulated in environmental clearance of our Jindal Chromite Mines, Kaliapani, Jajpur (Odisha) of M/s. Jindal Stainless Limited.

Further our mines is under closure since 21.02.2018 by the direction of MoEF & CC, New Delhi, vide letter no: J-11015/163/2016-IA.II(M), dt 21.02.2018. So there is no activities inside our lease hold area from the above mentioned date.

This is for your kind information and necessary records please.

This is for your kind perusal sir.

Thanking you

Yours faithfully,

For Jindal Stainless Limited

*S. Prasad Biswal*  
Sakti Prasad Biswal

Mines Manager  
Jindal Chromite Mines  
M/s Jindal Stainless Limited

Encl: Half Yearly Compliance Report for Apr'2021 to Sep'2021

CC : 1. MoEF & CC, New Delhi

**Jindal Stainless Limited**  
**Jindal Chromite Mines**

At / PO : Kaliapani - 755 047, Dist. : Jajpur, Odisha, India

T : +91 6726 268545, F : +91 6726 268315, E : jindal\_mines@yahoo.com

Registered Office : O.P. Jindal Marg, Hisar - 125 005. (Haryana) India.

Corporate Office : Jindal Centre, 12, Bhikaiji Cama Place, New Delhi - 110 066, India

T : +91 11 26188345 - 60, F : +91 11 26170691, 26161271, E : info@jindalsteel.com, Website : www.jindalstainless.com