JINDAL

JINDAL SAW LTD.

JSL/ENV/F - 6/HY/MoEF/2016/ **Date: 25.05.2016**

The Director(s),
Ministry of Environment & Forest
Regional office (Western Region)
Kendriya Paryavaran Bhawan
Link Road No.-3, E-5, Ravi Shankar Nagar
Bhopal - 462016

Sub: Submission of six monthly environmental clearance compliance status report for the period of **October, 2015 to March, 2016.**

Reference:

(i) Environmental Clearance Order No.J.11011 /73/2004- IA II on dated 21st October 2004 & amended on dated 2nd July 2008.

(ii) Environmental Clearance Order F. No. J-11011/868/2008-IA-II (I) on dated 26th November, 2009 amended on dated 31st December 2014.

(iii) Environmental Clearance Order No. SEIAA/GUJ/EC/3(a)/122/2011 on dated 23rd June, 2011 amended vide letter No. SEIAA/GUJ/EC/3(a)/122/2011 on dated 9th Aug 2011.

Dear Sir,

With reference to the above subject matter, we are pleased to submit herewith six monthly Environmental Clearance compliance status report for the Period of **October, 2015 to March, 2016.**

We hope you will find the above in order please.

Thanking you,

Yours faithfully,
For **JINDAL SAW LTD.**

V. Rajasekaran
Unit Head

Encl: As above
CC:

(i) **The Zonal Officer**
Central Pollution Control Board,
Parivesh Bhawan, Opp. VMC Ward Office No.10
Subhanpura, Vadodarara -390023

(ii) **The Member Secretary**
Gujarat Pollution Control Board,
Paryavaran Bhavan, Sector 10-A
Gandhinagar -382 010

(iii) **The Member Secretary**
State Level Environment Impact Assessment Authority,
Gandhinagar, Gujarat

MONITORING THE IMPLEMENTATION OF ENVIRONMENTAL SAFEGUARDS

Ministry of Environment & Forests
Regional Office (W), Bhopal.
Monitoring Report

Part-I

DATA SHEET

Date: 25.05.2016

01	Project type: River-Valley/Mining/Industry/Thermal/Nuclear / Other (specify)	:	Industry
02	Name of the project	:	Expansion of Steel Plant (2,50,000 TPA to 3, 00,000 TPA)
03	Clearance letter(s) / OM no. and date	:	**EC Order No. J.11011/73/2004-IAII, Dated 21.10.2004 amended on 02.07.2008 & EC Order No. J-1011/868/2008-IA-II (I) Dated 26.11.2009 amended on 31.12.2014**
04	**Location**		
	a) District(s)	:	Kutch
	b) State(s)	:	Gujarat
	c) Latitude	:	22°53'61" N
	d) Longitude	:	69°39'26" E
05	Address for correspondence	:	
	a) Address of concerned Project Chief Engineer (with pincode & telephone / telex / fax numbers).	:	**Mr. Anurag Shrivastava** **JINDAL SAW LIMITED.** **Village – Samaghogha, Taluka – Mundra, District – Kutch, Gujarat –370 415** **Tel: 02838 – 661900** **Fax : 02838 – 240700**
	b) Address of Executive Project Engineer / Manager (with pincode / fax numbers.	:	-------do--------
06	Salient features	:	
	a) of the project	:	Jindal SAW Limited is having integrated pipe manufacturing unit at Samaghogha, Taluka: Mundra, District Kutch (Gujarat). Company manufactures different types of pipes namely, ductile iron spun pipe, longitudinal submerged arc welded pipe, helical submerged arc welded pipes and various types of pipe coating facility is also available here.

	b) of the environmental management plans	:	❖ In every sphere of production activity preventive steps / measures have been taken as pollution control measures. We have installed technologically sound equipment and pollution control devices like, Cyclone separator, Bag Filter, ESP, dry fog & water canon system etc. Later, wet gas cleaning plant is replaced by dry de-dusting system. By this process we are saving water approx.130-140 m^3/day. ❖ Recognized external agency has been deployed for regular monitoring of environmental parameters as per statutory requirements. ❖ Online ambient air quality monitoring system has already been established for continuous monitoring of PM10, PM2.5, SO_2 & NO_2. ❖ Online monitoring systems (opacity meter) are installed at major stacks for continuous monitoring of stack emissions. ❖ No any waste water generation from process and achieved 'Zero Discharged' plant. ❖ Dust suppression by water sprinkling on roads and in working area. ❖ Dry fogging systems (water canon) are installed to minimize the fugitive emissions during handling of materials. ❖ Internal roads are being cleaned regularly by sweeping machine. ❖ Waste generated is being handled properly by appropriate means. Also, hazardous wastes are disposed off through authorized re-cyclers/agency. ❖ Socio-economic activities are being undertaken.
07	Break up of the project area.	:	Total Area: 284.775 Acres

Sr. No.	Name of Plant	Area (Acres)
1.	Blast Furnace (Old Plant)	7.40
2.	Mini Blast Furnace(New Plant)	7.40
3.	Sinter Plant	9.95
4.	DISP/SDP(Old Plant)	14.60
5.	SDP(New Plant)	10.00
6.	JCO Plant	9.41

			7. Spiral Plant 11.05 **Please refer *Annexure- IX.***
	a) Submergence area (forest & non-forest)	:	Not Applicable.
	b) Others	:	214.965 Acres
08	Break up of the project affected population with enumeration of those losing houses / dwelling units' only agricultural land only, dwelling units & agricultural land & landless labourers / artisan.	:	Not Applicable
	a) SC, ST / Adivasis	:	
	b) Others	:	
09	Financial details	:	
	a) Project cost as originally planned and subsequent revised estimates and the year of price reference.	:	Old BF: Rs.80 Crs DISP/SDP: Rs. 85 Crs
	b) Allocation made for environmental management plans with item wise and year Wise break-up.	:	Rs.7 Crores
	c) Benefit cost ratio / Internal rate of return and the year of assessment.	:	Not Applicable
	d) Whether (c) includes the cost of environmental management as shown in the above.	:	Not Applicable
	e) Actual expenditure incurred on the project so far.	:	Old BF: Rs. 100 Crs DISP /SDP: Rs. 120 Crs
	f) Actual expenditure incurred on the environmental management plans so far.	:	Rs.10 Crores
10	Forest land requirement.	:	The project area does not comprise of any forest land.
	a) The status of approval for diversion of forest land for non-forestry use	:	
	b) The status of clearing felling	:	

	c) The status of compensatory afforestation, if any	:	
	c) 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 submergence area of reservoir, approach roads), if any with quantitative information.	:	The project does not involve felling of trees.
12	Status of construction		Old BF – Nov-2003 DISP/SDP – Jan-2004 JCO – Nov-2003 SPIRAL – May-2004 New BF – Feb-2010
	a) Date of commencement (Actual and / or planned)	:	
	b) Date of completion (Actual and / or planned).	:	Old BF – Jan-2005 DISP/SDP – Feb-2005 JCO – Feb-2005 SPIRAL – Jun-2005 New BF – Dec-2012
13	Reasons for the delay if the project is yet to start.	:	Not Applicable
14	Dates of site visits		
	a) The dates on which the project was monitored by the Regional Office on previous occasions, if any.	:	13th & 14th October-2012
	b) Date of site visit for this monitoring report	:	13th & 14th October-2012
15	Details of correspondence with project authorities for obtaining action plans / information on status of compliance to safeguards other than the routine letters for logistic support for site visits).	:	Half yearly compliance status report is being regularly submitted and last submission was on 20.11.2015.

MONITORING THE IMPLEMENTATION OF ENVIRONMENTAL SAFEGUARDS

Ministry of Environment & Forest
Western Region, Regional Office, Bhopal.
Monitoring Report

Part-I

DATA SHEET

Date: 25.05.2016

01	Project type: River-Valley/Mining/Industry/Thermal/Nuclear / Other (specify)	:	**Industry**
02	Name of the project	:	**Environmental Clearance for the Setting up of a Small Diameter Ductile Iron Pipe Plant, Village-Samaghogha, Tal: Mundra, Dist:Kutch by M/s Jindal Saw Ltd.**
03	Clearance letter(s) / OM no. and date	:	EC No. SEIAA/GUJ/EC/3(a)/122/2011 dated 23.06.2011
04	Location		
	a) District(s)	:	Kutch
	b) State(s)	:	Gujarat
	c) Latitude	:	$22^0$53' 61" N
	d) Longitude	:	$69^0$40' 26" E
05	Address for correspondence	:	
	a) Address of concerned Project Chief Engineer (with pincode & telephone / telex / fax numbers).	:	**Mr. Anurag Shrivastava** **JINDAL SAW LIMITED.** **Village – Samaghogha, Taluka – Mundra,** **District – Kutch, Gujarat –370 415** **Tel: 02838 – 661900** **Fax : 02838 – 240700**
	b) Address of Executive Project Engineer / Manager (with pincode / fax numbers.	:	--do--
06	Salient features		
	a) of the project	:	Company is having integrated pipe manufacturing unit at Samaghogha, Taluka: Mundra, District Kutch (Gujarat). M/s JSL has also set up Smaller Diameter Ductile Iron Pipe Plant at its premises. Among the major raw materials, liquid iron occupies 90% by weight and steel scrap occupies balance 10% by weight. Beside this some auxiliary raw materials are also required. The plant capacity is 225000 MT/ Year.

(S)

	b) of the EMP	:	❖ In every sphere of production activity preventive steps / measures have been taken as pollution control measures. We shall install technologically sound equipment and pollution control devices to keep the pollutants level within permissible limit. ❖ In order to meet the statutory ground level concentration limits for particulate matter, suitable stack height has already been provided for proper dispersion. ❖ Recognized external agencies are being deployed to monitor the level of various pollutants in the plant. ❖ Online ambient air quality monitoring system has already been established for continuous monitoring of PM10, PM2.5, SO2 and NO2. ❖ Internal roads being cleaned regularly by sweeping machine. ❖ Waste generated is being disposed off properly. ❖ Dust suppression by water sprinkling on roads and in working area. ❖ Afforestation / Green belt development is being carried out in and around the plant.
07	Break up of the project area		
	a) Submergence area (forest & non-forest)	:	Not applicable
	b) Others	:	Plant area : 07 Acre Green belt Area : 03 Acre Total Area : 10 Acres
08	Break up of the project affected population with enumeration of those losing houses / dwelling units only agricultural land only, both dwelling units & agricultural land & landless labourers / artisan.	:	Not Applicable.
	a) SC, ST / Adivasis	:	
	b) Others	:	
09	Financial details	:	
	a) Project cost as originally planned and subsequent revised estimates and the year of price reference.	:	Rs. 100 Crores
	b) Allocation made for EMP with item Wise and year wise break-up.		Rs. 6 Crores
	c) BC ratio / IRR and the year of assessment.	:	Not Applicable
	d) Whether (c) includes the cost of environmental management as shown	:	Not Applicable

	in the above		
	e) Actual expenditure incurred on the project so far	:	Rs. 100 Crores
	f) Actual expenditure incurred on the environmental management plans so far.	:	Rs. 4 Crores
10	Forest land requirement.	:	Not Applicable
	a) The status of approval for diversion of forest land for non-forestry use	:	
	b) The status of clearing felling	:	Not applicable.
	c) The status of compensatory afforestation, if any	:	Not applicable.
	d) Comments on the viability & sustainability of compensatory afforestation programme in the light of actual field experience so far.	:	Not applicable.
11	The status of clear felling in non-forest areas (such as submergence area of reservoir, approach roads), if any with quantitative information.	:	The project does not involve felling of trees.
12	Status of construction		03.12.2010
	a) Date of commencement (Actual and / or planned)	:	
	b) Date of completion (Actual and / or planned).	:	15.02.2013
13	Reasons for the delay if the project is yet to start.	:	Not applicable
14	Dates of site visits	:	
	a) The dates on which the project was monitored by the Regional Office on previous occasions, if any.	:	13 & 14 October-2012
	b) Date of site visit for this monitoring report	:	13 & 14 October-2012
15	Details of correspondence with project authorities for obtaining action plans / information on status of compliance to safeguards other than the routine letters for logistic support for site visits).	:	Half yearly compliance status report is being regularly submitted and last submission was on 20.11.2015.

*****

Compliance Status of Environmental Clearance Conditions

(EC issued vide letter No. J.11011/73/2004-IA II, Dated 21.10.2004)

Sr. No.	Compliance Condition	Compliance Status	Remarks
2.	It is noted that proposal is for environmental clearance of Mini Blast Furnace of capacity 2, 50,000 TPA for the manufacture of Ductile Iron Spun Pipes, Cast Iron Spun Pipes, LASW Steel Pipes, Spiral Pipes, ERW Steel Pipes and Hot Frame Steel Pipes including Ductile Iron Pipe Fitting and Ductile Iron Casting. The land area of the project is 225 acres. Water requirement of 125 m3/Hr. would be met from the Gujarat Water Infrastructure Limited for which you have obtained the permission on 19th May 2004. Public hearing panel has considered the project in the meeting held on 25th March 2004. The GPCB has granted NOC on 17th April 2004. Total cost of the project is Rs. 160.0 crores.	Point Noted	
3.	The ministry of Environment and Forests hereby accords environmental clearance to the above project under the provisions of EIA Notification dated 27th January 1994 as amended subsequent subject to strict compliance of the following specific and general condition.	Point Noted	
	A. SPECIFIC CONDITION		
i	The gaseous emissions from various process units shall conform to the load/mass based standards notified by this Ministry on 19th May 1993 and standards prescribed from time to time. The state Board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location. At no time the emission level should go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the unit. The respective unit should not be restarted until the control measures are rectified to achieve the desire efficiency.	Complied	
ii	There shall be no discharge of process effluent. The company shall achieve zero discharge including during rainy season by recycling/reuse of treated wastewater. The wastewater from the outlet of settling tank shall be used for blast furnace dust cleaning, blast furnace slag granulation plant, dust suppression in raw material handling yard and green belt development.	Complied	
iii	The blast furnace gas shall be cleaned in the gas cleaning plant connected with dust collectors and two stage wet venturi scrubbers. The dust free gas having particulate matter less	Complied	Operating Dry De-dusting System in which we get directly dry dust from system(BF plant) which is being used (100%) in sinter plant as

	than 10mg/NM3 shall be reused in stoves and steam boiler. The spent gas shall be let out through the stacks of appropriate height.		a raw material since Nov.'08.It is eco friendly system and saving the approx 130 to 140 M^3/day water consumption in process.
iv	The company shall use LPG instead of LDO as fuel for operation of 6000 KVA. Noise from gen set shall be controlled by constructing the room acoustically.	--	We would like to inform you that the use of LPG instead of LDO as fuel for operation of DG set is not feasible as well as possible. We would also like to inform that company is operating 30 MW power plant through waste heat recovery based located at Pragpar from where get power supply. Only during GEB failure / WHRPP failure company operate DG set. All Personal Protective equipment like ear muff/plug is provided to personnel working in high noise area. Also office cabin has been made acoustically.
v	The company shall not use ground water for commencing and operation of the Blast Furnace.	Complied	
vi	The company shall meet its water requirement from the Gujarat Water Infrastructure Limited (GWIL). The GWIL shall ensure that the operation of the blast furnace activity shall not have impacts on the competing users.	Complied	
vii	The company shall not take up foundry activity relating to manufacturing of Ductile Iron Pipe fittings and Ductile Iron Casting as mentioned at item no.3 and 4 of NOC granted by the Gujarat Pollution Control Board (GPCB) vide their letter no. FT-94/257 dated 5th January 2004 without prior environmental clearance. The GPCB shall not grant Consent to Operate for these items without prior environmental clearances.	Complied	
viii	The construction of blast furnace shall be earthquake proof as per IS: 1893, 2002 keeping in view that the unit is located in the seismic risk zone (zone V). The company shall implement the Disaster Management Plan.	Complied	Please Refer ***Annexure –XII*** for On Site Emergency Plan.
ix	The Central Pollution Control Board along with the Bhopal Regional Office of the Ministry of Environment and Forests shall carry out special inspections for ensuring compliance of conditions stipulated in this environmental clearance letter once in three months and submit report this Ministry.	Point Noted	
x	As per the Environmental Management Plan, solid waste generated from the Blast Furnace in the form of slag shall be granulated and sold to the cement manufacturers. Also the sludge	Complied	1. **Blast Furnace Slag:** - We are selling granulated slag to cement manufacturer as well as utilizing in-house our slag grinding unit at

	from the wastewater treatment plant shall be stored in the impervious sludge pond and sold to the cement manufacturers. The steel scraps that would be generated shall be reused in the induction furnace. The ground water quality around the sludge pond should be monitored regularly and data submitted to the Ministry's RO/CPCB/GPCB.		Pragpar for making slag cement. 2. **Sludge from GCP:** 100% sludge generated from gas cleaning plant (GCP) is collected and re-used in Sinter Plant.(we are using Dry De-dusting system for cleaning of gas) 3. The steel scrap generated from different process of plant is being re used in the induction furnace. Regarding ground water quality monitoring, piezometers have been established & monitored regularly. Status of ground water quality is enclosed as ***Annexure- I.***
xi	A green belt of adequate width and density should be developed in an area of 60 acre within the plant premises as per the CPCB guidelines.		Green belt and plantation work is being continued and efforts are being made to develop more greenery in and around the plant therefore company has established in house Horticulture Department for developing Lawn, Parks & Greenbelts. Company has planted **37622 nos.** tree/saplings during period from **October, 2015 to March, 2016**. A detail of plantation is enclosed as ***Annexure-II.***
xii	The company shall develop rainwater-harvesting structures to harvest the rainwater for utilization in the plant as well as to recharge the ground water table.		Company has developed one rain water harvesting pond and also more than twelve numbers of recharge well to restore the rain water/run off during monsoon season to recharge the ground water regime. The capacity of rain water harvesting pond is 20 MLD and photograph of the same is enclosed as ***Annexure-III.***
xiii	Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.		Occupational Health Surveillance of employees / workers is being done as per the Factory Act and records are being maintained by concern department is enclosed as ***Annexure-VII.***
xiv	Recommendations made in the CREP shall be implemented.	Complied	CREP compliance status is enclosed as ***Annexure – IV.***
xv	The company shall earmark 2% of total cost of project for eco development measures including community welfare measures in the project area. The amount shall be deposited by the company in a separate fund within three months to be maintained by the GPCB. The action plan in this regard shall be submitted to the GPCB as well as to this Ministry within three months of issue of this letter. After approval of action plan by the GPCB, the amount released will be deposited in two	Point Noted	We would like to inform you that this condition has been revoked/ withdrawn by MoEF Vide Circular no.11015/4/2000-IA.II (M) dated 7th October, 2005 and copy of the same has already been submitted.

	installments based on the progress of implementation. The GPCB shall ensure that implementation of action plan for eco development measures are completed within two years from the date of its approval of GPCB. Further, the interest accrued during this period on the amount deposited by the project authorities with GPCB shall be ploughed back to the same eco development fund.		
xvi	The Ministry has appraised the proposal without prejudice to the action initiated by the GPCB under Section 19 of the Environment (protection) Act, 1986 for commencing construction activity of Mini Blast Furnace without prior environmental clearance.	Point Noted	
B. GENERAL CONDITIONS			
i	The project authorization must strictly adhere to the stipulated made by the GPCB.	Complied	
ii	No further expansion or modifications in the plant should be carried out without prior approval of the Ministry of Environment and Forest.	Complied	
iii	At least four ambient air quality monitoring stations should be established in the downward direction as well as where maximum ground level concentration of SPM, SO2 and NOx are anticipated in consultation with the State Pollution Control Board. Data on ambient air quality and stack emission should be regularly submitted to this Ministry including its Regional Office at Bhopal and the State Pollution Control Board / Central Pollution Control Board once in six months.	Complied	AAQ Monitoring Stations have been established as per CPCB guidelines. Regular monitoring is being carried out and report is submitted. The summarized data on AAQ including fugitive emission & stack for the period October-2015 to March-2016 is enclosed as ***Annexure-V(A) & Annexure- V(B)*** respectively.
iv	Industrial wastewater should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time.	Complied	Presently Company operating the Dry Dedusting System in place of Wet dedusting System(GCP) in which we get directly dry dust from system(BF plant) which is being used (100%) in sinter plant as a raw material since Nov.'08.It is eco friendly system and saving the approx 130 to 140 M^3/ day water consumption in process.
v	The overall noise levels in and around the plant area should be kept well within the standards 85 dB (A) by providing noise control measures including acoustic hoods, silencers, enclosures, etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPS Rules, 1989 viz. 75 dB(A) (daytime) and 70 dB(A) (night time).	Complied	Regular Noise monitoring is being carried out inside and outside of the plant premises. Beside this we have taken preventive measures to minimize the noise level as much as possible by periodical maintenance of all operating equipments/ machineries and there proper enclosures. The result is enclosed as ***Annexure-VI (A) & VI (B).***

vi	The project proponent shall also comply with all the other environmental protection measures and safeguards recommended in the EIA / EMP report. Further, the company must undertake socio-economic development-activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc.	Complied	
vii	The Regional Office of this Ministry at Bhopal/Central Pollution Control Board/ State Pollution Control Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation should be submitted to them regularly.	Complied	
viii	The Project Proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board / Committee and may also be seen at Website of the Ministry of Environment and Forests at http:/enviro.nic.in. This should be advertised with seven days from the date of issue of the clearance letter. At least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locally concerned and a copy of the same should be forwarded to the Regional Office.	Complied	
ix	The project Authorities should inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Complied	
3.0	The Ministry revokes or suspends the clearance, if implementation if any of the above conditions is not satisfied.	Point Noted	
4.0	The Ministry reserves the right to stipulate additional conditions if found necessary. The company in a time bound manner will implement these conditions.	Point Noted	
5.0	The above conditions will be enforced, inter – alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public (Insurance) Liability Act, 1991 along with their amendments and rules.	Point Noted	
	EC AMENDED VIDE ORDER NO. F. NO.J-11011/73/2004 IA II (I) DATED 02/07/2008		

	Kindly refer your letter no. JSLS-IPU/ENV/2008 dated 2nd June,2008 wherein you have requested Ministry for the amendment in the Specific Condition No.III of the environmental clearance letter accorded by the Ministry vide letter no. J-11011/73/2004-IA-II dated 31st October, 2004 since you want to install Dry Dedusting System (DDS) and Pulverized Coal injection System (PCIS) in the Mini Blast Furnace (MBF) at village Samaghogha, Taluka Mundra, District Kutch, Gujarat instead of earlier proposed two stage wet scrubbing system.		
	The matter has been examined in the Ministry and it is observed that installation of Dry Dedusting System (DDS) and Pulverized Coal Injection System (PCIS) in the mini Blast Furnace (MBF) are more environment – friendly for cleaning the gas in MBF and will play an important role in controlling the gaseous emissions. Therefore, Ministry has no objection in installing Dry Dedusting System (DDS) and Pulverized Coal Injection System (PCIS) in the Mini Blast Furnace (MBF) in place of Coke in the existing Mini Blast Furnace (MBF) at Village Samaghogha, Taluka Mundra, District Kutch, Gujarat instead or earlier proposed two stage wet scrubbing system subject to following condition. Gaseous emissions from the Mini Blast Furnace (MBF) Should not exceed 10 mg/Nm^3 after installation of Dry Dedusting System (DDS) and Pulverized Coal Injection System (PCIS) in the Mini Blast Furnace (MBF) and regular reports should be submitted to the Ministry's Regional Office at Bhopal, Gujarat Pollution Control Boards (GPCB) and Central Pollution Control Board (CPCB).	Complied	**Please Refer Results in Annexure-V (B).**

+Compliance status on Environmental Clearance (Vide letter No. J11011/868/2008-IA II (I), Dated 26.11.2009 amended on dated 31.12.2014

<table>
<tr><th>Sr. No.</th><th>Compliance Condition</th><th>Compliance Status</th><th>Remarks</th></tr>
<tr><td>1</td><td>Kindly refer your letter no nil dated 12th August, 2009 along with project documents including Form-I, Terms of References, Pre feasibility Report and EIA / EMP Report and subsequent clarification furnished vide communications dated 12th October, 2009 regarding mentioned project.</td><td>--</td><td></td></tr>
<tr><td>2</td><td>The ministry of Environment and Forests has examined the application. It is noted that proposal is for the expansion of Steel Plant (250,000 TPA) at village Samagogha, Pragpar –Mandvi Road, Taluka Mundra, District Kutch , Gujarat by M/S Jindal Saw Ltd.The existing facilities are located in 226 acres land. Additional 86.14 acre land is acquired for the expansion units. No national park / Wild life sanctuary/ reserve forest is located within 10 km radius of the project site. Total cost of the project is Rs. 400.00 Crores. Proposed project is intended to support seamless pipes of M/S JSL in terms of supplying raw materials i.e. round / casted steel of different specifications depending on the market requirement. Following are the details of existing and proposed facilities.
<table>
<tr><th>S.N.</th><th>Facility</th><th>Capacity</th><th>Products</th></tr>
<tr><td colspan="4">Existing:</td></tr>
<tr><td>1.</td><td>Blast Furnace</td><td>2.5LPTA</td><td>Hot metal / Pig Iron</td></tr>
<tr><td>2.</td><td>Sinter Plant</td><td>10.4 LPTA</td><td>Sinter</td></tr>
<tr><td>3.</td><td>Pipe Plant</td><td>8.184 LPTA</td><td>LSAW, Spiral Steel pipes, DI & CI pipes.</td></tr>
<tr><td>4.</td><td>CPP</td><td>21,290 KVA</td><td>Power</td></tr>
<tr><td colspan="4">Proposed Expansion</td></tr>
<tr><td>1.</td><td>Renovation and Modernization of existing Blast Furnace</td><td>2,50,000 TPA (existing) to 3,00,000 TPA</td><td>Hot metal / Pig Iron</td></tr>
</table></td><td>--</td><td>Project has already been commissioned & under operation</td></tr>
</table>

	2.	Mini Blast Furnace	2,80,000 TPA (1X 250 m^3)	Hot metal / Pig Iron		Mini Blast Furnace (New BF) is also commissioned & under operation.
	3.	Steel Melting Shop Energy Optimized furnace Ladle Refining Furnace Vacuum Degasser Unit Continuous Caster Machine	2,80,000 TPA 1 X 35 TPH 2 X 35 TPH 1 X 35 TPH 1 X 35 TPH	Billets		Proposed project
	4.	Air Separation Unit	110 TPD	Oxygen, Nitrogen & Argon		Air Separation Plant is already commissioned.
	5.	Captive Power Plant (BF gas)	4 MW	Power		BFG based Power Plant is also proposed.
3	Steel will be produced through Blast Furnace –Energy Optimizing (EOF)-LRF-VD- CCM route. Hot metal from blast furnace, scrap, and Ferro alloys will be fed to Energy Optimizing furnace (EOF). Scrap will also be melted. Molten metal from EOF will be transferred to LRF for further refining and for degassing in a vacuum degassing unit (VDU).The refined molten steel will be casted into billet in a continuous casting machine (CCM).Commercial oxygen gas will be produced in an air separation plant by fractional distillation of high pressure atmospheric air.				--	Proposed Project
4	Gas Cleaning Plant, Multi-Cyclone, bag house, wet ventury scrubber, fume extraction system etc. will be provided to control emissions within 50 mg / Nm^3. Existing and proposed water consumption is 4.0 MLD and 5 MLD respectively and permission is available for 9,500 KLD (9.5MLD) water from Gujarat Water Infrastructure Limited (GWIL). 300 M^3 / day ground water will also be used. All the treated waste water will be discharged outside the plant premises. The granulated blast furnace slag will be given to cement makers. Iron rich dust, scales and sludge will be reused in the sinter plant. SMS slag after metal recovery and waste refractory will be suitably disposed. Green belt will be developed in 75 acres (33 %), out of total 226 acres.				Complied	Company has installed Dry-de-dusting (Bag House) in place of gas cleaning plant at Blast Furnace-1. DDS is also installed at BF-2.
5	Public Hearing / Public Consultation meeting was held on				Point Noted	

	9th July, 2009.		
6	The Ministry of Environment and Forests hereby accords environmental Clearance to the project Under EIA Notification dated 14th September, 2006 subject to strict compliance of the following conditions:	Point Noted	
A.	**SPECIFIC CONDITION**		
i)	Compliance to all the specific and general conditions stipulated for the existing plant shall be ensured and regular reports submitted to the Ministry and its Regional Office at Bhopal.	Complied	
ii)	Use of anthracite coke shall be re-examined and a report submitted to the ministry and it's Regional Office at Bhopal.	Complied	Analysis report of anthracite coal is enclosed as ***Annexure-XV.***
iii)	Efforts shall be made to reduce RSPM levels in the ambient air and a time bound action plan shall be submitted. On line ambient air monitoring and continuous stack monitoring facilities for all the stacks and sufficient air pollution control devices shall be provided to keep the emission level below 50 mg/ Nm^3. All the gases from blast furnace after cleaning in gas cleaning plant (GCP) shall be used as fuel for power generation. At no time, the emission levels shall go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency.	Complied	Company has established on line ambient air quality monitoring station for continuous measurement of PM10, PM2.5, SO2 & NOx and opacity meters for continuous measurement of stack emissions. Operating the Dry De-dusting System in which we get directly dry dust from system (BF plant) which is being used in sinter plant as a raw material. Cleaned BF Gas using in different operation activity like Sinter Plant, Annealing Furnace, Curing furnace & Boilers.
iv)	Blast furnace top gas shall be cleaned in multi –cyclone and bag house. Flue gas from Energy Optimizing Furnace (EOF) shall be treated in gas cleaning plant comprising of cyclone followed by wet ventury scrubber and clean gas shall be discharged through a stack of adequate height as per CPCB guidelines. Fume extraction system with bag filters shall be provided to ladle refining furnace (LRF). The SPM emissions from all the sourced shall be controlled within 50 mg/ Nm^3.	Complied	Regarding treatment of flue gas from EOF and also provision of fume extraction system at LRF both are related to SMS and are not applicable because it is proposed project.
v)	Secondary fugitive emissions from blast furnace shall be controlled within the latest permissible limits issued by the ministry and regularly monitored. Guidelines / Code of practice issued in this regard by the CPCB should also be followed.	Complied	Fugitive emissions are being monitored regularly ***(Please Refer Annexure-V (A).***
vi)	Vehicular pollution due to transportation of raw material	Complied	Company has made

	and finished product shall be controlled. Proper arrangements should also be made to control dust emissions during loading and unloading of the raw material and finished product. Vehicular emissions shall be regularly monitored and records kept.		concrete road for transportation of finished product & raw material to minimize fugitive emissions.
vii)	In-plant control measures for controlling fugitive emissions from spillage / raw materials handling shall be provided. Fugitive dust emissions from raw material handling system shall be minimized by using dry fogging system, air curtains and water sprinkling system. Fugitive emissions from raw material transfer points and junction point of conveyer shall be controlled by providing bag house. Coal mill shall be installed provided with bag filters to reduce coal dust pollution. De-dusting system shall be installed at stock house. Data on fugitive emissions shall be regularly monitored and records maintained.	Complied	Company has installed dry fogging system with air curtains at Blast Furnace ground hoppers.
viii)	Total water requirement after expansion from Gujarat Water Infrastructure Limited (GWIL) and bore well shall not exceed 9.500 KLD (9.5 MLD) and 300 m3 / day respectively as per the permission accorded by the concerned authorities. Air cooled condenser shall be provided to captive power plant to reduce water consumption. Ground water or any other surface water shall not be utilized for any construction or industrial purposes. Blow down water from cooling tower and air separation plant shall be re-used as make up water for slag granulation. Cooling tower blow down from blast furnace gas based captive power plant shall be used as make –up for dust scrubbing in EOF and recycled.DM plant regeneration water shall be neutralized and used for dust suppression and green belt development. Domestic wastewater shall be treated in sewage treatment plant (STP) and used for gardening.	Complied	Regarding permission for ground water withdrawal and sanction letter from GWIL is enclosed as available & already submitted to you. Please also note that SMS and gas based captive power plant are proposed, hence not applicable. DM/RO plant regeneration water is being neutralized and collected into SGP & reutilized for cooling of BF-Slag. Also treated sewage water is being used for gardening.
ix)	Efforts shall be made to make use of rain water harvested. If needed, capacity of the reservoir shall be enhanced to meet the maximum water requirement. Only balance water requirement shall be met from the Gujarat Water Infrastructure Limited (GWIL)	Complied	
x)	'Zero' effluent discharge shall be strictly followed and no wastewater shall be discharged outside the premises.	Complied	
xi)	The water consumption should not exceed 16 m^3/Ton of Steel as per prescribed standard.	Complied	
xii)	Regular monitoring of influent surface, sub-surface and ground water shall be ensured and treated wastewater should meet the norms prescribed by the State Pollution Control board or described under the E (P) Act whichever are more stringent. Leachate study for the effluent generated and analysis should also be regularly carried	Complied	No wastewater is being discharged outside the plant premises as we are Zero Discharge Plant and entire water/wastewater is being fully recycled and

	out and report submitted to the ministry's Regional Office at Bhopal, GPCB and CPCB.		reused after treatment. Regular monitoring is being carried out & results are enclosed as ***Annexure-XIV.***
xiii)	Ground water monitoring around the solid waste disposal site / secured landfill (SLF) should be carried out regularly and report submitted to the Ministry's Regional Office at Bhopal, CPCB and GPCB.	Complied	Regular monitoring on ground water quality by establishing Piezometers inside the plant premises in order to compliance of NOC issued by CGWA. ***(Please Refer Annexure- I).***
xiv)	All the blast furnace slag shall be granulated and provided to cement manufacturers for further utilization. All the dust from the air pollution control equipments and scales shall be recycled and reused in the Sinter Plant. All the other solid waste including SMS slag after metal recovery, sludge from EOF gas cleaning plant, broken refractory mass shall be properly disposed off in environment – friendly manner. Spent /used oil and lubricants shall be sold to the registered recyclers as per the Hazardous Waste (Management & Handling) Rules, 1989 and subsequent amendments.	Complied	Granulated BF-Slag is being sold to Cement Manufactures (Indian & Abroad) and also reused at our own Slag Grinding Unit. All the dust arrested by APCM is being recycled by reusing in Sinter Plant. Points related to SMS are not applicable because it is proposed project.
xv)	A time bound action plan shall be submitted to reduce solid waste, its proper utilization and disposal.	Complied	
xvi)	Proper Handling, storage, utilization and disposal of all the solid waste shall be ensured and regular report regarding toxic metal content in the waste material and its composition, end use of solid / hazardous waste shall be submitted to the Ministry's Regional Office at Bhopal, GPCB and CPCB.	Complied	
xvii)	As proposed, green belt shall be developed in 75 acres (33 %), out of total 226 acres in and around the plant premises to mitigate the effects of fugitive emissions all around the plant as per the CPCB guidelines in consultation with DFO.	Complied	Green belt development and plantation work is being continued and our efforts are being made to develop more greenery in and around the plant therefore company has established in house Horticulture Department for developing lawn, parks & greenbelts. Company has planted 37622 nos. saplings during period from Oct, 2015 to March, 2016 and about more than 165512 trees /

			saplings are available in & around plant premises. A detail of plantation is enclosed as ***Annexure-II.***
xviii)	All the recommendation made in the charter on Corporate Responsibility for Environment Protection (CREP) for the Steel plants shall be strictly implemented.	Complied	***Please Refer Annexure-IV.***
xix)	All the commitments made to the public during public hearing / Public Consultation meeting held on 9th July, 2009 shall be satisfactorily implemented	Complied	
xx)	The company shall provide housing for construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking , mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	Complied	
B.	**GENERAL CONDITIONS:**		
i)	The project authorities must strictly adhere to the stipulations made by the Gujarat Pollution Control Board (GPCB) and the state Government.	Complied	
ii)	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.	Point Noted	
iii)	The gaseous emissions from various process units shall confirm to the load / mass based standards notified by this Ministry on 19th May, 1993 and standard prescribed from time to time. The Gujarat Pollution Control Board (GPCB) may specify more stringent standards for the relevant parameters keeping in view the nature of the industry and its size and location.	Complied	
iv)	At least four ambient air quality monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, SO2, and NOx are anticipated in consultation with the GPCB. Data on ambient air quality and stack emission should be regularly submitted to this Ministry including its Regional Office at Bhopal, GPCB and CPCB once in six months.	Complied	AAQ Monitoring Stations have been established as per CPCB guidelines. The regular monitoring is being carried out and report submitted (***Please Refer Annexure-V (A).***
v)	Industrial waste water shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 as amended form time to time. The treated waste water shall be utilized for plantation purpose.	--	No any industrial waste water generation except domestic, hence not applicable.
vi)	The overall noise levels in and around the plant are shall be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standard s prescribed under EPA Rules , 1989 viz. 75 dBA (day time) and 70 dBA (night time)	Complied	Measures are being taken & monitored regularly. Noise level status is enclosed as (***Please Refer Annexure- VI (A) & VI (B).***
vii)	The company shall undertake rain water harvesting measures by collecting the rain water through drains. The	Complied	Please refer ***Annexure-III***

	water collected shall be connected to raw water pipe line for reuse in the plant. The company shall provide proper drainage system for rainwater to prevent water logging within and in the vicinity of the plant.		
viii)	Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.	Complied	Please refer ***Annexure-VII***
ix)	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA / EMP report and during the public hearing meeting. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc.	Complied	
x)	As proposed Rs. 20.00 Crores and Rs. 2.00 Crores shall be earmarked towards the capital cost and recurring expenditure / annum earmarked for the environmental pollution control to implement the conditions stipulated by the Ministry of Environment and Forests as well as the conditions stipulated herein shall be submitted to the Regional Office of this Ministry at Bhopal / CPCB / GPCB . The funds so provided shall not be diverted for any other purposes.	Complied	Please refer ***Annexure-VIII.***
xi)	A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishad / Municipal Corporation, Urban Local Body and the local NGO, if any from whom suggestion / representations if any were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.	Complied	
xii)	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their web site and shall update the same periodically. It shall simultaneously to be sent to the Regional Office of the MOEF, Bhopal, the respective zonal office of CPCB and the GPCB. The criteria pollutant levels namely SPM, RSPM,SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters , indicated for the project shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	Complied	Monitoring is being carried out regularly & data is being displayed at main gate.
xiii)	The project proponent shall also submit six monthly report on the status of the compliance status stipulated environmental conditions including results of monitored data (both in hard copies as well as by e mail.) to the Regional Office of MOEF at Bhopal, the respective Zonal office of CPCB and the GPCB. The Regional Office of	Complied	

	this ministry at Bhopal / CPCB / GPCB shall monitor the stipulated conditions.		
xiv)	The environmental statement for each financial year ending 31st March in Form –V as is amended to be submitted by the project proponent to the concerned state Pollution Control Board as prescribed under Environmental Protection Rules, 1986. As amended subsequently, shall also be put on the website of the company along with the respective Regional Office of the MOEF by e-mail.	Complied	
xv)	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the GPCB and may also be seen at web site of the Ministry of Environmental and Forests at htpp:/envfor.nic.in.This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local news papers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to Regional office.	Complied	
xvi)	Project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Complied	
7.0	The Ministry may revoke or Suspended the clearance, if implementation of any of the above conditions is not satisfactory.	Point Noted	
8.0	The Ministry reserves the right to stipulate additional conditions if found necessary. The company in a time bound manner shall implement these conditions.	Point Noted	
9.0	Any appeal against this environmental clearance shall lie with the national Environment Appellate Authority, if preferred within a period of 30 days as prescribed under section 11 of the National Environment Appellate Act, 1997.	Point Noted	
10.0	The above conditions shall be enforced, inter –alia under the provision of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981 the Environment (Protection Act, 1986, Hazardous Wastes (Management and Handling) Rules, 2003 and the Public (Insurance) Liability Act, 1991 along with their amendments and rules.	Point Noted	

COMPLIANCE STATUS OF ENVIRONMENTAL CLEARANCE FOR SMALL DIA DUCTILE IRON PIP

(Environmental Clearance No.: SEIAA/GUJ/EC/3(a)/122/2011, Dated 23.06.2011 & Amended on 09.08.2011)

Sr. No.	Compliance Conditions	Compliance Status	Remarks
A	**SPECIFIC CONDITIONS**		
1.	Total production of molten metal / sponge iron after the proposed expansion for captive consumption plus sell shall not exceed the total permitted quantity of 5,80,000 TPA as per MoEF's environmental clearance order dated 26/11/2009.	Complied	
2.	The company shall strictly abide by the outcome / order of the court for the litigation in the Mundra Civil Court with reference to the matter of the existing cart track.	Point Noted	
3.	The alternate new cart track shall be dedicated for use of villagers and the company shall not claim ownership of that land in future as well. Moreover, the company shall not plan any expansion / activity in future that may lead to recruiting of the new cart track.	Complied	
A1	**WATER**		
4.	Fresh water requirement for the proposed DI Pipe Plant shall not exceed 731.64 KL/day and it shall be met only through water supply from Gujarat Water Infrastructure Ltd. (GWIL).	Complied	
5.	No ground water shall be tapped for the project requirements. Water meter shall be installed at the all water intake points and its records shall be maintained.	Complied	
6.	There shall be no industrial effluent generation from the proposed DI Pipe Plant.	Complied	
7.	Domestic wastewater generation from the proposed DI Pipe Plant shall not exceed 1.44 KL/day and it shall be disposed off through septic tank /soak pit.	Complied	
8.	Rain water harvesting of surface as well as roof top runoff shall be undertaken and the same water shall be used for the various activities of the project to conserve fresh water as well as to recharge ground water before recharging the surface runoff, pretreatment must be done to remove suspended matter.	Complied	Company has developed 20 MLD rain water harvesting pond and also more than 12 numbers of recharge well to restore the rain water/run off during monsoon season to recharge the ground water regime. (***Please Refer Annexure-III***).
A2	**AIR**		
9.	Blast furnace Gas, LDO, FO & LPG shall be used as fuels	Complied	

	in the new DI Pipe Plant.		
10.	Height of stacks attached to (i) Core Shop (ii) Magnesium Treatment (iii) Socket Cleaning, (iv) Zinc Coating, (v) Tri-grinding Station, (vi) Boiler shall be 30 m and height of stack attached to Annealing Furnace shall be 45 m, Adequate port holes and sampling facilities shall be provided at all the stacks.	Complied	
11.	Bag Filter shall be provided as air pollution control system as proposed for each (i) Core Shop (ii) Magnesium Treatment (iii) Socket Cleaning, (iv) Zinc Coating, (v) Tri-grinding Station, (vi) Boiler. These bag filters shall be operated efficiently to achieve particulate matter emission levels below 50 mg/Nm3 and rest of parameters as per the norms prescribed by the GPCB at the stack outlets.	Complied	
12.	Online ambient air monitoring and continuous stack monitoring facilities shall be provided for all the stacks and sufficient air pollution control devices shall be provided to keep the particulate matter emission level below 50 mg/Nm3 as per the specific condition no. (iii) Stated in the environmental clearance order no. J-11011/868/2008-IA-II (I) dated 26/11/2009 issued by the MoEF. The monitored data shall be displayed at strategic locations within and outside the premises, including at main gate of the company premises.	Complied	Company has established continuous on line ambient air quality monitoring station and opacity meters for continuous measurement of stack emissions.
13.	The company shall prepare schedule, carry regular preventive maintenance of mechanical and electrical parts of Bag Filters replace damaged bags and assign responsibility for the same to the senior officer of the company.	Complied	
14.	The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. Directors of Industrial Safety & Health).	Complied	Monitoring is being carried out regularly ***[Please Refer Annexure-V (A)].***
15.	Third party performance evaluation of the Bag Filters shall be carried out at least once in a year to check its performance and efficiency through a reputed institute like, L. D. College of Engineering or such other institute of similar repute, and its records shall be maintained.	Complied	
16.	Regular monitoring of ground level concentrations of SO2, NOx, PM10 and PM2.5 parameters shall be carried out at least four stations in the downwind direction in the impact zone as well as where maximum ground level concentration is anticipated and its records shall be maintained. The concentration of pollutants shall not exceed the national ambient air quality standards notified by the MoEF vide notification dated 16/11/2009. If any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in	Complied	AAQ Monitoring stations have been established as per CPCB guidelines. Regular Monitoring is being carried out and report submitted. The summarized data for the period Oct, 2015 to March, 2016 is enclosed ***[Please Refer Annexure-V (A)].***

	consultation with GPCB.		
A3	**HAZARDOUS / SOLID WASTE**		
17.	The company shall strictly comply with the rules and regulations with regards to handling and disposal of Hazardous waste in accordance with the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008, as may be amended from time to time. Authorisation from the GPCB shall be obtained for collection / Treatment /storage / disposal of hazardous wastes.	Complied	
18	Hazardous/solid waste shall be packed and stored in a separate designated hazardous waste storage facility with impervious bottom and leachate collection facility, before its disposal.	Complied	
19.	Burnt core sand shall be transported to sand reclamation plant for its reuse to make fresh cores.	Complied	
20.	Magnesium powder shall be sold to fertilizer industries or reused in sinter plant.	Complied	
21.	Zinc dust and used / waste oil shall be sold to only to the registered recyclers.	Complied	
22.	Dust from tri grinding station shall be re used in house.	Complied	
23.	Cement and sand waste shall be utilized in solid brick manufacturing.	Complied	
A4.	**SAFETY**		
24.	Fire protection system based on National Fire Protection Association (NFPA) approved guidelines shall be provided.	Complied	Please refer ***Annexure-XIII.***
25.	Personal protective equipment shall be provided to workers and its usage shall be ensured and supervised.	Complied	Please refer ***Annexure-XI***
26.	First Aid Box and required antidotes for chemicals used in the unit shall be made readily available in adequate quantity at all the times.	Complied	
27.	Hazardous material storage shall be at an isolated designated location. Storage and use of hazardous chemicals shall be minimized to the extent possible and all necessary precautions shall be taken to mitigate the risk generated out of it.	Complied	
28.	All transporting rout within the factory premises shall have paved roads to minimize splashes and spillages.	Complied	All the internal roads are paved and also company has constructed RCC road for transportation of raw materials.
29.	All efforts shall be made for automization of molten metal handling and human exposure to the molten metal shall be	Complied	

	avoided as far as possible.		
30.	Training shall be imparted to all the workers on safety and health aspects of molten metal handling heat stress etc. to avoid its impact on human being.	Complied	Trainings details is enclosed as ***Annexure-X.***
31.	Occupational health surveillance of the workers shall be carried out on a regular basis and records shall be maintained as per the Factories Act and Rules. Pre-employment and periodical post employment medical examination for all workers shall be undertaken as per the statutory requirements.	Complied	Occupational Health Surveillance of employees / workers is being done as per the Factory Act and records are being maintained by concern Department. Please refer Annexure-***VII.***
32.	At all the times, necessary tie up with the nearby doctor qualified/ hospital for occupational health shall be made to ensure that the medical treatment is given within the shortest possible time in case of any adverse condition.	Complied	
33.	Sufficient ventilation, exhaust shall be provided to maintain the temperature within the work area. Temperature indicators shall be provided at the vulnerable places in consultation with Director of Safety and health.	Complied	
34.	The project management department shall prepare a detailed Disaster Management Plan (DMP) for the project as per the guidelines from Directorate of Industrial Safety and Health.	Complied	Please refer ***Annexure-XII.***
A5.	**NOISE**		
35.	To minimize the noise pollution the following noise control measures shall be implemented.	--	
✓	Selection of any plant equipment shall be made with specification of low noise levels.	Complied	
✓	Manufactures /suppliers of major noise generating machines / equipments like air compressors, feeder pumps, turbine generators, etc. shall be instructed to make required design modifications wherever possible before supply and installation to mitigate the noise generation and to comply with the national / international regulatory norms with respect to noise generation for individual units.	Complied	
✓	Regular maintenance of machineries and vehicles shall be undertaken to reduce noise impact.	Complied	
✓	Noise suppression measures such as enclosures, buffers and /or protective measures shall be provided.	Complied	
✓	Employees shall be provided with ear protection measures like earplugs or earmuffs.	Complied	
✓	Proper oiling, lubricating and preventive maintenance shall be carried out of the machineries and equipments to	Complied	

	reduce noise generation.		
✓	Construction machineries generating minimum noise and vibration shall be chosen.	Complied	
✓	Ear plug/earmuffs shall be made compulsory for the construction workers working near the noise generating activities / machines / equipment.	Complied	
✓	Vehicles and construction equipment with internal combustion engines without proper silencer shall not be allowed to operate.	Complied	
✓	Construction equipment meeting the norms specified by EP Act, 1986 shall only be used.	Complied	
✓	Noise control equipment and baffling shall be employed on generators especially when they are operated near the residential and sensitive areas.	Complied	
✓	Noise level shall be reduced by the use of adequate mufflers on all motorized equipment.	Complied	
36.	The overall noise level in and around the plant area shall be kept well within the prescribed standards by providing noise control measures including acoustic solution , hoods, silencers, enclosures, vibration dampers etc.on all sources of noise generation . The ambient noise level shall confirm to the standards prescribed under the Environment (Protection) Act and Rules. Workplace noise levels for workers shall be as per the Factories Act and Rules.	Complied	Noise monitoring is being carried out regularly & results enclosed as ***Annexure-VI (A) & VI (B)].***
A.6	**CLEANER PRODUCTION AND WASTE MINIMISATION**		
37.	The unit shall undertake the cleaner production Assessment study through a reputed institute / organization and shall form a CP team in the company. The recommendations there of along with the compliance shall be furnished to the GPCB.	Complied	
38.	The company shall undertake the following waste minimization measures:	--	
a.	Metering and control of quantities of active ingredients to minimize waste.	Complied	
b.	Re-use of by products from the process as raw materials or raw materials substitutes in other process.	Complied	
c.	Use of automated and enclosed filling to minimize spillages.	Complied	
d.	Use of close feed system.	Complied	
e.	Dry cleaning / mopping of floor instead of floor washing.	Complied	
f.	Use of high pressure hoses for equipment cleaning to	Complied	

	reduce waste water generated.		
g.	Regular preventive maintenance for avoiding leakage , spillage etc.	Complied	
A.7	**GREEN BELT AND OTHER PLANTATION**		
39.	The unit shall develop green belt at least 3 acre area within premises as proposed as per the guidelines of the CPCB. Green belt of average 15 m width comprising of rows of varying height tall trees with thick foliage shall be developed in the periphery of the factory premises.	Complied	Greenbelt & plantation details are enclosed as ***Annexure-II.***
40.	Drip irrigation system shall be used for green belt development.	--	It is under process & shall be implemented.
41.	The unit shall also take up adequate plantation at suitable open land and road sides and other open areas in nearby villages or schools in consultation with the Gram Panchayat / GPCB and submit an action plan for the same for next three years to the GPCB.	Complied	**Please Refer Annexure-II**
B.	**GENERAL CONDITIONS**		
42.	In the event of failure of any pollution control system adopted by the unit, the unit shall be safely closed down and shall not be restarted until the desired efficiency of the control equipment has been achieved.	Point Noted	
43.	The company shall vigorously follow the recommendations mentioned in the Charter on Corporate Responsibility for Environment Protection (CREP) published by the Central Pollution Control Board.	Complied	CREP compliance detail is enclosed as ***Annexure-IV.***
44.	All the issues raised in the public hearing held on 29.03.2011 shall be comprehensively addressed / complied with in a time bound manner.	Complied	
45.	The project proponent shall vigorously implement the CSR plan for the year 2011-12 submitted to the SEAC, Gujarat and allocate Rs. 92.82 lacs for the same.	Complied	
46.	The "Need Assessment Study" shall be carried out through any reputed institute like Tata Institute of Social Studies, Sardar Patel Institute of Economic Research etc. and based on the needs of the community, various socio-economic developmental of the surrounding villages.	--	Company has already been spent Rs.2.16 corers during 2015-2016.
47.	A separate Environment Management Cell equipped with full fledged laboratory facilities and qualified personnel shall be set up to carry out the environment management and monitoring functions and a separate budget shall be allocated for this purpose.	Complied	
48.	The fund earmarked for environment protection measures	Complied	CSR expenses details is

	and CSR activities shall be maintained in separate accounts and there shall not be any diversion of these funds for any other purpose. A year wise expenditure on environmental safeguards shall be reported.		enclosed as ***Annexure-VIII.***
49.	Pucca flooring / Impervious bottom shall be provided in the work areas and storage.	Complied	
50.	Leakages from the pipes, pumps, shall be minimal and if occurs, shall be arrested promptly. During material transfer, spillages shall be avoided and garland drain be constructed.	Complied	
51.	The project management shall also implement the recommendations made in the EIA / EMP report of the project and the undertaking submitted by the project proponent.	Complied	
52.	The project proponent shall also comply with any additional condition that may be imposed by the SEAC or the SEIAA or any other competent authority for the purpose of the environmental protection and management.	Point Noted	
53.	No further expansion or modifications in the plant shall be carried out without prior approval of the MoEF / SEIAA, as the case may be. In case of deviations or alterations in the project proposal from those submitted to MoEF / SEIAA / SEAC for clearance, a fresh reference shall be made to the SEIAA/ SEAC to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Point Noted	
54.	The project authority shall earmark adequate funds to implement the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.	Point Noted	
55.	The applicant shall inform the public that the project has been accorded environmental clearance by the SEIAA and that the copies of the clearance letter are available with the GPCB and may also be seen at the website of SEIAA /SEAC / GPCB.This shall be advertised within seven days from the date of the clearance letter in at least two local newspapers that are widely circulated in the region, one of which shall be in Gujarati language and the other in English. A copy each of the same shall be forwarded to the concerned regional Office of the Ministry.	Complied	

56.	It shall be mandatory for the project management to submit half yearly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard and soft copies to the regulatory authority concerned, on 1st June and 1st December of each calendar year.	Complied	
57.	The project authority shall also adhere to the stipulations made by the Gujarat Pollution Control Board.	Complied	
58.	The project authority shall inform the GPCB, Regional Office of MoEF an SEIAA about the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.	Complied	
59.	The SEIAA may revoke or suspend the clearance, if implementation of any of the above condition is not found satisfactory.	Point Noted	
60.	The above condition shall be enforced, inter-alia under the provision of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 and the Public Liability Insurance Act, 1991 along with their amendments and rules.	Point Noted	
61.	The Environmental Clearance is valid for five years from the date of issue.	Point Noted	

ANNEXURE-I

PHYSICO-CHEMICAL CHARACTERISTICS OF GROUND WATER FOR THE PERIOD OF OCTOBER-2015 TO MARCH-2016

Sr. No.	Parameters	Unit	PZ-1		PZ-2		PZ-3		PZ-4		PZ-5		PZ-6		PZ-7		PZ-8		PZ-9		PZ-10	
			Nov-15	Feb-16	Nov-15	Feb-16	Nov-15	Feb-16	Nov-15	Feb-16	Nov-15	Feb-16	Nov-15	Feb-16	Nov-15	Feb-16	Nov-15	Feb-16	Nov-15	Feb-16	Nov-15	Feb-16
1	Colour	Hazen	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL
2	Odour	--	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO	UO
3	pH	pH unit	8.15	7.98	7.71	7.82	8.16	7.96	7.72	7.92	7.82	7.78	7.77	7.80	7.82	7.82	7.92	7.94	8.01	7.75	7.82	7.83
4	TDS	mg /l	1043	1061	3289	2777	1415	1585	3092	1423	3031	3643	2060	2743	2072	2081	2020	1550	1643	2710	2834	2296
5	Turbidity	NTU	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL
6	Total Hardness	mg /l	300	224	636	500	220	204	256	192	284	296	280	204	276	364	336	212	224	404	628	320
7	Ca Hardness	mg /l	67	48	117	98	58	37	64	35	80	58	96	38	79	69	85	42	48	79	152	63
8	Mg Hardness	mg /l	32.0	28.0	84.0	62.0	18.0	27.0	23.0	25.0	20.0	37.0	10	26	19	47	30	26	25	51	60	40
9	Chloride	mg /l	364.0	352	1348.0	1120	564.0	580	948.0	520	1124.0	1292	720	1000	620	608	596	536	560	944	1244	668
10	Sulphate	mg /l	46.0	168	333.0	219	63.0	168	387.0	185	265.0	438	168	320	177	219	168	215	93	261	248	324
11	Flouride	mg /l	0.55	0.52	1.32	0.82	0.64	0.61	1.10	0.50	0.90	1.80	0.92	0.77	0.82	0.72	0.84	0.58	0.71	0.81	1.14	0.44
12	Nitrate	mg /l	2.22	0.00	8.86	11.08	13.29	8.86	19.94	6.65	15.51	19.94	13.29	8.86	93.08	95.25	95.25	8.86	17.7	2.22	11.08	17.72
13	Alkalinity	mg /l	160	120	200	120	484	192	796	248	1064	564	440	496	568	552	576	304	368	540	400	580
Water Table		meter	26	22	45	48	45	42	42	46	40	41	61	60	34	30	35	31	39	38	41	58

Note-			
	1	CL	Colourless
	2	UO	Unobjectionable

Location code	Location Name	Location code	Location Name	Location code	Location Name	Location code	Location Name
PZ-1	Yard 301(PZ-1)	PZ-4	Near Pipe storage yard spiral-2	PZ-7	Behind Admin Building	PZ-10	Near Vikaspuram
PZ-2	Harvesting Pond	PZ-5	Opp. of Sinter-1 sub store	PZ-8	Near STP		
PZ-3	Near Workshop Sprial-II	PZ-6	Near BF Canteen	PZ-9	Near New Guest House		

Annexure-II

STATUS OF GREENBELT & PLANTATIONS

The key objective of Green Belt Development & plantation to maintain ecological balance in and around the plant premises. It is our continuous endevour to carry out extensive plantation of different species of trees, shrubs & herbs to minimize the pollution load as well as for overall sustainable development.

The following species of trees, shrubs & herbs have been planted in and around the plant premises at different location of ***IPU-Samaghogha of JINDAL SAW LIMITED***. Seasonal flowers of various varieties have also been planted to enhance aesthetic view.

TREES:

Bottle Brush, Peltaphorum, Neem, Arjun, Saru, Ficus Nuda, Cordia, Cassia, Chiku, Khirni, *Prosopis cineraria* (Khezri), Ficus Benjamina, Ficas Nuda, Ficus Golden, Ficus Starlight, Accassia, Jakranda, Bahunia, Ravinia Palm, Foxtail Palm, Jamun, Badam, Ashok, Coconut, Arica Palm, Fan Palm, Anar, Phonix Palm, Guava, Amla, Spathodia, Shisham, Travellers Palm, Bhismarkia Palm, Alastonia, Amaltas, Champa, Karanj, Fishtail Palm, Date Palm, & Washingtonia Palm.

SHRUBS:

Hamelia, Duranta, Acalypha, Tabermontana (Chandni), Lantana, Euphorbia, Madhukamini, Cassiabiflora, Tecoma Capensis, Halmskodia, Dracena, Arelia, Aglonema, Diffenbachia, Petra Volublis, Clematis, Clerodendron, *Quisqualis Indica*, Begnonia Venusta, Gardenia, Manihot, Ixora, Beloprane, Iresine Red, Harsingar, Hibiscus, Ficus Panda, Thuja, Calenchu,Calliandra, Allamanda, Kadvi Mehendi , Croton, Bougainvillea, Rose, Galphamia, Kaner, Nicdivia,*Caesalpinnia pulchirema , Lagerstromea Indica, Nyctanthes arbotritis, Jasminum sambak, Jasminum humile,* Scheflerra & Yucca,

HERBS:

Strawberry, Vinca, Garbera, Rohea Spathia, Canna Dwarf, Spathyphyllum, Daisy, Asparagus, Fern, Chlorophytum, Chrysenthemum, Silver Dust, Kochea, Marigold, Cosmos, Ageratum, Partulaca, Gompherena & Spider Lily.

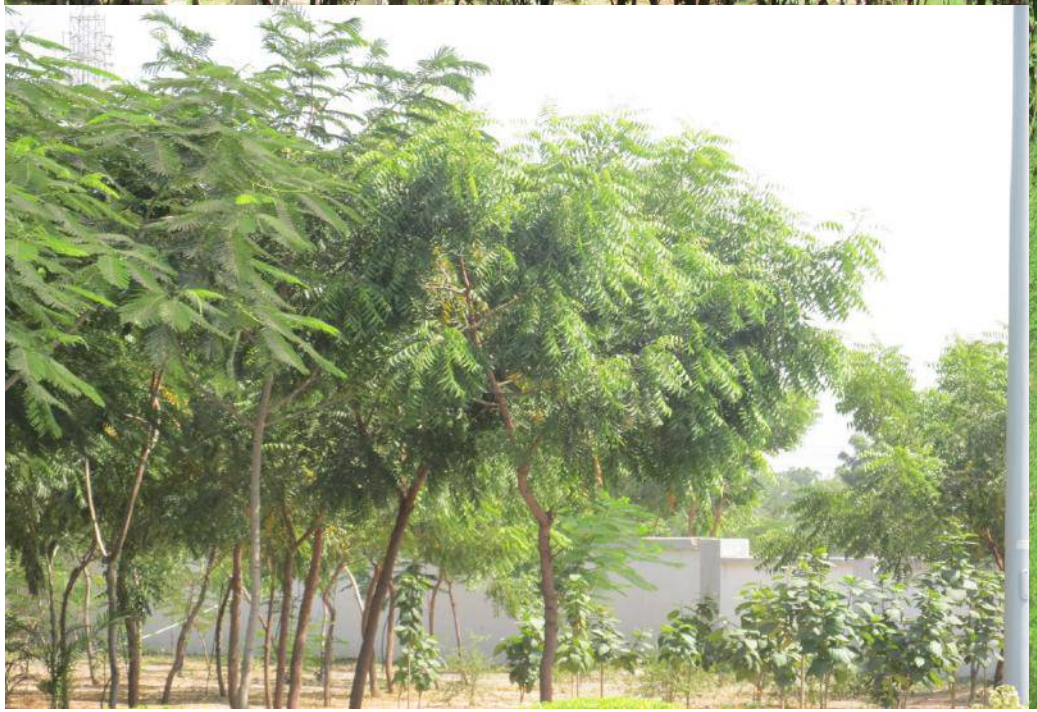
Details of Plantations Carried Out During the period of October -2015 to March -2016

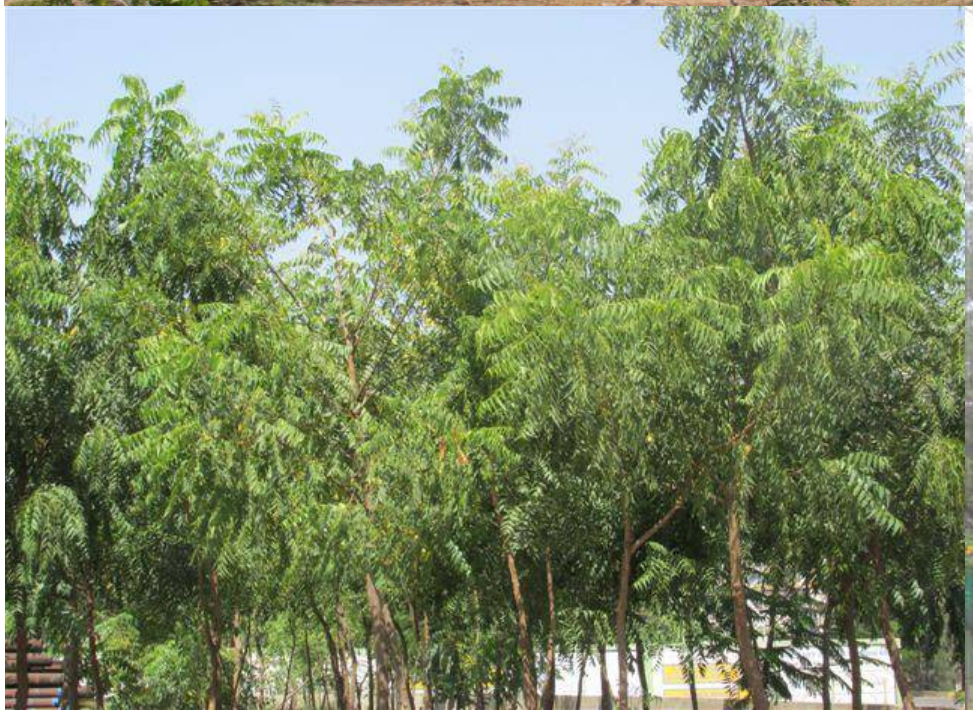
Month	No. of Saplings	Species Planted	Location
Oct-15	9157	Coconut, Ber, Anar, Mehendi Kadvi, Mango Kesar, Kaner Red, Arelia, Erica Palm, Desi Rose, English Rose, Ixora Red, Ixora Pink, Ficas Panda, Bougainvillea, Kaner Yellow, Hibiscas Red, Acalypha, Tecoma, Song of India, Chandni, Hamelia Dwarf.	Chairman Bungalow, Chairman Bungalow to HR building through fencing line, GM guest house to old colony corner, E & I Control Room(Colony), Admin Block, Water Treatment Plant, Outside temple, Cafeteria, JCO road & old colony boundary wall, Inside temple, Admin Block, VIP Guest House, New Coating Plant, Spiral-2, Dispatch road etc.
Nov-15	13203	Kadvi Mehendi, Ficas Nuda, Kaner Red, Ixora Red, Ixora Pink, Ficas Panda, Bougainvillea, Kaner Yellow,Hibiscas Red, Acalypha, Tecoma, Madhumalti, Chandni, Hamelia Dwarf, Cordia, Schefflera, Euphorbia Pink, Phoenix Palm, Ashoka, Zed Plants, Crysenthimum, Champa, Nicdivia,	Spiral-1, DISP trolley line, BF lab (Road side), Mould shop (Road side), SDP-2 trolley line, CPP (near LDO tank), New coating plant, old colony to Env. office road side, SDP-2 (Behind canteen), Cricket Ground, Spiral-2 pump house, Boundary Wall (Samaghogha to Gate no.2), Spral-2 (Back side of mm workshop), Fencing line (Diesel Pump), Chairman Bungalow, Savitrivihar, Admin Block.
Dec-15	5299	Tamarind, Saru, Peltaphorum, Jamun, Mango, Karanj, Cordia, Neem, Bottle Palm & Erica Palm	Samaghogha village,, Samaghogha village road side, Bhujpur Village, RMHS boundary wall, Spiral-2 Crane maintenance area, New colony near gate, Coating Plant near LPG area, Spiral-2 pump house & Children Park.
Jan-16	177	Arelia, Euphorbia, Nicdivia, Champa, Ashoka	RO plant, Vikaspuram,Spiral-2, New Colony Electrical Control Room
Feb-16	--	--	--
Mar-16	9786	Ixora Pink, Bougainvillea, Tecoma, Kaner Yellow, Ficus Nuda, Kadvi Mehebdi, Chiku, Mehendi, Guava, Banana, Ficas Panda, Ixora Red, Cordia, Nicdivia, Hibiscas, Phoenic Palm,	SDP-2, GM guest House, Sinter Plant, Coating Plant,Spiral-2, Water Treatment Plant, Back Side of Environment Office, Switch Yard, Temple area,Gate no.-2, Samaghogha Gram Panchayat, Cricket Ground, Nace Lab area.
Total	**37622**		

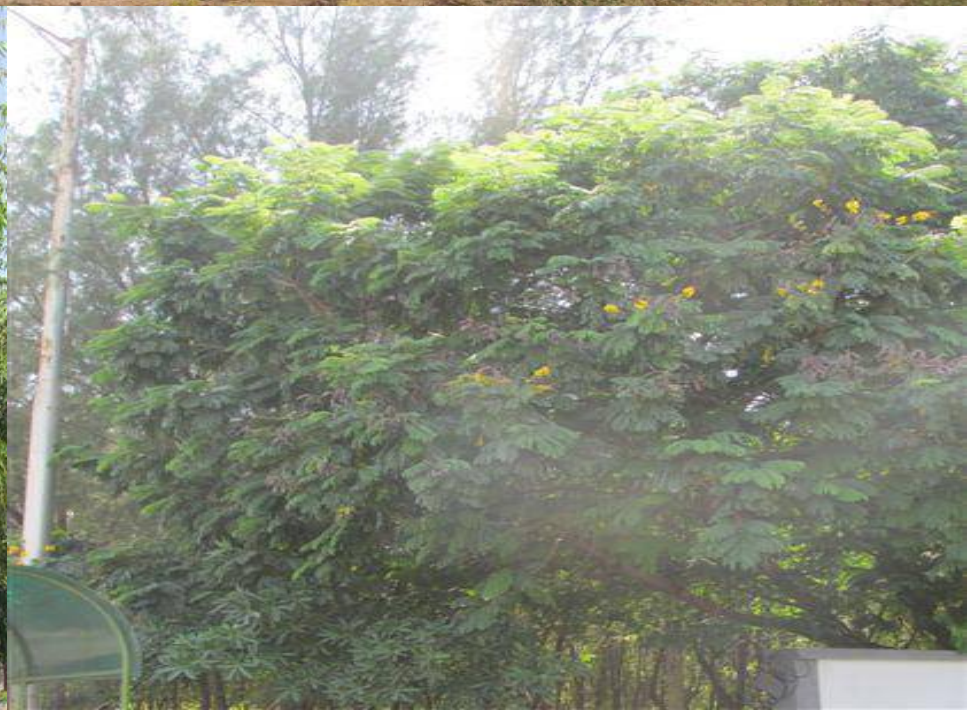
Numbers of total plantations as on dated 30th September, 2015 : **127890**
Number of saplings planted during Oct -15 to Mar -16 : **37622**
Total Numbers of Plants : **165512**

GREEN BELT & PLANTATION

MANGO GARDEN



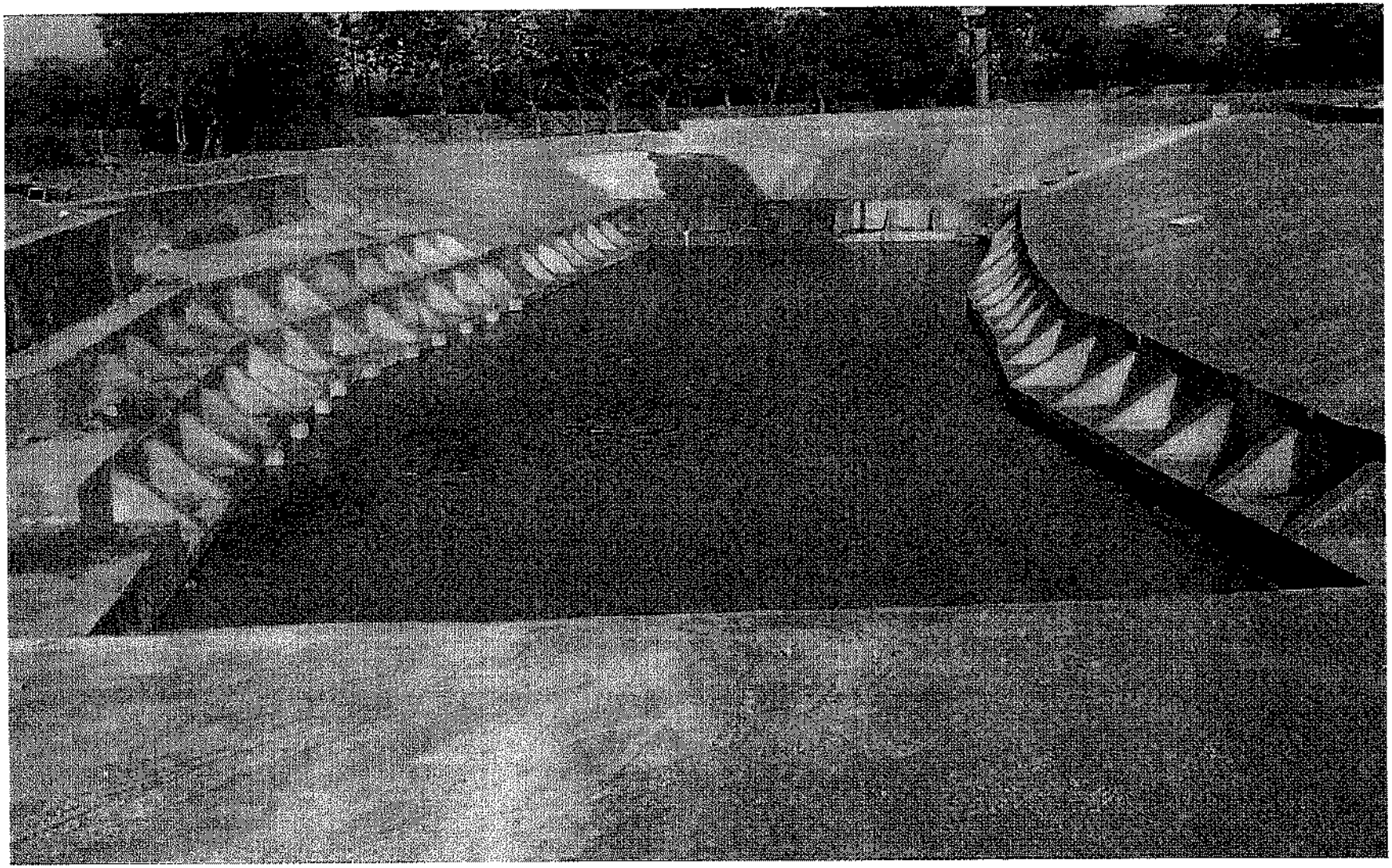





O.H.C
No Smoking Zone

Annexure-III

RAIN WATER HARVESTING STORAGE & RECHARGE POND AT INTEGRATED PIPE UNIT OF JINDAL SAW LIMITED



CREP COMPLIANCE

Under the Corporate Responsibility for Environmental Protection (CREP) charter, Jindal Saw Limited at Village- Samaghogha, Taluka- Mundra is committed to adopt of clean technologies and continual improvement in management practice, to conserve the natural resources and improve surrounding environment.

Statuses of conditions mentioned in the charter are as follows:-

Sr. No.	Conditions	Compliance Status	Remark
1.	**Blast Furnace** Direct inject of reducing Agent – BY Sep- 2013	Complied	The direct injection system (Pulverized coal injection system) was installed in November 2008 and under operation.
2	**Solid waste / Hazardous waste Management** (Utilization of steel melting shop (SMS)/ Blast furnace slag as per the following schedule) By 2006 – 80 % By 2007- 90% By up to December 2008 – 100%	Complied	Blast furnace slag is being sold to the cement manufacturers as well as it is being used in house slag grinding unit.
3	**Hazardous Waste** Charge of tar sludge /ETP sludge to coke oven by June 2003. Inventorization of hazardous waste (M&H) Rules 1989 as amended in 2000 and implementation of the rules by Dec 2003.	Tar sludge generation is not applicable. Operating the Dry Dedusting System (DDS) in place of Wet Dedusting system (GCP) in which we get directly dry dust from DDS system which is being used (100%) in sinter plant as a raw material. Hence no generation of ETP sludge. It is eco-friendly system and saving the approx. 130 – 140 m3/ day water consumption in process. It is non-hazardous material.	DDS is running successfully.
4	**Water conservation / Water pollution** To reduce specific water consumption to 5 m3/t for long product and 8 m3/t for flat products by December 2005	100% water is being recycled / re-used in the plant process.	
	To operate the CO_BP effluent treatment plant efficiently to achieve the notified effluent		

	discharge standards – by July 2003		
5	Installation of continuous stack monitoring system at major stacks and setting up of the online ambient air quality monitoring stations by June 2005.	Company has installed 05 nos. continuous stack monitoring system and 01 no. of online ambient air quality monitoring system. Order has already been placed to procure five more opacity meters.	Results coming within the limit as per our GPCB Limit.
6	To operate the existing pollution control equipment efficiently and to keep proper record of run hours, failure time and efficiency with immediate effect. Compliance report in this regard is submitted to CPCB/SPCB every month.	Complied	All pollution control equipments are being monitored every month and report is submitted to GPCB. Results are found well within the limit.
7	To implement the recommendations of Life Cycle Assessment (LCA) study sponsored by MOEF by December 2003.	Point Noted	(Recommendation waited from MOEF).
8	**The industry will initiate the steps to adopt the following clean technologies / measure to the performance of industry towards production, energy and environment.**		
	Energy recovery to top Blast Furnace (BF) gas.	Complied	BF gas is being utilized in boilers, PCI, Annealing furnace, sinter plant as a fuel etc.
	Use of tar free runner lining De-dusting of cast house at tap holes, runners, skimmers ladle and charging points.	Complied	Installed at raw material handling stock yard as well as cast house area.
	Suppression of fugitive emissions using nitrogen or other inert gas.	Complied	
	To study the possibility of slag and fly ash transportation back to the abandoned mines, to fill up the cavities through empty railway wagons while they return back to the mines and its implementation.	No any fly ash generated.	BF Slag is being sold to cement manufacturer and used to our own slag grinding unit. Fly ash generation is not applicable in our case.
	Processing of the waste containing flux & ferrous wastes through waste recycling plant.	Complied	Being used in sinter plant.
	To implement rain water harvesting.	Complied	
	Reduction of green house gases by: Use of by-product gases for power generation. Promotion of energy optimization technology including energy audit.	Complied	1- Company using blast furnace gas in our sinter plant, boilers, annealing furnace, PCI etc as fuel. 2-Installed Waste Heat Recovery Power Plant (30 MW) based on waste (flue)

			gases of coke oven.
	To set targets for resource conservation such as raw material, energy and water consumption to match international standards.	Complied	1) All blast furnace reject is being used in sinter plant. 2) Dry- De-dusting system has been established in place of wet de-dusting system which reduces **130 – 140 m3/ day** water consumption. By these methods we are conserving raw material, energy and water consumption. Company has taken initiative for GHG accounting (IS: 14064) & certify through Bureau Veritas.
	Up gradation in the monitoring and analysis facilities for air and water pollutants. Also to impart elaborate training to the manpower so that realistic data is obtained in the environmental monitoring laboratories.	Complied	Installed continuous stack and ambient monitoring system. All pollution control equipments are being monitored every month and report to be submitted to GPCB. Results are found well within the limit.
	To improve over all housekeeping.	Complied	Company using road sweeping machine & water sprinkling at regular basis for proper housekeeping.

Annexure-V (A)

National Ambient Air Quality Monitoring Results (October-15 to March-16)

Month	Name of Locations														
	Main Gate (NAAQMS-1)					Sinter Plant-1 (NAAQMS-2)					Nr. Workshop Spiral -II (NAAQMS-3)				
	PM 10	PM2.5	SO_2	NO_2	CO**	PM 10	PM2.5	SO_2	NO_2	CO**	PM 10	PM2.5	SO_2	NO_2	CO**
	Average Values (Unit:- µg/m^3)														
Oct-15	64.7	41.2	3.7	21.1	BDL	69.2	47.2	4.1	20.7	BDL	56.2	35.2	3.8	18.2	BDL
Feb-16	64.0	18.5	4.8	20.5		68.5	16.5	4.7	20.0		51.5	15.5	3.7	18.2	
Jun-16	56.0	20.0	4.1	19.6		67.5	21.5	4.9	18.7		44.5	15.5	3.1	17.4	
Jul-16	41.0	16.5	3.2	16.2		49.0	23.0	3.9	16.4		33.5	17.0	2.5	13.9	
Aug-16	49.9	21.3	4.1	18.3		55.5	24.5	4.5	16.7		38.1	17.3	2.7	14.8	
Sep-16	47.3	20.9	3.3	17.1		49.3	23.2	3.3	15.3		32.6	14.1	2.0	14.5	
Min	**41.0**	**16.5**	**3.2**	**16.2**	BDL	**49.0**	**16.5**	**3.3**	**15.3**	BDL	**32.6**	**14.1**	**2.0**	**13.9**	BDL
Max	**64.7**	**41.2**	**4.8**	**21.1**		**69.2**	**47.2**	**4.9**	**20.7**		**56.2**	**35.2**	**3.8**	**18.2**	
Avg.	**53.8**	**23.1**	**3.9**	**18.8**		**59.8**	**26.0**	**4.2**	**18.0**		**42.7**	**19.1**	**3.0**	**16.2**	

Ambient Air Quality Monitoring Results (October-15 to March-16)

Month	Name of Locations																			
	Old Colony (AAQ-1)						Nr. Rain Water Harvesting Pond (AAQ-2)						LPG Yard (AAQ-3)						Between Sinter & Spiral (AAQ-4)			
	Unit- µg/m3																			
	PM 10	PM2.5	SO_2	NO_2	CO**	Pb*	PM 10	PM2.5	SO_2	NO_2	CO**	Pb*	PM 10	PM2.5	SO_2	NO_2	CO**	Pb*	PM 10	PM2.5	SO_2	NO_2
Oct-15	25.0	10.0	1.6	8.6	BDL	ND	34.0	14.0	2.9	11.9	BDL	ND	39.0	20.0	2.7	10.5	BDL	ND	43.0	13.0	2.4	9.5
Nov-15	29.0	13.0	1.2	7.5			38.0	16.0	3.5	10.8			44.0	23.0	1.2	9.4			48.0	15.0	3.1	8.9
Dec-15	33.0	15.0	1.8	6.9			43.0	19.0	2.6	11.5			39	21.0	3.5	10.6			36	13	2.8	9.5
Jan-16	24.0	11.0	2.3	7.6			48.0	23.0	3.5	12.6			43.0	18.0	4.2	11.5			31.0	15.0	3.7	10.4
Feb-16	29.0	13.0	1.8	8.3			43.0	19.0	2.6	11.5			48.0	22.0	3.4	10.3			36.0	17.0	3.1	9.5
Mar-16	24.0	11.0	1.2	7.2			37.0	15.0	2.2	8.4			48.0	20.0	2.9	9.2			40.0	19.0	2.5	8.4
Min	**24.0**	**10.0**	**1.2**	**6.9**	BDL	ND	**34.0**	**14.0**	**2.2**	**8.4**	BDL	ND	**39.0**	**18.0**	**1.2**	**9.2**	BDL	ND	**31.0**	**13.0**	**2.4**	**8.4**
Max	**33.0**	**15.0**	**2.3**	**8.6**			**48.0**	**23.0**	**3.5**	**12.6**			**48.0**	**23.0**	**4.2**	**11.5**			**48.0**	**19.0**	**3.7**	**10.4**
Avg.	**27.3**	**12.2**	**1.7**	**7.7**			**40.5**	**17.7**	**2.9**	**11.1**			**43.5**	**20.7**	**3.0**	**10.3**			**39.0**	**15.3**	**2.9**	**9.4**

Month	Name of Locations																			
	Labour Colony (AAQ-5)						New Colony (AAQ-6)						VIP Guest House (AAQ-7)						Weigh Bridge No.-1 (AAQ-8)			
	PM 10	PM2.5	SO_2	NO_2	CO**	Pb*	PM 10	PM2.5	SO_2	NO_2	CO**	Pb*	PM 10	PM2.5	SO_2	NO_2	CO**	Pb*	PM 10	PM2.5	SO_2	NO_2
	Unit-µg/m3																			
Oct-15	45.0	16.0	3.9	10.1	BDL	ND	41.0	23.0	2.1	9.1	BDL	ND	35.0	21.0	3.3	12.3	BDL	ND	38.0	18.0	4.9	14.4
Nov-15	40.0	19.0	4.8	9.7			35.0	26.0	2.9	8.3			31.0	24.0	3.7	11.2			42.0	21.0	5.5	13.2
Dec-15	46.0	23.0	4.1	10.7			30.0	20.0	2.2	9.1			40.0	18.0	2.1	12.6			48.0	24.0	4.9	14.7
Jan-16	40.0	19.0	5.2	11.8			35.0	22.0	3.4	10.2			33.0	14.0	4.2	13.7			54.0	20.0	6.1	15.8
Feb-16	44	21	4.5	10.9			31	18.0	2.8	11.4			37.0	16.0	3.5	14.5			50.0	24.0	7.4	16.9
Mar-16	39	18	3.8	9.8			35	16	2.4	10.3			42	21	2.8	13.4			55	22	8.5	15.8
Min	**39.0**	**16.0**	**3.8**	**9.7**	BDL	ND	**30.0**	**16.0**	**2.1**	**8.3**	BDL	ND	**31.0**	**14.0**	**2.1**	**11.2**	BDL	ND	**38.0**	**18.0**	**4.9**	**13.2**
Max	**46.0**	**23.0**	**5.2**	**11.8**			**41.0**	**26.0**	**3.4**	**11.4**			**42.0**	**24.0**	**4.2**	**14.5**			**55.0**	**24.0**	**8.5**	**16.9**
Avg.	**42.3**	**19.3**	**4.4**	**10.5**			**34.5**	**20.8**	**2.6**	**9.7**			**36.3**	**19.0**	**3.3**	**13.0**			**47.8**	**21.5**	**6.2**	**15.1**

FUGITIVE EMISSION RESULTS (October-2015 TO March-2016)

Months	Name of Locations																													
	RMH Junction House (A-1)					RMH Stock House (A-2)					Sinter RMH Yard (A-3)					Sinter 2 Ground Hopper (A-4)					DISP CCM Area (A-5)					Sinter-1 Main to PMD (A-6)				
	Unit- µg/m3																													
	PM 10	SO_2	NO_2	CO	Pb*	PM 10	SO_2	NO_2	CO	Pb*	PM 10	SO_2	NO_2	CO	Pb*	PM 10	SO_2	NO_2	CO	Pb*	PM 10	SO_2	NO_2	CO	Pb*	PM 10	SO_2	NO_2	CO	Pb*
Oct-15	1263	12.6	27.9	BDL	ND	1479	11.8	28.5	BDL	ND	1135	13.7	26.7	BDL	ND	732	10.8	24.2	BDL	ND	516	14.4	31.5	BDL	ND	924	11.1	29.4	BDL	ND
Nov-15	1121	11.5	26.8			1302	10.7	27.4			1024	12.6	25.6			617	9.2	23.1			420	13.1	30.4			807	10.5	28.3		
Dec-15	1328	12.7	25.6			1211	11.9	26.3			1154	13.8	24.7			764	10.5	21.8			512	14.6	29.1			992	11.2	27.2		
Jan-16	1482	13.8	26.7			1310	12.7	27.2			1246	14.9	25.8			855	11.6	22.9			608	15.7	28.4			1081	12.3	26.1		
Feb-16	1381	12.9	25.8			1243	11.8	26.3			1108	13.7	24.9			746	10.7	21.6			513	14.8	27.5			950	11.4	25.2		
Mar-16	1457	13.8	26.7			1534	12.7	27.2			1211	14.6	25.8			920	11.6	22.5			619	15.7	28.4			1347	12.3	26.1		
Min	1121	11.5	25.6			1211	10.7	26.3			1024	12.6	24.7			617	9.2	21.6			420	13.1	27.5			807	10.5	25.2		
Max	1482	13.8	27.9			1534	12.7	28.5			1246	14.9	26.7			920	11.6	24.2			619	15.7	31.5			1347	12.3	29.4		
Avg.	1339	12.9	26.6			1347	11.9	27.2			1146	13.9	25.6			772	10.7	22.7			531	14.7	29.2			1017	11.5	27.1		

Annexure-V(B)

STACK MONITORING RESULTS WITH RESPECT TO DUCTILE IRON SPUN PIPE PLANT (October, 2015 to March, 2016)

Month	Stack attached to Common Stack Mg Converter I & II			Stack attached to Mg Converter-III			Stack attached to Anneling Furnace-I			Stack attached to Anneling Furnace-II			Stack attached to Anneling Furnace-III		
	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx
	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	ppm	ppm	mg/Nm^3	ppm	ppm	mg/Nm^3	ppm	ppm
Oct-15	43.0	ND	2.4	33.0	ND	1.7	15.0	1.8	6.1	10.0	2.3	5.8	12.0	1.6	5.3
Nov-15	48.0		2.9	33.0		2.2	12.0	2.2	6.9	16.0	2.7	6.2	19.0	1.9	5.8
Dec-15	37.0		3.2	26.0		2.8	15.0	2.6	6.1	19.0	3.1	7.2	21.0	2.1	6.5
Jan-16	30.0		2.7	34.0		2.1	11.0	3.2	7.5	14.0	3.8	7.9	17.0	2.9	8.1
Feb-16	37.0		2.1	29.0		1.7	15.0	3.8	8.3	10.0	4.2	8.8	12.0	3.5	7.6
Mar-16	43.0		1.9	34.0		1.4	18.0	3.2	7.5	14.0	3.7	8.1	20.0	4.1	8.5
Min.	**30.0**	ND	**1.9**	**26.0**	ND	**1.4**	**11.0**	**1.8**	**6.1**	**10.0**	**2.3**	**5.8**	**12.0**	**1.6**	**5.3**
Max.	**48.0**		**3.2**	**34.0**		**2.8**	**18.0**	**3.8**	**8.3**	**19.0**	**4.2**	**8.8**	**21.0**	**4.1**	**8.5**
Avg.	**39.7**		**2.5**	**31.5**		**2.0**	**14.3**	**2.8**	**7.1**	**13.8**	**3.3**	**7.3**	**16.8**	**2.7**	**7.0**

Month	Stack attached to Core Cleaning & Dusting-1			Stack attached to Core Cleaning & Dusting-2			Stack attached to Sand Reclamation			Stack attached to Zinc Coating-I			Stack attached to Zinc Coating-II		
	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	Nox	PM	SO2	Nox
	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	ppm	ppm	mg/Nm^3	ppm	ppm
Oct-15	49.0	ND	3.3	38.0	ND	3.9	37.0	4.2	10.9	14.0	NA		11.0	NA	
Nov-15	43.0		3.8	40.0		4.2	31.0	5.3	11.5	16.0			13.0		
Dec-15	37.0		4.3	NR			26.0	5.9	12.3	13.0			17.0		
Jan-16	32.0		5.2	41.0	ND	4.6	34.0	6.5	13.4	16.0			13.0		
Feb-16	38.0		4.8	46.0		4.1	39.0	7.2	14.3	18.0			15.0		
Mar-16	31.0		4.2	40.0		3.9	44.0	8.3	15.4	14.0			18.0		
Min.	**31.0**	ND	**3.3**	**38.0**	ND	**3.9**	**26.0**	**4.2**	**10.9**	**13.0**	NA		**11.0**	NA	
Max.	**49.0**		**5.2**	**46.0**		**4.6**	**44.0**	**8.3**	**15.4**	**18.0**			**18.0**		
Avg.	**38.3**		**4.3**	**41.0**		**4.1**	**35.2**	**6.2**	**13.0**	**15.2**			**14.5**		

NA- Not Applicable NR-Not running during visit

ND-Not Detectable

STACK MONITORING RESULTS WITH RESPECT TO DUCTILE IRON SPUN PIPE PLANT (October, 2015 to March, 2016)

Month	Stack attached to Zinc Coating-III			Stack attached to Zinc Coating-IV & V			Stack attached to Barrel Grinding-I			Stack attached to Barrel Grinding-II			Stack attached to Barrel Grinding-III		
	PM	SO2	Nox	PM	SO2	Nox	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx
	mg/Nm^3	ppm	ppm	mg/Nm^3	ppm	ppm	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3
Oct-15	15.0	NA		8.0	NA		NR			NR			NR		
Nov-15	10.0			6.0											
Dec-15	NR			9.0											
Jan-16	14.0	NA		11.0											
Feb-16	17.0			13.0											
Mar-16	15.0			11.0											
Min.	**10.0**	**NA**		**6.0**	**NA**		**NR**			**NR**			**NR**		
Max.	**17.0**			**13.0**											
Avg.	**14.2**			**9.7**											

Month	Stack attached to Barrel Grinding-IV & V			Stack attached to Core Shop-I			Stack attached to Core Shop-II			Stack attached to Core Shop-III			Stack attached to Core Shop-IV		
	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx
	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3
Oct-15	NR			28.0	3.2	2.2	30.0	2.7	1.8	17.0	3.4	1.7	36.0	2.3	2.4
Nov-15				19.0	2.8	1.9	26.0	2.1	1.5	31.0	2.6	2.1	29.0	1.8	1.8
Dec-15				15.0	2.1	1.3	21.0	2.7	2.2	38.0	1.9	1.8	34	2.4	1.5
Jan-16				11.0	1.8	2.1	16.0	2.1	2.7	25.0	1.4	2.4	31.0	1.9	2.6
Feb-16				15.0	1.3	2.9	25.0	1.7	3.1	20.0	1.9	2.8	37.0	2.4	2.1
Mar-16				19.0	1.6	3.5	21.0	2.2	3.8	27.0	2.4	2.5	31.0	2.9	3.7
Min.	**NR**			**11.0**	**1.3**	**1.3**	**16.0**	**1.7**	**1.5**	**17.0**	**1.4**	**1.7**	**29.0**	**1.8**	**1.5**
Max.				**28.0**	**3.2**	**3.5**	**30.0**	**2.7**	**3.8**	**38.0**	**3.4**	**2.8**	**37.0**	**2.9**	**3.7**
Avg.				**17.8**	**2.1**	**2.3**	**23.2**	**2.3**	**2.5**	**26.3**	**2.3**	**2.2**	**33.0**	**2.3**	**2.4**

NA- Not Applicable NR-Not running during visit

ND-Not Detectable

STACK MONITORING RESULTS WITH RESPECT TO DUCTILE IRON SPUN PIPE PLANT (October, 2015 to March, 2016)												
Month	Stack attached to Core Shop-V			Stack attached to Core Shop-VI			Stack attached to Bitumin Drying Oven-I			Stack attached to Common stack Bitument Dry Oven-II & Boiler		
	PM mg/Nm³	SO2 mg/Nm³	NOx mg/Nm³	PM mg/Nm³	SO2 mg/Nm³	NOx mg/Nm³	PM mg/Nm³	SO2 ppm	NOx ppm	PM mg/Nm³	SO2 ppm	NOx ppm
Oct-15	32.0	2.4	2.9	22.0	3.1	1.9	NR			73.0	20.7	18.5
Nov-15	38.0	3.3	2.3	16.0	2.4	2.6				68.0	21.8	19.6
Dec-15	42.0	2.9	2.8	20.0	1.6	2.1				73.0	23.9	21.5
Jan-16	46.0	2.3	3.1	15.0	1.3	2.9				64.0	25.1	23.4
Feb-16	42.0	1.8	3.8	28.0	2.1	2.2				68.0	26.4	24.7
Mar-16	46.0	1.5	3.2	35.0	2.7	2.9				61.0	27.5	25.8
Min.	**32.0**	**1.5**	**2.3**	**15.0**	**1.3**	**1.9**	**NR**			**61.0**	**20.7**	**18.5**
Max.	**46.0**	**3.3**	**3.8**	**35.0**	**3.1**	**2.9**				**73.0**	**27.5**	**25.8**
Avg.	**41.0**	**2.4**	**3.0**	**22.7**	**2.2**	**2.4**				**67.8**	**24.2**	**22.3**

Month	Stack attached to Shot Blasting-I			Stack attached to Shot Blasting-II			Stack attached to Shot Blasting-III		
	PM mg/Nm³	SO2 mg/Nm³	NOx mg/Nm³	PM mg/Nm³	SO2 mg/Nm³	NOx mg/Nm³	PM mg/Nm³	SO2 ppm	NOx ppm
Oct-15	33.0	ND		25.0	ND		NOT RUNNING		
Nov-15	21.0			18.0					
Dec-15	18.0			15.0					
Jan-16	17.0			16.0			15.0	ND	
Feb-16	NR			19.0			17.0		
Mar-16	26.0	ND		23.0			20.0		
Min.	**17.0**	**ND**		**15.0**	**ND**		15.0	**ND**	
Max.	**33.0**			**25.0**			**20.0**		
Avg.	**23.0**			**19.3**			**17.4**		

STACK MONITORING RESULTS WITH RESPECT TO BLAST FURNACE-I (OCTOBER, 2015 to MARCH, 2016)

Month	Stack attached to Boiler-I			Stack attached to Boiler-II			Stack attached to Dedusting System			Stack attached to Stove		
	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx
	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3	mg/Nm^3
Oct-15	10.0	ND		7.0	ND		14.0	ND		2.0	ND	
Nov-15	8.0			6.0			11.0			3.0		
Dec-15	10.0			11.0			3.0			2.0		
Jan-16	7.0			9.0			4.0			3.0		
Feb-16	9.0			10.0			5.0			2.0		
Mar-16	13.0			15.0			3.0			3.0		
Min.	7.0	ND		6.0	ND		3.0	ND		2.0	ND	ND
Max.	13.0			15.0			14.0			3.0		
Avg.	9.5			9.7			6.7			2.5		

Month	Stack attached to 6000 KVA DG			Stack attached to 3240 KVA DG			Stack attached to 3240 KVA DG			Stack attached to 1180 KVA DG		
	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx
	mg/Nm^3	PPM	PPM	mg/Nm^3	PPM	PPM	mg/Nm^3	PPM	PPM	mg/Nm^3	PPM	PPM
Oct-15	62	32.7	23.4	58	27.2	20.8	51	26.4	21.7	NR		
Nov-15	NR											
Dec-15												
Jan-16	67	33.8	24.5	63	28.3	21.9	58	27.5	22.8	NR		
Feb-16	NR			67	29.4	23.1	61	28.6	23.9			
Mar-16	58	33.4	26.1	62	30.5	24.2	69	29.7	22.8			
Min.	58.0	32.7	23.4	58.0	27.2	20.8	51.0	26.4	21.7	0.0	0.0	0.0
Max.	67.0	33.8	26.1	67.0	30.5	24.2	69.0	29.7	23.9	0.0	0.0	0.0
Avg.	62.3	33.3	24.7	62.5	28.9	22.5	59.8	28.1	22.8	0.0	0.0	0.0

NA- Not Applicable
ND-Not Detectable

NR-Not running during visit

Annexure-V(B)

STACK MONITORING RESULTS WITH RESPECT TO SINTER PLANT-I (OCTOBER, 2015 to MARCH, 2016)

Month	Stack attached to Sinter Furnace			Stack attached to Discharge end			Stack attached to Fuel & Flux Crusher and screening building		
	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx
	mg/Nm^3	ppm	ppm	mg/Nm^3	ppm	ppm	mg/Nm^3	ppm	ppm
Oct-15	57.0	ND	9.4	24.0	NA		33.0	NA	
Nov-15	46.0		8.7	33.0			25.0		
Dec-15	NR								
Jan-16	32.0	ND	8.8	23.0	NA		NR		
Feb-16	39.0		7.6	28.0			21.0	NA	
Mar-16	53.0		5.4	34.0			28.0		
Minimum	32.0	0.0	5.4	23.0	NA		21.0	NA	
Maximum	57.0	0.0	9.4	34.0			33.0		
Average	45.4	0.0	8.0	28.4			26.8		

Month	Stack attached to Fuel & Flux Crushing House			Stack attached to Secondary Mixure House			Stack attached to Primary Mixure House		
	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx
	mg/Nm^3	ppm	ppm	mg/Nm^3	ppm	ppm	mg/Nm^3	ppm	ppm
Oct-15	NR								
Nov-15									
Dec-15									
Jan-16									
Feb-16									
Mar-16									
Min.	NR								
Max.									
Avg.									

NA- Not Applicable
ND-Not Detectable

NR-Not running during visit

STACK MONITORING RESULTS WITH RESPECT TO SMALL DIA DUCTILE IRON SPUN PIPE PLANT
(OCTOBER, 2015 to MARCH, 2016)

Month	Stack attached to Mg Treatment			Stack attached to Anneling Furnace-1			Stack attached to Anneling Furnace-2		
	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx
	mg/Nm^3	PPM	PPM	mg/Nm^3	PPM	PPM	mg/Nm^3	PPM	PPM
Oct-15	31.0	NA		17.0	1.4	3.7	20.0	1.8	4.1
Nov-15	37.0			14.0	1.6	4.2	18.0	2.4	4.7
Dec-15	34.0			12.0	1.5	4.1	19.0	2.2	4.5
Jan-16	28.0			15.0	2.3	4.7	17.0	2.8	5.3
Feb-16	35.0			10.0	2.7	4.2	12.0	3.2	4.8
Mar-16	31.0			15.0	3.3	4.9	17.0	3.7	5.5
Min.	28.0	NA		10.0	1.4	3.7	12.0	1.8	4.1
Max.	37.0			17.0	3.3	4.9	20.0	3.7	5.5
Avg.	32.7			13.8	2.1	4.3	17.2	2.7	4.8

Month	Stack attached to Zinc Coating			Stack attached to Tri Grinding Section			Stack attached to Socket Cleaning		
	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx
	mg/Nm^3	PPM	PPM	mg/Nm^3	PPM	PPM	mg/Nm^3	PPM	PPM
Oct-15	26.0	NA		29.0	NA		21.0	NA	
Nov-15	22.0			20.0			16.0		
Dec-15	20.0			NR			14.0		
Jan-16	16.0			12.0	NA		18.0		
Feb-16	22.0			16.0			14.0		
Mar-16	35.0			12.0			18.0		
Min.	16.0	NA		12.0	NA		14.0	NA	
Max.	35.0			29.0			21.0		
Avg.	23.5			17.8			16.8		

STACK MONITORING RESULTS WITH RESPECT TO SINTER-II (OCTOBER, 2015 to MARCH, 2016)

Month	Stack attached to Sinter Furnace			Stack attached to Discharging end of dedusting system			Stack attached to Fuel crushing deduster system (Flux)		
	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx
	mg/Nm^3	ppm	ppm	mg/Nm^3	ppm	ppm	mg/Nm^3	ppm	ppm
Oct-15	64.0	ND	11.5	28.0	NA		24.0	NA	
Nov-15	59.0		10.6	34.0			18.0		
Dec-15	36.0		11.7	27.0			15.0		
Jan-16	46.0		9.5	24.0			23.0		
Feb-16	46.0		9.5	24.0			Not Running during visit		
Mar-16	42.0		6.3	29.0					
Min.	36.0	NA	6.3	24.0	NA		15.0	NA	
Max.	64.0		11.7	34.0			24.0		
Avg.	48.8		9.6	27.7			20.0		

Month	Stack attached to SMD			Stack attached to Fuel Screening deduster System (Flux screening)			Stack attached to PMD		
	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx
	mg/Nm^3	ppm	ppm	mg/Nm^3	ppm	ppm	mg/Nm^3	ppm	ppm
Oct-15	...			20.0	NA		...		
Nov-15				26.0					
Dec-15				22.0					
Jan-16									
Feb-16				23.0					
Mar-16				27.0					
Min.	...			20.0	NA		...		
Max.				27.0					
Avg.				23.6					

Month	Stack attached to Fuel Crushing deduster System (Fuel)			Stack attached to Transfer station no. 4 & 5 dedusting system			Stack attached to Pulverized coal injection		
	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx
	mg/Nm^3	ppm	ppm	mg/Nm^3	ppm	ppm	mg/Nm^3	ppm	ppm
Oct-15	16.0	NA		13.0	NA		19.0	1.8	0.91
Nov-15	13.0			11.0			22.0	1.4	0.87
Dec-15	12.0			8.0			20.0	1.8	0.95
Jan-16	Not Running during visit			Not Running during visit			Not Running during visit		
Feb-16									
Mar-16	18.0	NA		15.0	NA				
Min	12.0	NA		8.0	NA		19.0	1.4	0.87
Max	18.0			15.0			22.0	1.8	0.35
Avg	15.0			11.5			20.5	1.6	0.6

STACK MONITORING RESULTS WITH RESPECT TO BLAST FURNACE-II (OCTOBER, 2015 to MARCH, 2016)

Month	Stack attached to Dedusting System			Stack attached to Stove			Stack attached to Iron ore fine dust collecting system			Stack attached to Coke fine Building Dust Collecting System		
	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx	PM	SO2	NOx
	mg/Nm^3	PPM	PPM	mg/Nm^3	PPM	PPM	mg/Nm^3	PPM	PPM	mg/Nm^3	PPM	PPM
Oct-15	46.0	NA		4.0	NA		5.0	NA		6.0	NA	
Nov-15	42.0			2.0			4.0			7.0		
Dec-15	40.0			3.0			5.0			6.0		
Jan-16	27.0			2.0			4.0			5.0		
Feb-16	34.0			3.0			5.0			6.0		
Mar-16	40.0			2.0			4.0			7.0		
Min.	**27.0**	NA		**2.0**	NA		**4.0**	NA		**5.0**	NA	
Max.	**46.0**			**4.0**			**5.0**			**7.0**		
Avg.	**38.2**			**2.7**			**4.5**			**6.2**		

Annexure-VI (A)

Ambient Air Quality Monitoring with Respect to Noise (October-2015 to March-2016)

NOISE LEVELS [db (A)]

Month	Admin Building		Old Colony		Near LPG Yard		Near New Colony (School)		Near SDP-2		Near Coating Plant		Near Gate No.2	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
Oct-15	43.8	39.7	38.2	34.6	53.9	50.2	39.2	35.4	57.9	55.2	59.1	54.8	55.3	50.2
Nov-15	42.7	38.6	37.1	33.5	52.8	49.1	38.1	34.3	56.8	54.1	57.9	53.7	54.2	49.1
Dec-15	43.6	39.5	38.3	34.4	53.7	50.2	39.2	35.2	57.7	55.3	58.6	54.6	55.1	50.9
Jan-16	44.5	40.4	39.2	35.3	44.6	51.1	40.1	36.1	58.6	56.2	59.5	55.5	58.1	51.8
Feb-16	45.6	41.5	40.3	36.4	55.7	52.2	41.2	37.2	59.7	57.3	60.6	50.6	59.2	52.9
Mar-16	43.5	39.4	38.2	34.3	53.6	50.1	39.1	35.1	57.6	55.2	58.5	54.5	57.1	50.8
Min.	42.7	38.6	37.1	33.5	44.6	49.1	38.1	34.3	56.8	54.1	57.9	50.6	54.2	49.1
Max.	45.6	41.5	40.3	36.4	55.7	52.2	41.2	37.2	59.7	57.3	60.6	55.5	59.2	52.9
Avg.	44.0	39.9	38.6	34.8	52.4	50.5	39.5	35.6	58.1	55.6	59.0	54.0	56.5	51.0

MONTH	Near Sinter Plant 1		Near Sinter Plant-2		Near BF-1		Near BF-2		Near Main Gate Security Office	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
Oct-15	61.4	55.6	60.1	56.5	57.5	53.4	56.7	48.9	54.9	41.4
Nov-15	62.3	54.5	58.9	55.4	56.4	52.3	55.6	47.8	44.8	40.3
Dec-15	61.2	55.4	59.8	56.3	57.3	53.2	56.5	48.7	54.7	41.2
Jan-16	62.1	56.3	60.7	57.2	58.2	54.1	57.4	49.6	46.6	42.1
Feb-16	63.2	57.4	61.8	58.3	59.3	55.2	58.5	50.1	47.3	43.0
Mar-16	61.1	55.3	59.7	56.2	57.2	53.1	56.4	48.6	45.2	41.1
Min.	61.1	54.5	58.9	55.4	56.4	52.3	55.6	47.8	44.8	40.3
Max.	63.2	57.4	61.8	58.3	59.3	55.2	58.5	50.1	54.9	43.0
Avg.	61.9	55.8	60.2	56.7	57.7	53.6	56.9	49.0	48.9	41.5

Annexure- VI (B)

Work Place Noise Monitoring (October -2015 to March - 2016)

NOISE LEVELS [dB(A)]

Month	Sinter Plant-1				Sinter Plant-2				Blast Furnace -1						Blast Furnace-2		
	Inside Control Room	Inside Mechanical Room	Inside Electrical Room	Inside Plant office	Inside Control Room	Inside Operator Room	Near Proprtioning Building	Near Crusher House	Nr. Stock House	Inside Control Room	Inside Control Room of Cast House	Inside Laboratory	Inside Control Room of Blower	Inside Control Room of CPP	Inside control room	Nr. Stock House	Control Room of Blower House
Oct-15	40.5	46.4	46.9	49.7	49.1	58.7	61.3	68.2	64.5	45.1	46.3	41.8	56.4	52.6	56.4	63.9	65.2
Nov-15	41.6	47.5	48.1	50.8	50.5	59.9	63.2	69.4	65.6	46.2	47.8	42.9	57.5	53.7	57.8	65.1	66.7
Dec-15	43.6	49.5	50.2	52.7	51.4	60.8	64.1	70.3	66.8	47.6	48.2	43.8	58.9	54.5	58.7	66.3	67.6
Jan-16	44.8	50.7	51.4	53.9	52.3	61.7	65.5	71.2	67.9	48.7	49.3	44.9	60.1	55.6	59.6	67.2	69.5
Feb-16	45.9	51.8	50.3	55.2	53.4	62.8	66.7	72.3	69.1	49.8	50.4	46.1	61.2	56.7	60.7	68.3	70.6
Mar-16	43.8	49.7	48.2	53.1	51.3	60.7	65.6	70.2	66.9	47.6	48.3	43.9	59.1	54.6	58.6	66.2	68.5
Min.	40.5	46.4	46.9	49.7	49.1	58.7	61.3	68.2	64.5	45.1	46.3	41.8	56.4	52.6	56.4	63.9	65.2
Max.	45.9	51.8	51.4	55.2	53.4	62.8	66.7	72.3	69.1	49.8	50.4	46.1	61.2	56.7	60.7	68.3	70.6
Avg.	43.3	49.2	49.2	52.5	51.3	60.8	64.3	70.3	66.8	47.5	48.4	43.9	58.9	54.6	58.6	66.2	68.0

NOISE LEVELS [dB(A)]

Pipe Plant

Month	Inside control room of Anealling Furnace of DISP	Inside Control Room - Mill area of Spiral Plant-1	Nr. Pipe Cutting Area of Spiral Plant	Inside JCO Plant	Inside DISP Plant	Inside Coating Plant	Nr. CCM SDP-2	Inside control room of Anneling furnace of SDP-2	Nr. Zinc Coating SDP-2	Nr. Mould Shop
Oct-15	49.6	59.9	69.7	65.3	71.4	68.3	64.9	49.2	69.8	76.6
Nov-15	50.9	60.1	70.4	66.7	72.8	69.5	65.6	50.9	70.2	77.3
Dec-15	51.4	61.5	71.3	67.2	73.4	70.2	66.1	51.7	72.1	78.6
Jan-16	52.3	62.4	72.2	68.1	74.3	71.1	67.8	52.6	73.5	79.4
Feb-16	53.4	63.5	73.3	69.2	75.4	72.2	68.9	53.7	74.6	80.5
Mar-16	51.3	61.4	72.2	67.1	73.2	70.1	66.8	51.6	72.5	78.4
Min.	49.6	59.9	69.7	65.3	71.4	68.3	64.9	49.2	69.8	76.6
Max.	53.4	63.5	73.3	69.2	75.4	72.2	68.9	53.7	74.6	80.5
Avg.	51.5	61.5	71.5	67.3	73.4	70.2	66.7	51.6	72.1	78.5

Annexure – VII

(FORM NO. 32)

(Prescribed under Rule 68-T and 102)

Health Register

1. Serial Number in the register of Adult Workers : [illegible]
2. Name of Work : [illegible]
3. Sex : male
4. Date of Birth : [illegible] 1979

Department of Works	Name of Hazardous Processes	Dangerous process/ operation	Nature of job or occupation	Raw materials, products or by-products likely to be exposed to	Date of posting	Date leaving/ transfer to be or transfer	Reason for discharge/ leaving or transfer
B.P.	[illegible]	–	Filler	dust	1-1-2010	–	—
B.P.S.	[illegible]	—	Filler	[illegible]	"	[illegible]	[illegible]
B.P.S.	[illegible]	–	Filler	[illegible]	"	[illegible]	[illegible]
B.P.S.	[illegible]	–	Filler	[illegible]	"	[illegible]	[illegible]

Medical examination and the results thereof				If declared unfit for work				Signature with date of the Factory Medical officer/the certifying Surgeon
Date	Signs and symptoms observed during examination	Nature of tests & results thereof	Result Fit/ Unfit	Period of temporary withdrawal from that work	Reason for such withdrawal	Date of declaring him unfit for that work	Date issuing fitness certificate	
18-2-11	NAD	[illegible]	Fit	–	–	–	–	[illegible]
[illegible]	NAD	CBC	Fit	—	—	–		[illegible]
[illegible] 2013	NAD	" "	Fit		—	—	—	[illegible]
21/10/15	NAD	CBC [illegible]	Fit	—	—	–	—	[illegible]

(FORM NO. 32)

(Prescribed under Rule 68-T and 102)

Health Register

1. Serial Number in the register of Adult Workers : [illegible]
2. Name of Work : [illegible]
3. Sex : [illegible]
4. Date of Birth : 22/08/1998

Department of Works	Name of Hazardous Processes	Dangerous process/ operation	Nature of job or occupation	Raw materials, products or by-products likely to be exposed to	Date of posting	Date leaving/ transfer to be or transfer	Reason for discharge/ leaving or transfer
[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]	—	—
[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Medical examination and the results thereof				If declared unfit for work				Signature with date of the Factory Medical officer/Certifying Surgeon
Date	Signs and symptoms observed during examination	Nature of tests & results thereof	Result Fit/ Unfit	Period of temporary withdrawal from that work	Reason for such withdrawal	Date of declaring him unfit for that work	Date issuing fitness certificate	
[illegible]	[illegible]	[illegible]	[illegible]	—	—	—	—	[illegible]
[illegible]	[illegible]	[illegible]	Fit	—	—	—	—	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	—	—	—	—	[illegible]

(FORM NO. 32)

(Prescribed under Rule 68-T and 102)

Health Register

1. Serial Number in the register of Adult Workers : 17-0B
2. Name of Work : Abhilash pillai 7207
3. Sex : male -005
4. Date of Birth : 6/1/2008 / 12/5/1970

Department of Works	Name of Hazardous Processes	Dangerous process/ operation	Nature of job or occupation	Raw materials, products or by-products likely to be exposed to	Date of posting	Date leaving/ transfer to be or transfer	Reason for discharge/ leaving or transfer
BF	[illegible]	—	Rigger	[illegible]	4/11/08	—	—
BF	[illegible]	"	[illegible]	[illegible]	"	[illegible]	[illegible]
BF-II	mechanical [illegible]	—	" "	[illegible]	"	"	"
BF-II	" "	[illegible]	[illegible]	" "	"	[illegible]	[illegible]

Medical examination and the results thereof				If declared unfit for work				Signature with date of the Factory Medical officer/in certifying Surgeon
Date	Signs and symptoms observed during examination	Nature of tests & results thereof	Result Fit/ Unfit	Period of temporary withdrawal from that work	Reason for such withdrawal	Date of declaring him unfit for that work	Date issuing fitness certificate	
15/5/12	[illegible]	[illegible]	FIT	—	—	—	—	[illegible]
15/2/13	[illegible]	[illegible]	Fit	—	—	—	—	[illegible]
15/4/14	" "	[illegible]	FIT	—	—	—	—	[illegible]
31/10/15	[illegible]	[illegible]	FIT	—	—	—	—	[illegible]

(FORM NO. 32)

(Prescribed under Rule 68-T and 102)

Health Register

1. Serial Number in the register of Adult Workers : 1266
2. Name of Work : [illegible] Anil kumar *7765
3. Sex : Male
4. Date of Birth : 26/1/1964

Department of Works	Name of Hazardous Processes	Dangerous process/ operation	Nature of job or occupation	Raw materials, products or by-products likely to be exposed to	Date of posting	Date leaving/ transfer to be or transfer	Reason for discharge/ leaving or transfer
BF	[illegible]	—	[illegible]	[illegible]	1/1/10	—	—
BF	[illegible]	—	"	" "	" "	—	—
BF-2	[illegible]	—	[illegible]	[illegible]	"	[illegible]	[illegible]
BF-2	[illegible]	—	[illegible]	[illegible]	"	[illegible]	[illegible]

Medical examination and the results thereof				If declared unfit for work				Signature with date of the Factory Medical officer/ the certifying Surgeon
Date	Signs and symptoms observed during examination	Nature of tests & results thereof	Result Fit/ Unfit	Period of temporary withdrawal from that work	Reason for such withdrawal	Date of declaring him unfit for that work	Date issuing fitness certificate	
1/5/12	[illegible]	[illegible]	Unfit	—	—	—	—	[illegible]
1/5/13	[illegible] 6/36	" "	UNFIT	—	—	—	—	[illegible]
[illegible]	BP [illegible]	[illegible]	Fit	—	—	—	—	[illegible]
[illegible]	[illegible]	[illegible]	Fit	—	—	—	—	[illegible]

[FORM NO. 32]

(Prescribed under Rule 68-T and 102)

Health Register

67

Serial Number in the Register of Adult Workers :

Name of Worker : Parmar Sunil H. - 5034

Sex : M

Date of Birth : 30.05.1985

Department of Works	Name of Hazardous Processes	Dangerous process/ operation	Nature of job or occupation	Raw materials, products or by-products likely to be exposed to	Date of posting	Date leaving/ transfer to be or transfer	Reason for discharge/ leaving or transfer
[illegible]	Sinter plant	-	[illegible]	Heat Dust Noise	-	-	-
[illegible]	Sinter plant	-	"	"	-	-	-
[illegible]	Sinter plant	-	[illegible]	heat dust noise	3/5/2008	-	-
[illegible]	Sinter plant	-	" "	" "	" "	-	-
[illegible]	"	-	" "	" "	"	-	-
[illegible]	Sinter plant	-	[illegible]	" "	"	NAD	NAD
[illegible]	Sinter [illegible]		[illegible]	Dust noise	"	NAD	NAD

Medical examination and the results thereof				If declared unfit for work				Signature with date of the Factory Medical Officer/the Certifying Surgeon
Date	Signs and symptoms observed during examination	Nature of tests & results thereof	Result Fit/ Unfit	Period of temporary withdrawal from that work	Reason for such withdrawal	Date of declaring him unfit for that work	Date issuing fitness certificate	
12/09/09	NAD	Complete Blood test	Fit	-	-	-	12/09/09	[signature]
05/07/10	NAD	CHMC Bld test	Fit	-	-	-	-	[signature]
11/5/11	NAD	CBC [illegible]	Fit	-	-	-	-	[signature]
8/4/2012	NAD	CBC [illegible]	Fit	-	-	-	-	[signature]
4/5/13	NAD	"	Fit	-	-	-	-	[signature]
11/4/14	NAD	" "	Fit	-	-	-	-	[signature]
24/3/15	NAD	[illegible]	Fit	-	-	-	-	[signature]

[FORM NO. 32]
(Prescribed under Rule 68-T and 102)

Health Register

Serial Number in the Register of Adult Workers : 93

Name of Worker : [illegible]

Sex : M

Date of Birth : [illegible] 1988

Department of Works	Name of Hazardous Processes	Dangerous process/ operation	Nature of job or occupation	Raw materials, products or by-products likely to be exposed to	Date of posting	Date leaving/ transfer to be or transfer	Reason for discharge/ leaving or transfer
[illegible]	mechanical maint	welding	welder	Heat Fumes	26-03-06	—	—
[illegible]	mechanical maint	welding	welder	Heat Fumes	26 [illegible]	—	—
n/c m/m	mechanical maint	welding	welder	Heat dust [illegible]	"	—	—
[illegible]	mechanical maint	welding	welder	"	"	—	—
[illegible]	" " "	[illegible]	[illegible]	[illegible]	"	[illegible]	[illegible]
[illegible]	[illegible]	—	[illegible]	[illegible]	"	[illegible]	[illegible]

Medical examination and the results thereof				If declared unfit for work				Signature with date of the Factory Medical Officer/the Certifying Surgeon
Date	Signs and symptoms observed during examination	Nature of tests & results thereof	Result Fit/ Unfit	Period of temporary withdrawal from that work	Reason for such withdrawal	Date of declaring him unfit for that work	Date issuing fitness certificate	
16-03-09	Vision correction	Complete Blood & urine test [illegible]	FIT	—	—	—	16-03-09	[signature]
1/7/10	Vision [illegible]	"	FIT	—	—	—	—	[signature]
" 5/11	RE 6/9	CBC [illegible]	FIT	—	—	—	—	[signature]
19/11/12	RE 6/18	CBC [illegible]	FIT	—	—	—	—	[signature]
[illegible]	RE 6/9	[illegible]	FIT	—	—	—	—	[signature]
[illegible]	[illegible]	[illegible]	FIT	—	—	—	—	[signature]

[FORM NO. 32]

(Prescribed under Rule 68-T and 102)

Health Register

Serial Number in the Register of Adult Workers : 96

Name of Worker : [illegible] 5029

Sex : M

Date of Birth : 01.06.1988

Department of Works	Name of Hazardous Processes	Dangerous process/ operation	Nature of job or occupation	Raw materials, products or by-products likely to be exposed to	Date of posting	Date leaving/ transfer to be or transfer	Reason for discharge/ leaving or transfer
[illegible]	[illegible] plant	—	Operator	DUST	25-07-06	—	—
[illegible]	[illegible] plant	—	Operator	DUST	25/7/06	—	—
[illegible]	[illegible] plant	—	"	"	"	—	—
[illegible]	[illegible] plant	—	"	"	"	—	—
[illegible]	"	—	"	"	"	—	—
[illegible]	Stone plant	—	Operator	" "	25/7/06	NMD	NMD
[illegible]	[illegible]	—	[illegible]	[illegible]	"	NMD	NMD

Medical examination and the results thereof				If declared unfit for work				Signature with date of the Factory Medical Officer/ Certifying Surgeon
Date	Signs and symptoms observed during examination	Nature of tests & results thereof	Result Fit/ Unfit	Period of temporary withdrawal from that work	Reason for such withdrawal	Date of declaring him unfit for that work	Date issuing fitness certificate	
16/03/09	NAD	[illegible] Blood test [illegible] NAD	Fit	—	—	—	16/03/09	
03/7/10	NAD	"	Fit	—	—	—	—	
6/6/11	NAD	CBC, [illegible]	Fit	—		—	—	
8/6/12	NAD	CBC [illegible]	Fit	—	—	—	—	
4/5/13	NAD	" "	FIT	—	—	—	—	
05/6/14	NAD	" "	Fit	—	—	—	—	
[illegible]	NAD	[illegible]	Fit	—	—	—	—	

[FORM NO. 32]

(Prescribed under Rule 68-T and 102)

Health Register

Serial Number in the Register of Adult Workers : 97

Name of Worker : Salamsi Babellai 5057

Sex : M

Date of Birth : 15-07-1981

Department of Works	Name of Hazardous Processes	Dangerous process/ operation	Nature of job or occupation	Raw materials, products or by-products likely to be exposed to	Date of posting	Date leaving/ transfer to be or transfer	Reason for discharge/ leaving or transfer
[illegible]	sinter plant	—	operator	Dust	—	—	—
[illegible]	sinter plant	—	operator	Dust	—	—	—
[illegible]	sinter plant	—	"	Dust, noise	3/5/2006	—	—
[illegible]	"	—	"	" "	"	—	—
[illegible]	"	—	"	" "	—	—	—
[illegible]	Sinter plant	—	operator	" "	03/06/06	NAD	NAD
[illegible]	Sinter [illegible]	—	operator	Dust, noise	"	[illegible]	[illegible]

Medical examination and the results thereof				If declared unfit for work				Signature with date of the Factory Medical Officer / Certifying Surgeon
Date	Signs and symptoms observed during examination	Nature of tests & results thereof	Result Fit/ Unfit	Period of temporary withdrawal from that work	Reason for such withdrawal	Date of declaring him unfit for that work	Date issuing fitness certificate	
16-03-09	NAD	Complete Blood, urine [illegible]	Fit	—	—	—	[illegible]	[signature]
05-7-10	NAD	"	Fit	—	—	—	—	[signature]
[illegible] 2011	NAD	CBC, UR, AP	Fit	—	—	—	—	[signature]
8/6/12	NAD	CBC, UR, AP	Fit	—	—	—	—	[signature]
31/5/13	NAD	" "	Fit	—	—	—	—	[signature]
05/4/14	NAD	" "	Fit	—	—	—	—	[signature]
[illegible]/15	NAD	[illegible]	Fit	—	—	—	—	[signature]

Annexure-VIII

CSR EXPENSES FOR THE PERIOD OF APRIL, 2015 TO MARCH, 2016 AS ACTIVITIES CARRIED OUT BY JINDAL SAW LIMITED, IPU-SAMAGHOGHA-GUJARAT

Nature of Activities	Whom to paid	Amount (Rs.)
Medical Expenses	Medical camps, Mobile dispensaries, General Medical Treatment in OPD & Indoor, Blood Donation Camp & Medicines etc.	3191331.00
Expenses incurred under Education program	Salary paid to teachers	222699.00
	Annual Sports activities at Samaghogha School	15000.00
Environmental Expenses	Incurred by the company	15240804.00
Social Welfare Expenses	Animal Husbandry - Grass distribution at Samaghogha & Bhujpur	1880103.00
	Salary paid to security at Bhujpur village	104000.00
	Donation to Samajwadi at Bhujpur	200000.00
	Infrastructure Development – Construiction of Overhead tank at Samaghogha Village	2,45,010.00
Other Expenses	Donation for Navaratri Mahotsav at Mundra	5000.00
	Misc. Expenses related to CSR	556010.00
Total		**21659957.00**

ANNEXURE-IX

EXISTING LAND DETAILS

Total Area as on 30/09/2015

Sr. No	Survey no.	Acres	Guntha
1	324	6	10
2	325/1	16	13
3	288/1	3	29
4	293	5	19
5	318	4	28
6	301	16	19
7	297	6	28
8	317	7	20
9	321	4	13
10	325/2	2	1
11	300	5	31
12	326	5	3
13	336/2	3	17
14	336/3	0	38
15	Kharaba 16800 sqm.	4	6
16	Kharaba 9230 sqm.	2	11
17	Kharaba 4047	1	0
18	Vill.Road 8930 sqm.	2	8
19	Vill.Road 3455 sqm.	0	34
20	340/1	3	27
21	298	7	3
	286	6	12
	287	7	13
22	294/1	3	17
23	336/1	6	20
24	320	6	19
25	294/2	2	14
26	292	6	8
27	288/3	3	32
28	322	4	31
29	337	4	39
30	323	6	30

31	316/1	14	34
32	295	9	30
	296/1	6	10
33	335	6	22
34	334/1	4	0
35	319	7	10
	296/2	2	20
36	713/17	8	4
37	713 paiky 44	9	39
	713 / 44	4	8
38	330	5	1
39	294/3	1	32
40	339/1	1	14
41	340/2	3	37
42	316/2	1	27
43	713/ paiky 64/1	5	31
44	713/ paiky 76	9	39
45	713/22 paiky 1	3	15
46	713/22 paiky 2	3	15
45	299	6	10
46	332/1	0	1.17
47	332/2	0	20.16
	Total	**260**	**1006.33**

LAND DETAILS

Total Area as on 31/03/2016

AREA	Acres
Total Area	**285.60**

Annexure-X

TRAINING PROGRAMS CONDUCTED From October, 2015 to March,2016										
S. No.	AREA	Category	Date	Faculty	MCS	Staff	Worker	No. of Participants	Training hours	Man-hours
1	Industrial Safety	Internal	07.10.2015	HSE Team	0	15	48	63	2.5	157.5
2		Internal	04.11.2015	Mr. Dilip Dodiya	0	2	44	46	2.5	115
3		Internal	17.12.2015	Mr. Prabhakar Kumar	0	10	54	64	2.5	160
4		Internal	07.01.2016	Mr. D.B.Dodiya	0	11	35	46	2	92
5		Internal	03.02.2016	Mr. Prabhakar Kumar	0	8	26	34	2.5	85
6		Internal	23.02.2016	Mr. Deepak & Mr. Kailash Swain	0	5	33	38	2	76
7		Internal	28.03.2016	Mr. Aswin B.	0	7	42	49	2	98

ANNEXURE-XI

DETAILS OF PERSONNEL PROTECTIVE EQUIPMENTS ISSUED TO WORKERS / EMPLOYEES (October, 2015 to March, 2016)

Sr. No.	Protective Appliances	Yes / No	Quantity							
1	Goggles	Yes	13993							
2	Gloves	Yes	Leather (Single Palm) 14"				Cotton	Rubber	Shock Proof	
			48184				**35245**	**718**	**70**	
3	Gumboot	Yes	38							
4	Helmets	Yes	Sky Blue	Sky Blue	Navy Blue	White	Green	Red	Yellow	Driving
			Fiber	PVC	PVC	PVC	PVC	PVC	PVC	---
			253	**249**	**277**	**240**	**122**	**102**	**784**	**106**
5	Safety Shoes	Yes	**5970**							
6	Welding screen	Yes	**234**							
6	Ear Plugs	Yes	**29672**							
7	Lather Apron	Yes	**207**							
8	Nose Mask	Yes	**42927**							
9	Boiler Suit	Yes	**310**							
10	Leg guard	Yes	**108**							
11	Leather hand sleeve	Yes	**215**							
12	Safety Belt	Yes	45							
13	Soap, Skin Cream etc.	Yes	As & when required							

Annexure -XII

JINDAL SAW LIMITED

SAMAGHOGHA MANUFACTURING DIVISION

On Site Emergency Plan

(As per GFR 68 J, Schedule – 8A)

PREPARED BY	VERIFIED BY	APPROVED BY
Manager (HSE)	Head (HR,ER & Safety)	Factory Manager

JINDAL SAW LTD

Samaghogha Manufacturing Division

DECLARATION OF EMERGENCY

Fire	Wailing tone for 10 seconds followed by 5 seconds gap – repeated for 3 times
LPG Gas Leakage	Wailing tone for 20 seconds followed by 5 seconds gap – repeated for 3 times
CO gas Leakage	Wailing tone for 30 seconds followed by 5 seconds gap – repeated for 5 times
All clear	Continuous tone for 3 minutes
Testing	Every Monday –Normal Factory Siren – 01 Minute at 1000 Hrs.

On- Site Emergency Plan

CALL

FIRE/SAFETY- 6333	AMBULANCE- 6444	HSE-6218/6225
MO-9925150770	MO-9925156000	MO-992510270

JINDAL SAW LTD

Samaghogha Manufacturing Division

On- Site Emergency Plan

Updated On: 25th April-2014

PREPARED BY

HSE DEPARTMENT
Samaghogha (IPU)
Pragpar-Mandvi Road
Taluka-Mundra
District-Kutchh (GUJ)

CONTENTS

FOREWORD

The management of Jindal Saw Limited, Samaghogha is committed to the establishment and maintenance of action plans to meet any emergency for the purpose of fulfilling the objectives of safety, quality and environment management systems as adopted by us.

In order to harmonize the **"On Site Emergency Plans"** of all plants operating within Samaghogha complex, a set of guidelines have been identified and included in this plan.

The guidelines given in this plan are broadly directional, within which the procedures are to be formulated.

UNIT HEAD

Annexure-XIII

RAJKOT MUNICIPAL CORPORATION

FIRE & EMERGENCY SERVICES, "Dr.Ambedkar bhavan",
Dheber bhai Road, RAJKOT-360 001. Ph.(0281)2227222
fax- (0281)2226185, Email- rkmaheshwari@rmc.gov.in

R.M.C.F.E.S.No.C.F.O.245.

DATE:-09-12-2015.

To,
The Factory Manager,
"JINDAL SAW LTD.",
Village: Samagogha,
Mandvi Proagpar High way,
Taluka: Mundra,
District: Kutch.

-: RENWAL FIRE NO OBJECTION CERTIFICATE :-

(1)RMC.F&E.S.CFO.No.218, Date:-08.01.2015.

This is to Renewal Certify that the factory manager, "JINDAL SAW LTD.",Village:Samaghoga, Mandvi Road,Mundra Taluka,District:-Kutch.Gujrat-370 415. Ref:-JSL/HSE/CFO/15/01, Date:-27-11-2015 has applied for Renewal of No Objection Certificate for firefighting arrangement.

The "JINDAL SAW LTD.", has submitted Emergency Plan of " inside and outside" with details given in plan from page No.1 to 20 is adequately and effectively installed with the fire prevention & Protection systems as required under the Protection of petroleum act.2004 and as par explosive Department guide line so there is no objection to issue the certificate of Renewal N.O.C...

- **This Certificate issued on the following Conditions:-**

1. This certificate is valid up to 01-01-2017 then after it should be renewed against inspection and testing report.
2. Training of handling Jindal Saw Ltd,Emergency with first aid fire fighting, personal Protection equipment and evacuation and use of antidote should be given to all staff Regularly
3. Personal Protective Equipment should be installed.
4. According instating of fire officer fire point should be kept in future premise.
5. 1,50,000 Liters. Water should be reserved for fighting in underground water tank and 20,000 Liters. In overhead tank.
6. The Practice of Mock drill should be conducted twice in a year.
7. Fire Jindal Saw Ltd.Precaution and Prevention sign should put on Notice Board Each Floor area main gate and Health Fire Hazard is Flashes.
8. List of Antidotes of Hazards toxic and poisonous should be kept ready in Fire Emergency Point.
9. Emergency Services Like Fire, Medical, Police, Health and Factory director Telephone Numbers should be list out put on hand in security entry point.
10. First aid fire fighting & medical equipment should be kept in Working Condition.

Breach of any of the above conditions shall automatically render this Certificate invalid and cancelled and will render the concerned Owner / Manager / Safety In charge of Jindal Saw Ltd. liable for action.

Place : Rajkot
Date : 09-12-2015.

Dy.Chief Fire Officer
Fire & Emergency Services
Rajkot Municipal Corporation

Chief Fire Officer
Fire & Emergency Services
Rajkot Municipal Corporation

ANNEXURE-XIV

DOMESTIC WASTE WATER QUALITY MONITORING RESULTS

Sr. No.	Parameters	Unit	PERIOD FROM October-2015 TO March-2016											
			October		November		December		January		February		March	
			Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
1	pH	pH Unit	7.65	7.3	7.55	7.25	7.54	7.25	7.59	7.31	7.52	7.29	7.48	7.25
2	BOD (3 days at 27 °C)	mg/l	192	15	169	12	160	10	173	12	186	13	172	11
3	Total dissolved solids	mg/l	1605	1720	1524	1655	1520	1650	1611	1762	1693	1854	1539	1745
4	COD	mg/l	239	52	267	48	260	45	241	42	278	45	249	30
5	Suspended Solids	mg/l	273	19	251	17	245	18	274	20	306	22	271	20
6	Oil & Grease	mg/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
7	Residual Chlorine	mg/l	---	0.63	---	0.60	---	0.58	---	0.65	---	0.60	---	0.65

ANNEXURE- XV

JINDAL	**JINDAL SAW LTD (IPU)** QUALITY CONTROL DEPARTMENT **COKE ANALYSIS REPORT**	Document No.:JSL/IPU/COKE/QA/FR-13 Version No.: 1.2 Effective Date: 01.01.2015

Supplier : M/S JINDAL SAW LTD (IPU)

Date : 12.01.2016

Lot No. : 11-01

Date of Supply : 11.01.2016

Batch NO: 4020101020-11

Proximate Analysis

% V.M	: 1.20
% Ash	: 12.96
% F.C	: 85.84
% P	: 0.044
% S	: 0.516

Calorific Value (K CaL/KG) : 7600

Specification:

V.M	: 1.50 % Max
ASH	: 15 % Max

Remarks:

Authorized by

Jindal Saw Limited (IPU) - Samaghogha

Prepared by

Authorized by

THIRD PARTY MONITORING REPORT

OCTOBER-2015 TO MARCH-2016

REFER- ANNEXURE- V (A) & V(B),

ANNEXURE-VI (A) & VI (B),

ANNEXURE-XIV

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 603/10/2015-16

Date: 05/11/2015

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	---	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	---	06/10/2015	06/10/2015	06/10/2015
03.	Time of sampling	---	8.00	8.25	8.50
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	---	N	N	N
06.	Average Wind Speed	Km/Hr.	1.6	1.6	1.6
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m3	100	100	100
10.	Measured Concentration of PM 10	µg/m3	58	46	31
11.	Permissible limits for PM 2.5*	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	26	21	17
13.	Permissible limits for SO_2*	µg/m3	80	80	80
14.	Measured Concentration of SO_2	µg/m3	2.8	3.2	2.3
15.	Permissible limits for NO_2*	µg/m3	80	80	80
16.	Measured Concentration of NO_2	µg/m3	13.6	11.4	9.5
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009. &.** Results are 8 hourly monitoring values.

Royal Environment Auditing & Consultancy Service

Rajkot

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 604/10/2015-16

Date: 05/11/2015

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	---	07/10/2015	07/10/2015	07/10/2015
03.	Time of sampling	---	8.10	8.35	9.00
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	---	N	N	N
06.	Average Wind Speed	Km/Hr.	1.6	1.6	1.6
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m3	100	100	100
10.	Measured Concentration of PM 10	µg/m3	52	49	35
11.	Permissible limits for PM 2.5*	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	23	25	14
13.	Permissible limits for SO_2*	µg/m3	80	80	80
14.	Measured Concentration of SO_2	µg/m3	2.1	3.7	2.5
15.	Permissible limits for NO_2*	µg/m3	80	80	80
16.	Measured Concentration of NO_2	µg/m3	12.7	10.8	9.2
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009, & ** Results are 8 hourly monitoring values.

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 605/10/2015-16

Date: 05/11/2015

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	---	Main Gate ($)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	---	12/10/2015	12/10/2015	12/10/2015
03.	Time of sampling	---	8.20	8.50	9.15
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	---	SE	SE	SE
06.	Average Wind Speed	Km/Hr.	0.64	0.64	0.64
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m3	100	100	100
10.	Measured Concentration of PM 10	µg/m3	49	42	37
11.	Permissible limits for PM 2.5*	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	22	18	13
13.	Permissible limits for SO_2*	µg/m3	80	80	80
14.	Measured Concentration of SO_2	µg/m3	1.8	2.1	1.5
15.	Permissible limits for NO_2*	µg/m3	80	80	80
16.	Measured Concentration of NO_2	µg/m3	17.6	15.1	14.3
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)
All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009. & ** Results are 8 hourly monitoring values.

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 606/10/2015-16 Date: 05/11/2015

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	---	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	---	13/10/2015	13/10/2015	13/10/2015
03.	Time of sampling	---	8.30	9.00	9.25
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	-----	SE	SE	SE
06.	Average Wind Speed	Km/Hr.	0.66	0.66	0.66
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m3	100	100	100
10.	Measured Concentration of PM 10	µg/m3	46	40	33
11.	Permissible limits for PM 2.5*	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	20	15	10
13.	Permissible limits for SO_2*	µg/m3	80	80	80
14.	Measured Concentration of SO_2	µg/m3	2.3	3.3	1.9
15.	Permissible limits for NO_2*	µg/m3	80	80	80
16.	Measured Concentration of NO_2	µg/m3	18.4	14.2	13.1
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)
All Calibration due on : 25/05/2016
BDL= Below Detectable Limit
*Permissible Limits are as per NAAQ Standard 16th November 2009. & ** Results are 8 hourly monitoring values.

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 607/10/2015-16

Date: 05/11/2015

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	----	19/10/2015	19/10/2015	19/10/2015
03.	Time of sampling	----	8.10	8.30	8.55
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	NW	NW	NW
06.	Average Wind Speed	Km/Hr.	1.03	1.03	1.03
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling.	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	µg/m3	100	100	100
10.	Measured Concentration of PM 10	µg/m3	50	57	39
11.	**Permissible limits for PM 2.5***	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	28	29	16
13.	**Permissible limits for SO_2***	µg/m3	80	80	80
14.	Measured Concentration of SO_2	µg/m3	3.1	2.4	1.7
15.	**Permissible limits for NO_2***	µg/m3	80	80	80
16.	Measured Concentration of NO_2	µg/m3	16.3	15.1	11.8
17.	**Permissible limit for CO ****	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used : (1) 3 Nos. RDS (APM - 217 SL). (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)
All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009. & ** Results are 8 hourly monitoring values.

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 608/10/2015-16

Date: 05/11/2015

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	----	20/10/2015	20/10/2015	20/10/2015
03.	Time of sampling	----	8.20	8.40	9.05
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	WNW	WNW	WNW
06.	Average Wind Speed	Km/Hr.	1.2	1.2	1.2
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	µg/m3	100	100	100
10.	Measured Concentration of PM 10	µg/m3	42	51	36
11.	**Permissible limits for PM 2.5***	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	24	21	19
13.	**Permissible limits for SO_2***	µg/m3	80	80	80
14.	Measured Concentration of SO_2	µg/m3	2.8	1.9	1.3
15.	**Permissible limits for NO_2***	µg/m3	80	80	80
16.	Measured Concentration of NO_2	µg/m3	15.6	14.3	11.5
17.	**Permissible limit for CO ****	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)
All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009. & ** Results are 8 hourly monitoring values.

Royal Environment Auditing & Consultancy Service

Manoj
Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 • E-mail : royalenvironment@live.com • admin@royalconsultancy.com

Ref. No. : 609/10/2015-16

Date: 05/11/2015

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	----	27/10/2015	27/10/2015	27/10/2015
03.	Time of sampling	----	8.45	9.10	9.30
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	N	N	N
06.	Average Wind Speed	Km/Hr.	2.9	2.9	2.9
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m3	100	100	100
10.	Measured Concentration of PM 10	µg/m3	54	45	30
11.	Permissible limits for PM 2.5*	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	26	20	15
13.	Permissible limits for SO_2*	µg/m3	80	80	80
14.	Measured Concentration of SO_2	µg/m3	3.9	4.2	3.1
15.	Permissible limits for NO_2*	µg/m3	80	80	80
16.	Measured Concentration of NO_2	µg/m3	19.5	18.1	16.3
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

BDL= Below Detectable Limit

All Calibration dve on : 26/05/2016

*Permissible Limits are as per NAAQ Standard 16th November 2009. & ** Results are 8 hourly monitoring values.

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360595 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 610/10/2015-16

Date: 05/11/2015

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	----	28/10/2015	28/10/2015	28/10/2015
03.	Time of sampling	----	8.55	9.20	9.40
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	NE	NE	NE
06.	Average Wind Speed	Km/Hr.	4.4	4.4	4.4
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m3	100	100	100
10.	Measured Concentration of PM 10	µg/m3	51	48	35
11.	Permissible limits for PM 2.5*	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	22	19	11
13.	Permissible limits for SO_2*	µg/m3	80	80	80
14.	Measured Concentration of SO_2	µg/m3	3.5	4.6	2.8
15.	Permissible limits for NO_2*	µg/m3	80	80	80
16.	Measured Concentration of NO_2	µg/m3	18.7	17.2	14.9
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

BDL= Below Detectable Limit

All Calibration due on : 25/05/2016

*Permissible Limits are as per NAAQ Standard 16th November 2009. & ** Results are 8 hourly monitoring values.

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 611/10/2015-16

Date: 05/11/2015

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr.No.	Particulars	Unit	AAQM - 1 (S)	AAQM - 2 (SSW)	AAQM - 3 (WSW)	AAQM - 4 (NW)
01.	Location of Ambient	----	Old Colony (Nr. Environment Laboratory)	Nr. Rain Water Harvesting	LPG Yard (Nr. Water Reservoir)	Between Sinter - 2 & Spiral - 2
02.	Date of sampling	----	07/10/2015	07/10/2015	08/10/2015	08/10/2015
03.	Time of sampling	----	9.00	9.30	9.15	9.45
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	N	N	N	N
06.	Average Wind Speed	Km/Hr.	1.6	1.6	1.8	1.8
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	µg/m3	100	100	100	100
10.	Measured Concentration of PM 10	µg/m3	25	34	39	43
11.	**Permissible limits for PM 2.5***	µg/m3	60	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	10	14	20	13
13.	**Permissible limits for SO_2***	µg/m3	80	80	80	80
14.	Measured Concentration of SO_2	µg/m3	1.6	2.9	3.7	2.4
15.	**Permissible limits for NO_2***	µg/m3	80	80	80	80
16.	Measured Concentration of NO_2	µg/m3	8.6	11.9	10.5	9.5
17.	**Permissible limit for CO ****	µg/m3	2000	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL	BDL

Instrument used : (1) Ecotech make 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampling Kit (APM 109), & 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009. & ** Results are 8 hourly monitoring values.

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360895 * E-mail : royalenvironment@live.com * admin@royalconsultancy.com

Ref. No. : 612/10/2015-16

Date: 05/11/2015

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	AAQM - 5 (NE)	AAQM - 6 (SE)	AAQM - 7 (ESE)	AAQM - 8 (E)
01.	Location of Ambient	---	Labour Colony	New Colony (Shopping Centre)	VIP Guest House	Weigh bridge
02.	Date of sampling	----	09/10/2015	09/10/2015	10/10/2015	10/10/2015
03.	Time of sampling	-----	9.30	10.05	9.20	9.50
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	W	W	W	W
06.	Average Wind Speed	Km/Hr.	2.0	2.0	2.8	2.8
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**100**	**100**	**100**	**100**
10.	Measured Concentration of PM 10	µg/m3	45	41	35	38
11.	**Permissible limits for PM 2.5***	**µg/m3**	**60**	**60**	**60**	**60**
12.	Measured Concentration of PM 2.5	µg/m3	16	23	21	18
13.	**Permissible limits for SO_2***	**µg/m3**	**80**	**80**	**80**	**80**
14.	Measured Concentration of SO_2	µg/m3	3.9	2.1	3.3	4.9
15.	**Permissible limits for NO_2***	**µg/m3**	**80**	**80**	**80**	**80**
16.	Measured Concentration of NO_2	µg/m3	10.1	9.1	12.3	14.4
17.	**Permissible limit for CO ** **	**µg/m3**	**2000**	**2000**	**2000**	**2000**
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL	BDL

Instrument used : (1) Ecotech make 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampling Kit (APM 109), & 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009. & ** Results are 8 hourly monitoring values.

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. :613/10/2015-16

Date: 05/11/2015

FUGITIVE EMISSION MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23/22

Sr. No.	Particulars	Unit	A - 1	A - 2	A - 3
01.	**Location of Ambient**	---	**RMH Junction House**	**RMH Stock House**	**Sinter RMH Yard**
02.	Date of sampling	---	12/10/2015	12/10/2015	13/10/2015
03.	Time of sampling	----	8.25	8.45	8.00
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	----	SE	SE	SE
06.	Average Wind Speed	Km/Hr.	0.64	0.64	0.66
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	µg/m3	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m3	1263	1479	1135
11.	**Permissible limits for SO2***	µg/m3	150	150	150
12.	Measured Concentration of SO2	µg/m3	12.6	11.8	13.7
13.	**Permissible limits for NO2***	µg/m3	120	120	120
14.	Measured Concentration of NO2	µg/m3	27.9	28.5	26.7
15.	**Permissible limit for CO ****	µg/m3	2000	2000	2000
16.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL
17.	**Permissible limit for Pb***	µg/m3	2	2	2
18.	Measured Concentration of Pb	µg/m3	ND	ND	ND

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampler (APM 109)
All Calibration due on : 25/05/2016

BDL= Below Detectable Limit
ND= Not Detectable

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. :514/10/2015-16

Date: 05/11/2015

FUGITIVE EMISSION MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23/22

Sr. No.	Particulars	Unit	A - 4	A - 5	A - 6
01.	Location of Ambient	----	Sinter 2 Ground Hopper	DISP "CCM" Area	BF CAST HOUSE
02.	Date of sampling	----	13/10/2015	14/10/2015	14/10/2015
03.	Time of sampling	----	8.20	8.05	8.30
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	----	SE	NW	NW
06.	Average Wind Speed	Km/Hr.	0.66	1.8	1.8
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m3	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m3	732	516	924
11.	Permissible limits for SO2*	µg/m3	150	150	150
12.	Measured Concentration of SO2	µg/m3	10.3	14.4	11.1
13.	Permissible limits for NO2*	µg/m3	120	120	120
14.	Measured Concentration of NO2	µg/m3	24.2	31.5	29.4
15.	Permissible limit for CO **	µg/m3	2000	2000	2000
16.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL
17.	Permissible limit for Pb*	µg/m3	2	2	2
18.	Measured Concentration of Pb	µg/m3	ND	ND	ND

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampler (APM 109)
All Calibration due on : 25/05/2016

BDL= Below Detectable Limit
ND= Not Detectable

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 615/10/2015-16

Date: 05/11/2015

Performance Evaluation of Air Pollution Control Equipments
Sinter Plant-1 (GPCB ID 35456)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 6
01	Date of Sampling	---	09/10/2015	Not in operation during visit	10/10/2015	10/10/2015
02	Attached to	---	Fuel & Flux crusher & screening building	Fuel & Flux crushing house	Sinter Furnace	Discharge end
03	Stack Height	Meter	32	27	60	32
04	Stack Diameter	Meter	1.4	1.4	2.0	1.3
05	Stack Temperature	°C	64	---	139	124
06	Ambient Temperature	°C	35	---	31	33
07	Average Velocity of Flue Gases	m/sec.	16.3	---	38.9	34.7
08	IsoKinetic Flowrate for Sampling	LPM	28	---	13	12
09	Inlet	mg/Nm^3	2697	---	2751	2320
10	Outlet	mg/Nm^3	33	---	57	24
11	Efficiency	%	98.78	---	97.93	98.97

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS-1
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 616/10/2015-16

Date: 05/11/2015

Blast Furnace Plant-1(GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1
01	Date of Sampling	---	19/10/2015
02	Attached to	---	De-dustingSystem
03	Stack Height	Meter	35
04	Stack Duct Diameter	Meter	1.4
05	Stack Temperature	°C	55
06	Ambient Temperature	°C	34
07	Average Velocity of Flue Gases	m/sec.	14.8
08	IsoKinetic Flowrate for Sampling	LPM	25
09	Inlet	mg/Nm^3	2294
10	Outlet	mg/Nm^3	14
11	Efficiency	%	99.39

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Calibration due on 25/09/2016

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360685 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 617/10/2015-16

Date: 05/11/2015

Performance Evaluation of Air Pollution Control Equipments

Sinter Plant-2 (GPCB ID:29017)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255, Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 7	S - 9	S-10
01	Date of Sampling	---	11/10/2015	11/10/2015	11/10/2015	09/10/2015	09/10/2015	18/10/2015
02	Attached to	---	Fuel crushing de-duster system (Fuel)	Fuel crushing de-duster system (Flux)	Fuel screening dedustor system (Flux screening)	Sinter Furnace	Discharging end of Sinter de-dusting System	Pulverised Coal injection
03	Stack Height,	Meter	30	30	30	50	50	32
04	Stack Diameter	Meter	0.7	0.7	0.7	2.6	1.3	1.0
05	Stack Temperature	°C	40	49	47	138	103	150
06	Ambient Temperature	°C	32	31	33	31	33	32
07	Average Velocity of Flue Gases	m/sec.	15.4	16.4	14.7	34.6	36.9	19.2
08	IsoKinetic Flowrate for Sampling	LPM	27	28	26	12	15	25
09	Inlet	mg/Nm³	2218	2671	2501	3511	2346	2023
10	Outlet	mg/Nm³	16	24	20	64	28	19
11	Efficiency	%	99.28	99.10	99.20	98.18	98.81	99.06

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS1
Calibration due on 25/06/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 618/10/2015-16

Date: 05/11/2015

Performance Evaluation of Air Pollution Control Equipments

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village; Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 7	S - 8	S - 12	S - 18	S - 22
01	Date of Sampling	--	10/10/2015	14/10/2015	14/10/2015	17/10/2015	13/10/2015
02	Attached to		Sand Reclamation	Common stack Mg Converter - I & II	Core Cleaning & Dusting - I	Core Cleaning & Dusting - II	Mg Converter - III
03	Stack Height	Meter	32	30	30	30	30
04	Stack Diameter	Meter	0.9	0.5	0.6	0.6	0.5
05	Stack Temperature	°C	113	62	57	59	93
06	Ambient Temperature	°C	32	30	34	32	32
07	Average Velocity of Flue Gases	m/sec.	31.5	14.5	15.4	16.7	15.6
08	IsoKinatic Flowrate for Sampling	LPM	12	24	28	26	24
09	Inlet	mg/Nm^3	3819	3742	2879	2991	4731
10	Outlet	mg/Nm^3	37	43	49	38	33
11	Efficiency	%	99.03	98.85	98.30	98.73	99.30

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360895 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 619/10/2015-16

Date: 05/11/2015

Performance Evaluation of Air Pollution Control Equipments

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method. : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 9	S - 10	S - 15	S - 16	S - 20	S - 21	S - 23
01	Date of Sampling	---	15/10/2015	Not in operation during visit	16/10/2015	Not in operation during visit	17/10/2015	Not in operation during visit	13/10/2015
02	Attached to	---	Zinc Coating - I	Barrel Grinding-I	Zinc Coating - II	Barrel Grinding-II	Zinc Coating - III	Barrel Grinding-III	Zinc Coating - IV & V
03	Stack Height	Meter	30	30	30	30	30	30	30
04	Stack Dust Diameter	Meter	0.6	0.6	0.6	0.6	0.6	0.6	0.6
05	Stack Temperature	°C	53	---	56	---	50	---	48
06	Ambient Temperature	°C	31	---	34	---	33	---	34
07	Average Velocity of Flue Gases	m/sec.	16.8	---	18.1	---	16.3	---	13.9
08	IsoKinetic Flowrate for Sampling	LPM	26	---	27	---	28	---	24
09	Inlet	mg/Nm^3	1858	---	1931	---	1820	---	1159
10	Outlet	mg/Nm^3	14	---	11	---	16	---	8
11	Efficiency	%	99.16	---	99.43	---	99.18	---	99.31

Note : Minimum Detectable limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos. of Stack Monitoring Kit - Vayutechtron make - VSS-1
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Rajkot

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 620/10/2015-16

Date: 05/11/2015

Performance Evaluation of Air Pollution Control Equipments

Pipe Plant (SDP-2) (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255 Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 5	S - 6	S-8
01	Date of Sampling	---	23/10/2015	21/10/2015	21/10/2015	20/10/2015
02	Attached to	---	Mg Treatment	Zinc Coating	Tri-Grinding	Zinc Coating machine
03	Stack Height	Meter	30	30	30	30
04	Stack Duct Diameter	Meter	1.00	1.00	1.00	0.8
05	Stack Temperature	°C	54	52	46	51
06	Ambient Temperature	°C	32	30	31	31
07	Average Velocity of Flue Gases	m/sec.	14.9	15.8	13.7	15.2
08	IsoKinetic Flowrate for Sampling	LPM	25	27	24	26
09	Inlet	mg/Nm^3	2571	2838	2487	1411
10	Outlet	mg/Nm^3	31	26	29	10
11	Efficiency	%	98.79	99.08	98.83	99.29

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalal, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360595 • E-mail : royalenvironment@live.com • admin@royalconsultancy.com

Ref. No. : 621/10/2015-16

Date: 05/11/2015

Performance Evaluation of Air Pollution Control Equipments

Blast Furnace Plant-2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 4	S - 5
01	Date of Sampling	---	20/10/2015	28/10/2015	20/10/2015
02	Attached to	---	Dedusting System	Coke fine building dust collecting system	Iron Ore fine & Dust Collecting System
03	Stack Height	Meter	40	30	30
04	Stack Duct Diameter	Meter	1.5	0.85	0.65
05	Stack Temperature	°C	61	65	40
06	Ambient Temperature	°C	31	33	33
07	Average Velocity of Flue Gases	m/sec.	35.7	16.8	14.7
08	IsoKinetic Flowrate for Sampling	LPM	15	28	26
09	Inlet	mg/Nm^3	3708	1903	1533
10	Outlet	mg/Nm^3	46	6	5
11	Efficiency	%	98.76	99.68	99.67

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. :622/10/2015-16

Date: 05/11/2015

STACK EMISSION MONITORING RESULTS

Sinter Plant - 1(GPCB ID:35456)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6
01	Date of Sampling	---	09/10/2015	Not in operation during visit	10/10/2015	NA	NA	10/10/2015
02	Time of sampling	---	15.10		9.00			10.40
03	Stack Attached to	---	Fuel & Flux Crusher and Screening building	Fuel & Flux Crushing House	Sinter Furnace	Primary Mixture House	Secondary Mixture House	Discharge End
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	ESP	---	---	ESP
05	Stack Height	Meter	32.0	27.00	50	19.75	36.00	32
06	Stack Diameter	Meter	1.40	1.40	2.0	1.25	1.25	1.30
07	Stack Temperature	°C	48	....	142	....	....	135
08	Ambient Temperature	°C	35	....	31	....	....	33
09	Average Velocity of Flue Gases	m/sec.	11.9	....	6.6	....	....	16.2
10	Isokinetic flow rate for P.M. Sampling	LPM	21	....	20	....	....	22
11	Gaseous Sampling Flow Rate	LPM	2.0	---	2.0	---	---	2.0
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	33	....	57	....	....	24
14	Permissible limits for SO2	ppm	NA	NA	100	NA	NA	NA
15	Measured Concentration of SO2	ppm	---	---	ND	---	---	---
16	Permissible limits for NOx	ppm	NA	NA	50	NA	NA	NA
17	Measured Concentration of NOx	ppm	---	---	9.4	---	---	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.

NA= Not Applicable

Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I

Calibration due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 623/10/2015-16

Date: 05/11/2015

STACK EMISSION MONITORING RESULTS

Sinter Plant -2 (GPCB ID:29017)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr.No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 7	S - 8	S - 9	S - 10
01	Date of Sampling	---	11/10/2015	11/10/2015	11/10/2015	Not in operation during visit	NA	NA	09/10/2015	16/10/2015	09/10/2015	16/10/2015
02	Time of sampling	Hr.	10.00	11.20	15.10				10.10	9.30	11.20	10.40
03	Stack Attached to	---	Fuel crushing de-duster system (Flux)	Fuel crushing de-duster system(Fuel)	Fuel Screening dedoster System (Flux Screening)	No. I Transfer Station De-duster System	Primary Mixer De-duster system	Secondary Mixer De-duster system	Sinter Furnace	Transfer station no. 4 & 5 dedusting system	Discharging End of sinter de-dusting system	Pulverized Coal Injection
04	Air Pollution Control Measures	---	Dust Collector	Dust Collector	Dust Collector	Dust Collector	Dust Collector	Dust Collector	ESP	Dust Collector	ESP	Bag Filter
05	Stack Height	Meter	30	30	30	30	20	30	50	30	50	32
06	Stack Diameter	Meter	0.7	0.7	0.7	0.7	---	---	2	0.7	1.3	1.00
07	Stack Temperature	°C	44	36	40	---	---	---	147	34	112	137
08	Ambient Temperature	°C	31	32	33	---	---	---	31	31	33	32
09	Average Velocity of Flue Gases	m/sec.	14.8	12.3	8.9	---	---	---	12.4	5.2	28.6	10.5
10	Isokinetic flow rate for P.M. Sampling	LPM	26	22	16	---	---	---	16	21	11	14
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	---	---	---	2.0	2.0	---	2.0
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	24	16	20	---	---	---	64	13	28	19
14	Permissible limits for SO2	ppm	NA	NA	NA	NA	NA	NA	100	NA	NA	100 (ppm)
15	Measured Concentration of SO2	ppm	---	---	---	---	---	---	ND	---	---	1.8
16	Permissible limits for NOx	ppm	NA	NA	NA	NA	NA	NA	50	NA	NA	50 (ppm)
17	Measured Concentration of NOx	ppm	---	---	---	---	---	---	11.5	---	---	0.91

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make + VSS I
Calibration due on : 25/09/2016

NA= Not Applicable

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360895 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. :624/10/2015-16

Date: 05/11/2015

STACK EMISSION MONITORING RESULTS

BLAST FURNACE - 2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 6
01	Date of Sampling	---	20/10/2015	30/10/2015	Monitoring Not Possible	28/10/2015	20/10/2015
02	Time of sampling	Hr.	9:20	8.45		15.30	10.30
03	Stack Attached to	---	Dedusting System	Stove Stack	Flare Stack	Coke fine building dust collecting system	Iron Ore fine & Dust Collecting System
04	Air Pollution Control Measures	---	Bag Filter	---	---	Bag Filter	Bag Filter
05	Stack Height	Meter	40.0	65.0	45	30.0	30.0
06	Stack Diameter	Meter	1.5	2.250	---	---	0.85
07	Stack Temperature	°C	47	228	---	56	35
08	Ambient Temperature	°C	31	29	---	33	33
09	Average Velocity of Flue Gases	m/sec.	34.7	3.2	---	13.8	11.5
10	Isokinetic flow rate for P.M. Sampling	LPM	16	8	---	23	21
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	46	4	---	6	5
14	Permissible limits for SO2	mg/Nm3	NA	NA	NA	NA	NA
15	Measured Concentration of SO2	mg/Nm3	---	---	---	---	---
16	Permissible limits for NOx	mg/Nm3	NA	NA	NA	NA	NA
17	Measured Concentration of Nox	mg/Nm3	---	---	---	---	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively. NA=Not Applicable
Instrument Used : Stack Monitoring Kit - Vayubodhan make - VSS I
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 625/10/2015-16

Date: 05/11/2015

STACK EMISSION MONITORING RESULTS

BLAST FURNACE-1 (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255 Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5
01	Date of Sampling	---	19/10/2015	19/10/2015	19/10/2015	30/10/2015	Monitoring Not Possible
02	Time of sampling	Hr.	11.45	9.00	10.40	8.30	
03	Stack Attached to	---	Dedusting System	Boiler - I	Boiler - II	Stove Stack	Flare Stack
04	Air Pollution Control Measures	---	Bag Filter	---	---	----	----
05	Stack Height	Meter	35.0	45	45	50.0	30
06	Stack Diameter	Meter	1.5	1.4	1.4	2.25	----
07	Stack Temperature	°C	43	167	173	218	----
08	Ambient Temperature	°C	34	30	33	28	----
09	Average Velocity of Flue Gases	m/sec.	11.2	4.7	4.9	3.4	----
10	Isokinetic flow rate for P.M. Sampling	LPM	20	14	14	9	----
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	----
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	14	10	7	2	----
14	Permissible limits for SO2	mg/Nm3	40	40	40	40	40
15	Measured Concentration of SO2	mg/Nm3	ND	ND	ND	ND	----
16	Permissible limits for NOx	mg/Nm3	25	25	25	25	25
17	Measured Concentration of Nox	mg/Nm3	ND	ND	ND	ND	----

N.D=Not Detectable

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Vayubodhan make - VSS I
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

104

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 626/10/2015-16

Date: 05/11/2015

STACK EMISSION MONITORING RESULTS

Captive Power Plant (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4
01	Date of Sampling	---	13/10/2015	15/10/2015	15/10/2015	Not In Operation During The Visit
02	Time of sampling	Hr.	10.00	10.20	11.15	
03	Stack Attached to	---	6000 KVA D.G.	3240 KVA D.G.	3240 KVA D.G.	1180 KVA D.G.
04	Air Pollution Control Measures	---	---	---	---	---
05	Stack Height	Meter	57.0	35	35	35
06	Stack Diameter	Meter	1.984	1.484	1.484	0.980
07	Stack Temperature	°C	263	241	234	---
08	Ambient Temperature	°C	31	31	33	---
09	Average Velocity of Flue Gases	m/sec.	21.2	22.3	23.1	---
10	Isokinetic flow rate for P.M. Sampling	LPM	22	24	25	---
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	62	58	51	---
14	Permissible limits for SO2	ppm	100	100	100	100
15	Measured Concentration of SO2	ppm	32.7	27.2	26.4	---
16	Permissible limits for Nox	ppm	50	50	50	50
17	Measured Concentration of Nox	ppm	23.4	20.8	21.7	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.

Instrument Used : Stack Monitoring Kit - Vayubodhan make - VSS I

Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

105

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 627/10/2015-16

Date: 05/11/2015

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255 Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 11	S - 17	S - 25	S - 26	S - 27
01	Date of Sampling	---	Not in Operation During The Visit	17/10/2015	24/10/2015	24/10/2015	Not in Operation During The Visit
02	Time of sampling	Hr.		16.30	15.25	16.20	
03	Stack Attached to	---	Bitumin Drying Oven - I	Common stack Bitumin Drying Oven - II & Boiler	Shot Blasing - I	Shot Blasing - II	Shot Blasing - III
04	Air Pollution Control Measures	---	---	---	Bag Filter	Bag Filter	Bag Filter
05	Stack Height	Meter	32.8	32.8	10.0	10.0	10.0
06	Stack Diameter	Meter	1.375	1.375	0.41	0.41	1.125
07	Stack Temperature	°C	---	153	46	43	---
08	Ambient Temperature	°C	---	34	33	33	---
09	Average Velocity of Flue Gases	m/sec	---	5.1	13.2	11.9	---
10	Isokinetic flow rate for P.M. Sampling	LPM	---	15	23	21	---
11	Gaseous Sampling Flow Rate	LPM	---	2.0	---	---	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	---	73	33	25	---
14	Permisaible limits for SO2	mg/Nm3	100 ppm	100 ppm	40	40	40
15	Measured Concentration of SO2	mg/Nm3	---	20.7	ND	ND	---
16	Permissible limits for Nox	mg/Nm3	50 ppm	50 ppm	25	26	25
17	Measured Concentration of Nox	mg/Nm3	---	18.5	ND	ND	---

N.D= Not Detectable

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

106

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 628/10/2015-16

Date: 05/11/2015

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 8	S - 9	S - 16	S - 20	S - 22	S - 23
01	Date of Sampling	---	14/10/2015	15/10/2015	16/10/2015	17/10/2015	13/10/2015	13/10/2015
02	Time of sampling	Hr.	9.20	15.30	15.50	11.10	10.00	15.00
03	Stack Attached to	---	Common stack Mg Converter-I&II	Zn Coating - I	Zn Coating - II	Zn Coating - III	Mg Converter - III	Zn Coating - IV & V
04	Air Pollution Control Measures	---	Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Separator & Bag Filter	Bag Filter	Cyclone Separator & Bag Filter
05	Stack Height	Meter	30	30	30	30	30	30
06	Stack Diameter	Meter	0.6	0.6	0.6	0.6	0.6	0.9
07	Stack Temperature	°C	49	43	45	40	58	39
08	Ambient Temperature	°C	30	34	34	33	32	34
09	Average Velocity of Flue Gases	m/sec.	23.8	14.1	14.8	15.2	10.7	5.4
10	Isokinetic flow rate for P.M. Sampling	LPM	11	25	26	27	19	23
11	Gaseous Sampling Flow Rate	LPM	2.0	---	---	---	2.0	---
12	Permissible limits for PM	mg/Nm3	150	20 (Zn)	20 (Zn)	20 (Zn)	150	20 (Zn)
13	Measured Concentration of PM	mg/Nm3	43	14 (Zn)	11 (Zn)	15 (Zn)	33	08 (Zn)
14	Permissible limits for SO2	mg/Nm3	40	NA	NA	NA	40	NA
15	Measured Concentration of SO2	mg/Nm3	ND	---	---	---	ND	---
16	Permissible limits for Nox	mg/Nm3	25	NA	NA	NA	25	NA
17	Measured Concentration of Nox	mg/Nm3	2.4	---	---	---	1.7	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Calibration due on 25/09/2016

N.A=Not Applicable

Royal Environment Auditing & Consultancy Service

Analyst

107

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2350695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 629/10/2015-16

Date: 05/11/2015

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 12	S - 18
01	Date of Sampling	---	10/10/2015	10/10/2015	10/10/2015	10/10/2015	10/10/2015	10/10/2015	14/10/2015	17/10/2015
02	Time of sampling	Hr.	10.15	11.10	12.20	14.00	15.05	16.10	15.15	10.00
03	Stack Attached to	---	Core Shop-I	Core Shop-II	Core Shop-III	Core Shop-IV	Core Shop-V	Core Shop-VI	Core Cleaning & Dusting-I	Core Cleaning & Dusting-II
04	Air Pollution Control Measures	---	---	---	---	---	---	---	Bag Filter	Bag Filter
05	Stack Height	Meter	30	30	30	30	30	30	30	30
06	Stack Diameter	Meter	0.584	0.584	0.584	0.584	0.584	0.584	0.6	0.6
07	Stack Temperature	°C	37	38	37	40	39	40	46	48
08	Ambient Temperature	°C	32	33	34	34	34	34	34	32
09	Average Velocity of Flue Gases	m/sec.	4.5	4.2	4.7	5.2	4.9	4.8	13.9	14.2
10	Isokinetic flow rate for P.M. Sampling	LPM	18	17	19	21	20	19	24	25
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	28	30	17	38	32	22	48	36
14	Permissible limits for SO2	mg/Nm3	40	40	40	40	40	40	40	40
15	Measured Concentration of SO2	mg/Nm3	3.2	2.7	3.4	2.3	2.4	3.1	ND	ND
16	Permissible limits for Nox	mg/Nm3	25	25	25	25	25	25	25	25
17	Measured Concentration of Nox	mg/Nm3	2.2	1.8	1.7	2.4	2.9	1.9	3.3	3.9

N.D= Not Detectable

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 630/10/2015-16

Date: 05/11/2015

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghoghe,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 7	S - 10	S - 13	S - 14	S - 18	S - 19	S - 21	S - 24
01	Date of Sampling	---	10/10/2015	Not in operation during visit	16/10/2015	16/10/2015	Not in operation during visit	16/10/2015	Not in operation during visit	Not in operation during visit
02	Time of sampling	Hr.	9.10		9.15	10.30		11.50		
03	Stack Attached to	---	Sand Reclamation	Barrel Grinding -I	Annealing Furnace - I	Annealing Furnace - II	Barrel Grinding - II	Annealing Furnace - III	Barrel Grinding-III	Barrel Grinding -IV&V
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	---	---	Bag Filter	---	Bag Filter	Bag Filter
05	Stack Height	Meter	30	30	32	32	30	32	30	30
06	Stack Diameter	Meter	0.8	0.6	1.375	1.375	0.6	1.375	0.6	0.5
07	Stack Temperature	°C	67	...	168	170	...	165	...	...
08	Ambient Temperature	°C	32	...	30	32	...	33	...	...
09	Average Velocity of Flue Gases	m/sec.	15.2	...	5.3	5.4	...	5.7	...	...
10	Isokinetic flow rate for P.M. Sampling	LPM	24	...	16	16	...	16	...	...
11	Gaseous Sampling Flow Rate	LPM	2.0	...	2.0	2.0	...	2.0	...	...
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	37	...	16	10	...	12	...	...
14	Permissible limits for SO2	mg/Nm3	40	40	100 (PPM)	100 (PPM)	40	100 (ppm)	40	40
15	Measured Concentration of SO2	mg/Nm3	4.2	...	1.8	2.3	...	1.6	...	...
16	Permissible limits for Nox	mg/Nm3	25	25	50 (PPM)	50 (PPM)	25	50 (PPM)	25	25
17	Measured Concentration of Nox	mg/Nm3	10.9	...	6.1 (PPM)	5.5 (PPM)	...	5.3 (PPM)	...	...

N.D= Not Detectable

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Calibration due on 25/09/2016.

Royal Environment Auditing & Consultancy Service

Manoj
Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.:+91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 631/10/2015-16

Date: 05/11/2015

STACK EMISSION MONITORING RESULTS
Pipe Plant (SDP-2) (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 7	S - 8
01	Date of Sampling	—	23/10/2015	21/10/2015	23/10/2015	23/10/2015	21/10/2015	21/10/2015	Not in operation during visit	20/10/2015
02	Time of sampling	Hr.	14.40	15.30	9.00	10.30	9.30	10.40		8.55
03	Stack Attached to	—	Magnesium Treatment	Socket Cleaning	Annealing Furnace - I	Annealing Furnace - II	Zinc Coating	Tri- Grinding Section	Pre & Post Heating	Zinc Coating Machine
04	Air Pollution Control Measures	—	Bag Filter	Bag Filter	—	—	Bag Filter	Bag Filter	—	—
05	Stack Height	Meter	30	30	45	45	30	30	30	30
06	Stack Diameter	Meter	1.00	0.60	0.85	0.85	1.00	1.00	0.85	1.20
07	Stack Temperature	°C	41	38	142	137	43	30	—	44
08	Ambient Temperature	°C	32	33	29	30	30	31	—	31
09	Average Velocity of Flue Gases	m/sec.	3.4	2.9	4.1	4.4	4.3	3.8	—	3.8
10	Isokinetic flow rate for P.M. Sampling	LPM	14	12	13	14	16	14	—	16
11	Gaseous Sampling Flow Rate	LPM	—	—	2.0	2.0	—	—	—	—
12	Permissible limits for PM	mg/Nm3	50	50	50	50	50	50	50	50
13	Measured Concentration of PM.	mg/Nm3	31	21	17	20	25 (Zn)	29	—	10
14	Permissible limits for SO2	PPM	NA	NA	100	100	NA	NA	NA	NA
15	Measured Concentration of SO2	PPM	—	—	1.4	1.8	—	—	—	—
16	Permissible limits for Nox	PPM	NA	NA	50	50	NA	NA	NA	NA
17	Monsured Concentration of Nox	PPM	—	—	3.7	4.1	—	—	—	—

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS 1
Calibration due on 26/09/2016

NDA Not Detectable
N.A.= Not Applicable

Royal Environment Auditing & Consultancy Service

Analyst

Rajkot

(110)

Ref. No. : 632/10/2015-16

Date: 05/11/2015

Form No. 37

(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant.: **Sinter Plant-2 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID:29017)**

2 Raw materials, by products and finished products involved in the process: **TOTAL DUST**

3 Particulars of sampling

Date of Sampling : 14th October, 2015

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remarks	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Sinter Plant At First Floor	Total Dust	Personal Respirable Dust sampler APM 800	02	5-7	6.0	10	Gravimetric	5	---	Manoj	Mr. MANOJ SONRAT

Instruments used : Envirotech make personal sampler, Model No. APM 800

Calibration Date Due on : 02/11/2015

For, Royal Environment Auditing & Consultancy Service

Authorized Sign

Ref. No. : 633/10/2015-16

Date: 05/11/2015

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant : Sintor Plant-1 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID: 35456)

2 Raw materials, by products and finished products involved in the process, TOTAL DUST

3 Particulars of sampling

Date of Sampling : 14th October, 2015

Sr. No	Location Operation monitored	Identified Contaminato	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Sintor Plant At First Floor	Total Dust	Personal Respirable Dust sampler APM 800	02	4-6	5.0	10	Gravimetric	4	---	Manoj	Mr. MANOJ SONRAT

Instruments used : Envirotech make personal sampler, Model No. APM 800

Calibration Date Due on : 02/11/2015

For, Royal Environment Auditing & Consultancy Service

Authorized Sign

Ref. No. : 834/10/2015-16

Date: 05/11/2015

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (e)(e).

1 Name of the Department/Plant.: BF Plant-1 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID: 18037)

2 Raw materials, by products and finished products involved in the process. TOTAL DUST & CO.

3 Particulars of sampling

Date of Sampling : 14th October, 2015

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	BF Plant (Cast House)	CO	Personal Respirable Dust sampler APM 800	02	12-14	13.0	55	Gravimetric	4	----		Mr. MANOJ SONRAT
		Total Dust			6-8	7.0	10					

Instruments used : Envirotech make personal sampler, Model No. APM 800

Calibration Date Due on : 02/11/2015

For. Royal Environment Auditing & Consultancy Service

Authorized Sign

Ref. No. : 635/10/2015-16

Date: 05/11/2015

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant.: BF Plant-2 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID: 29026)

2 Raw materials, by products and finished products involved in the process. TOTAL DUST & CO.

3 Particulars of sampling

Date of Sampling : 14th October, 2015

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concert ration (As given in Second Schedule)	Refrance Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	BF Plant (Cast House)	CO	Personal Respirable Dust sampler APM 900	02	11-14	12.5	55	Gravimetric	6	—	Manoj	Mr. MANOJ SONRAT
		Total Dust			6-7	6.5	10					

Instruments used : Envirotech make personal sampler, Model No. APM 800

Calibration Date Due on : 02/11/2015

For, Royal Environment Auditing & Consultancy Service

Authorized Sign

Ref. No. : 636/10/2015-16

Date: 05/11/2015

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (e)(e).

1 Name of the Department/Plant : DISP, JCO & Coating Units at JINDAL SAW LIMITED, Samaghogha.(GPCB ID: 18036)

2 Raw materials, by products and finished products involved in the process. TOTAL DUST

3 Particulars of sampling

Date of Sampling : 15th & 16th October, 2015

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Referance Method	Number of workers exposed at the location being monitored	Remark	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Spiral Plant (Nr. ID/OD)	Total Dust	Personal Respirable Dust sampler APM 800	02	2-3	2.5	10	Gravimetric	3	---	Manoj	Mr. MANOJ SONRAT
2	JCO Plant (Nr. JCO Press)	Total Dust		02	1-4	2.5	10	Gravimetric	4	---		
3	Coating Plant-1 (Shot Blasting Area)	Total Dust		02	5-6	5.5	10	Gravimetric	4	---		
4	CCM Area (SDP / DISP)	Total Dust		02	6-8	7.0	10	Gravimetric	5	---		
5	Coating Plant-2 (Shot Blasting Area)	Total Dust		02	3-5	4.0	10	Gravimetric	3	---		
6	CCM Area (SDP-2)	Total Dust		02	6-7	6.0	10	Gravimetric	5	---		

Instruments used : Envirotech make personal sampler, Model No. APM 800

Calibration Date Due on : 02/11/2015

For, Royal Environment Auditing & Consultancy Service

Authorized Sign

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 637/10/2015-16

Date: 05/11/2015

WORK ZONE NOISE LEVEL MEASUREMENT

SINTER PLANT- 1 (GPCB ID:35456)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 17th October, 2015

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
1	Inside Control Room	38.4	44.5	40.5
2	Inside Mechanical Room	44.6	50.7	46.4
3	Inside Electrical Room	45.8	51.4	46.9
4	Inside Plant Office	47.6	54.8	49.7

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 • E-mail : royalenvironment@live.com • admin@royalconsultancy.com

Ref. No. : 638/10/2015-16

Date: 05/11/2015

WORK ZONE NOISE LEVEL MEASUREMENT
BLAST FURNACE- 1 (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 17th October, 2015

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Nr. Stock House	61.4	72.5	64.5
02.	Inside Control Room	43.5	51.3	45.1
03.	Inside Control room of Cast House	44.7	49.6	46.3
04.	Inside Laboratory	40.1	45.3	41.8
05.	Inside Control Room of Blower House	53.1	60.6	56.4
06.	Inside Control Room of CPP	50.5	59.1	52.6

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)
Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.
Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service.

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 • E-mail : royalenvironment@live.com • admin@royalconsultancy.com

Ref. No. : 639/10/2015-16

Date: 05/11/2015

WORK ZONE NOISE LEVEL MEASUREMENT
PIPE PLANT (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 17th October, 2015

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room of Annealing Furnace of DISP / SDP	46.5	51.7	49.6
02	Inside Control Room – Mill Area of Spiral Plant	58.4	62.6	59.9
03	Nr. Pipe Cutting Area of Spiral Plant	65.6	75.4	69.7
04	Inside JCO Plant	62.4	73.2	65.3
05	Inside DISP / SDP Plant	66.2	77.5	71.4
06	Inside Coating Plant	63.7	72.6	68.3
07	Nr. CCM SDP-2	62.6	70.2	64.9
08	Inside Control Room of Annealing Furnace of SDP-2	48.5	52.1	49.2
09	Nr. Zinc Coating SDP-2	64.7	77.5	69.8
10	Near Mould Shop	73.9	84.8	76.6

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)
Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.
Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.:+91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 640/10/2015-16

Date: 05/11/2015

AMBIENT NOISE LEVEL MEASUREMENT

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 16th October, 2015

Sr. No.	Location of Sampling	Value in dB(A) Day Time			Value in dB(A) Night Time		
		Min.	Max.	Leq	Min.	Max.	Leq
01.	Admin. Building	42.3	50.5	43.8	37.9	43.2	39.7
02.	Old Colony	36.5	41.6	38.2	33.2	39.4	34.6
03.	Nr. LPG Yard	52.1	60.3	53.9	49.1	54.9	50.2
04.	New Colony (School)	37.5	43.2	39.2	34.5	39.1	35.4
05.	Nr. SDP-2	56.3	64.4	57.9	53.2	59.3	55.2
06.	Nr. Coating Plant	54.9	63.6	59.1	51.3	61.2	54.8
07.	Nr. Gate No. 2	54.2	62.9	55.3	49.1	57.4	50.2
08.	Nr. Sinter Plant-1	60.2	65.4	61.4	53.9	59.6	55.6
09.	Nr. Sinter Plant-2	57.8	66.5	60.1	55.1	60.9	56.5
10.	Nr. Blast Furnace-1	56.7	60.3	57.5	51.9	58.7	53.4
11.	Nr. Blast Furnace-2	55.8	61.2	56.7	45.4	61.3	48.9
12.	Nr. Main Gate (Security Office)	43.8	52.6	45.9	39.3	45.1	41.4

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 641/10/2015-16

Date: 05/11/2015

WORK ZONE NOISE LEVEL MEASUREMENT
BLAST FURNACE - 2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 17th October, 2015

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	55.1	60.2	56.4
02.	Nr. Stock House	62.3	66.7	63.9
03.	C/R Blower House	63.4	70.5	65.2

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)
Range : A - 30 to 80 dB, B-60 to 100 dB,C-80 to 130 dB.
Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Rajkot

Manoj
Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 642/10/2015-16

Date: 05/11/2015

WORK ZONE NOISE LEVEL MEASUREMENT

SINTER PLANT - 2 (29017)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 17th October, 2015

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	48.3	50.7	49.1
02.	Inside Operator Room	57.2	61.6	58.7
03.	Near Proportioning Buding	60.6	63.4	61.3
04.	Near Crusher House	65.1	73.2	68.2

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)
Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.
Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 643/10/2015-16

Date: 05/11/2015

REPORT OF DOMESTIC WASTE WATER ANALYSIS

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Source of Sample Collection : Sewage Treatment Plant (Inlet & Outlet)

Date of Sampling : 30/10/2015

Test Method : As per IS Standards - 3024

Sr. No.	Parameters	Unit	GPCB limits for Treated Effluent	Raw Sewage	Treated Effluent
01.	pH	pH Unit	---	7.65	7.30
02.	BOD (3 Days at 27°C)	mg/l	<20	192	15
03	Total Dissolve Solid	mg/l	...	1605	1720
03	COD	mg/l	...	239	52
04	Total Suspended Solid	mg/l	<30	273	19
05	Oil & Grease	mg/l	...	ND	ND
06	Residual Chlorine	mg/l	Min. 0.5	---	0.63

ND=Not Detectable

Royal Environment Auditing & Consultancy Service

Analyst

(121)

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph. +91 281 2360695 ▪ E-mail royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 671/11/2015-16

Date. 03/12/2015

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	**Location of Ambient**	**----**	**Main Gate (S)**	**Sinter Plant - 1 (NNW)**	**Nr. Workshop Spiral - II (W)**
02.	Date of sampling	----	05/11/2015	05/11/2015	05/11/2015
03.	Time of sampling	----	8.30	8.50	9.10
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05	Dominant Wind Direction (From)	----	WSW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	1.4	1.4	1.4
07.	Average flow rate during sampling	m3/Hr	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**100**	**100**	**100**
10	Measured Concentration of PM 10	µg/m3	51	42	28
11.	**Permissible limits for PM 2.5***	**µg/m3**	**60**	**60**	**60**
12.	Measured Concentration of PM 2.5	µg/m3	22	16	13
13.	**Permissible limits for SO_2***	**µg/m3**	**80**	**80**	**80**
14.	Measured Concentration of SO_2	µg/m3	2.1	2.7	1.8
15.	**Permissible limits for NO_2***	**µg/m3**	**80**	**80**	**80**
16.	Measured Concentration of NO_2	µg/m3	12.5	10.3	8.4
17.	**Permissible limit for CO ****	**µg/m3**	**2000**	**2000**	**2000**
18	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used : (1) 3 Nos. RDS (APM - 217 BL). (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009 & ** Results are 8 hourly monitoring values.

Dpadeja.

122

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, Brs. Bai Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 672/11/2015-16

Date: 03/12/2015

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	----	08/11/2015	08/11/2015	08/11/2015
03.	Time of sampling	----	8.40	9.00	9.20
04	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	N	N	N
06.	Average Wind Speed	Km/Hr.	2.4	2.4	2.4
07	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	µg/m3	100	100	100
10	Measured Concentration of PM 10	µg/m3	47	38	30
11.	**Permissible limits for PM 2.5***	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	19	14	11
13.	**Permissible limits for SO_2***	µg/m3	80	80	80
14	Measured Concentration of SO_2	µg/m3	1.9	3.4	1.7
15.	**Permissible limits for NO_2***	µg/m3	80	80	80
16	Measured Concentration of NO_2	µg/m3	11.6	9.7	8.1
17.	**Permissible limit for CO ****	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used : (1) 3 Nos RDS (APM - 217 BL). (2) 3 Nos of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

BDL= Below Detectable Limit

All Calibration due on : 25/05/2016

*Permissible Limits are as per NAAQ Standard 16th November 2009. & ** Results are 8 hourly monitoring values.

Bhadeja.

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 673/11/2015-16

Date: 03/12/2015

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02	Date of sampling	----	11/11/2015	11/11/2015	11/11/2015
03.	Time of sampling	----	8.00	8.20	8.50
04	Duration of Sampling	Min	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	-----	NNE	NNE	NNE
06.	Average Wind Speed	Km/Hr.	2.0	2.0	2.0
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	µg/m3	100	100	100
10	Measured Concentration of PM 10	µg/m3	37	47	31
11.	**Permissible limits for PM 2.5***	µg/m3	60	60	60
12	Measured Concentration of PM 2.5	µg/m3	16	23	10
13.	**Permissible limits for SO_2***	µg/m3	80	80	80
14.	Measured Concentration of SO_2	µg/m3	2.4	3.2	2.1
15.	**Permissible limits for NO_2***	µg/m3	80	80	80
16	Measured Concentration of NO_2	µg/m3	16.5	14.7	13.2
17.	**Permissible limit for CO ****	µg/m3	2000	2000	2000
18	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used : (1) 3 Nos. RDS (APM - 217 B) (2) 3 Nos. of Gaseous Sampler (AAS 109 ,313 Nos. PM 2.5 Sampler (AAS 127)

Air Caluration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009 & ** Results are 8 hourly monitoring values

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ■ E-mail : royalenvironment@live.com ■ admin@royalconsultancy.com

Ref No. 674/11/2015-16

Date 03/12/2015

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	**Location of Ambient**	----	**Main Gate (S)**	**Sinter Plant - 1 (NNW)**	**Nr. Workshop Spiral - II (W)**
02	Date of sampling	----	14/11/2015	14/11/2015	14/11/2015
03.	Time of sampling	----	8.10	8.30	10.00
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	-----	N	N	N
06.	Average Wind Speed	Km/Hr.	1.20	1.20	1.20
07	Average flow rate during sampling	m3/Hr	1.0	1.0	1.0
08	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	µg/m3	100	100	100
10	Measured Concentration of PM 10	µg/m3	40	44	26
11.	**Permissible limits for PM 2.5***	µg/m3	60	60	60
12	Measured Concentration of PM 2.5	µg/m3	18	20	14
13.	**Permissible limits for SO_2***	µg/m3	80	80	80
14	Measured Concentration of SO_2	µg/m3	2.8	3.7	2.4
15.	**Permissible limits for NO_2***	µg/m3	80	80	80
16.	Measured Concentration of NO_2	µg/m3	15.3	13.1	11.9
17.	**Permissible limit for CO ****	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used (1) 3 Nos. RDS (APM - 217 BL) (2) 3 Nos. of Gaseous Sampler AAS 109 (3) 3 Nos. PM 2.5 Sampler (AAS 127)

Next Calibration due on 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009 & ** Results are 8 hourly monitoring values

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref No. : 675/11/2015-16

Date: 03/12/2015

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02	Date of sampling	----	17/11/2015	17/11/2015	17/11/2015
03	Time of sampling	----	8.15	8.35	8.50
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05	Dominant Wind Direction (From)	-----	NE	NE	NE
06	Average Wind Speed	Km/Hr.	4.50	4.50	4.50
07	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**100**	**100**	**100**
10	Measured Concentration of PM 10	µg/m3	45	52	34
11.	**Permissible limits for PM 2.5***	**µg/m3**	**60**	**60**	**60**
12	Measured Concentration of PM 2.5	µg/m3	21	24	12
13.	**Permissible limits for SO_2***	**µg/m3**	**80**	**80**	**80**
14	Measured Concentration of SO_2	µg/m3	2.7	3.6	2.4
15.	**Permissible limits for NO_2***	**µg/m3**	**80**	**80**	**80**
16	Measured Concentration of NO_2	µg/m3	15.2	13.9	10.7
17.	**Permissible limit for CO ****	**µg/m3**	**2000**	**2000**	**2000**
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)
AI Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009. & ** Results are 8 hourly monitoring values

Royal Environment Auditing & Consultancy Service

Analyst

126

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 676/11/2015-16

Date: 03/12/2015

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	**Location of Ambient**	----	**Main Gate (S)**	**Sinter Plant - 1 (NNW)**	**Nr. Workshop Spiral - II (W)**
02	Date of sampling	----	20/11/2015	20/11/2015	20/11/2015
03.	Time of sampling	----	8.25	8.45	9.00
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	-----	E	E	E
06.	Average Wind Speed	Km/Hr.	3.40	3.40	3.40
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**100**	**100**	**100**
10.	Measured Concentration of PM 10	µg/m3	38	47	32
11.	**Permissible limits for PM 2.5***	**µg/m3**	**60**	**60**	**60**
12	Measured Concentration of PM 2.5	µg/m3	19	16	14
13.	**Permissible limits for SO_2***	**µg/m3**	**80**	**80**	**80**
14.	Measured Concentration of SO_2	µg/m3	3.2	3.9	1.9
15.	**Permissible limits for NO_2***	**µg/m3**	**80**	**80**	**80**
16.	Measured Concentration of NO_2	µg/m3	14.5	13.2	10.4
17.	**Permissible limit for CO ** **	**µg/m3**	**2000**	**2000**	**2000**
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009. & ** Results are 8 hourly monitoring values

Royal Environment Auditing & Consultancy Service

Analyst

127

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 677/11/2015-16

Date: 03/12/2015

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	---	23/11/2015	23/11/2015	23/11/2015
03	Time of sampling	-----	9.00	9.20	9.45
04.	Duration of Sampling	Min	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	-----	NNE	NNE	NNE
06	Average Wind Speed	Km/Hr.	2.50	2.50	2.50
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**100**	**100**	**100**
10.	Measured Concentration of PM 10	µg/m3	50	39	25
11.	**Permissible limits for PM 2.5***	**µg/m3**	**60**	**60**	**60**
12.	Measured Concentration of PM 2.5	µg/m3	22	15	11
13.	**Permissible limits for SO_2***	**µg/m3**	**80**	**80**	**80**
14	Measured Concentration of SO_2	µg/m3	2.5	3.7	2.8
15.	**Permissible limits for NO_2***	**µg/m3**	**80**	**80**	**80**
15	Measured Concentration of NO_2	µg/m3	18.4	16.9	15.2
17.	**Permissible limit for CO ****	**µg/m3**	**2000**	**2000**	**2000**
18	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used (1) 3 Nos. RDS (APM - 217 BL) (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

AI Calibration due on 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009. & ** Results are 8 hourly monitoring values

Royal Environment Auditing & Consultancy Service

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph. +91 281 2360695 • E-mail : royalenvironment@live.com • admin@royalconsultancy.com

Ref No 678/11/2015-16

Date: 03/12/2015

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method . As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	----	26/11/2015	26/11/2015	26/11/2015
03.	Time of sampling	-----	9.10	9.30	9.55
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	-----	N	N	N
06	Average Wind Speed	Km/Hr.	2.40	2.40	2.40
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**100**	**100**	**100**
10	Measured Concentration of PM 10	µg/m3	46	43	30
11.	**Permissible limits for PM 2.5***	**µg/m3**	**60**	**60**	**60**
12.	Measured Concentration of PM 2.5	µg/m3	17	14	13
13.	**Permissible limits for SO_2***	**µg/m3**	**80**	**80**	**80**
14	Measured Concentration of SO_2	µg/m3	2.3	3.9	1.9
15.	**Permissible limits for NO_2***	**µg/m3**	**80**	**80**	**80**
16.	Measured Concentration of NO_2	µg/m3	17.6	16.1	13.8
17.	**Permissible limit for CO ****	**µg/m3**	**2000**	**2000**	**2000**
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used : (1) 3 Nos RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos PM 2.5 Sampler (AAS 127)

All Calibration due on 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009. & ** Results are 8 hourly monitoring values.

Royal Environment Auditing & Consultancy Service

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, Bis. Bat Adalat, Gondal Road, RAJKOT - 360 002.
Ph. +91 281 2360685 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref No : 679/11/2015-16

Date: 03/12/2015

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr.No.	Particulars	Unit	AAQM - 1 (S)	AAQM - 2 (SSW)	AAQM - 3 (WSW)	AAQM - 4 (NW)
01.	**Location of Ambient**	----	Old Colony (Nr. Environment Laboratory)	Nr. Rain Water Harvesting	LPG Yard (Nr. Water Reservoir)	Between Sinter - 2 & Spiral - 2
02.	Date of sampling	----	17/11/2015	17/11/2015	18/11/2015	18/11/2015
03	Time of sampling	----	8.30	8.55	9.00	9.25
04	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05	Dominant Wind Direction (From)	----	NE	NE	NE	NE
06	Average Wind Speed	Km/Hr.	4.5	4.5	2.7	2.7
07	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0	1.0
08	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	µg/m3	100	100	100	100
10	Measured Concentration of PM 10	µg/m3	29	38	44	48
11.	**Permissible limits for PM 2.5***	µg/m3	60	60	60	60
12	Measured Concentration of PM 2.5	µg/m3	13	16	23	15
13.	**Permissible limits for SO_2***	µg/m3	80	80	80	80
14	Measured Concentration of SO_2	µg/m3	1.2	3.5	4.2	3.1
15.	**Permissible limits for NO_2***	µg/m3	80	80	80	80
16	Measured Concentration of NO_2	µg/m3	7.5	10.8	9.4	8.9
17.	**Permissible limit for CO ****	µg/m3	2000	2000	2000	2000
18	Measured Concentration of CO	µg/m3	BDL	BDL	BDL	BDL

Instrument used : (1) Ecotech make 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampling Kit (APM 109), & 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009 & ** Results are 8 hourly monitoring values

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 680/11/2015-16

Date: 03/12/2015

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	AAQM - 5 (NE)	AAQM - 6 (SE)	AAQM - 7 (ESE)	AAQM - 8 (E)
01.	**Location of Ambient**	----	**Labour Colony**	**New Colony (Shopping Centre)**	**VIP Guest House**	**Weigh bridge**
02.	Date of sampling	----	20/11/2015	20/11/2015	21/11/2015	21/11/2015
03.	Time of sampling	-----	9.15	9.35	9.30	9.50
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05	Dominant Wind Direction (From)	-----	E	E	SE	SE
06.	Average Wind Speed	Km/Hr.	3.40	3.40	3.30	3.30
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	µg/m3	**100**	**100**	**100**	**100**
10	Measured Concentration of PM 10	µg/m3	40	35	31	42
11.	**Permissible limits for PM 2.5***	**µg/m3**	**60**	**60**	**60**	**60**
12	Measured Concentration of PM 2.5	µg/m3	19	26	24	21
13.	**Permissible limits for SO_2***	**µg/m3**	**80**	**80**	**80**	**80**
14.	Measured Concentration of SO_2	µg/m3	4.8	2.9	3.7	5.5
15.	**Permissible limits for NO_2***	µg/m3	**80**	**80**	**80**	**80**
16.	Measured Concentration of NO_2	µg/m3	9.7	8.3	11.2	13.2
17.	**Permissible limit for CO ****	**µg/m3**	**2000**	**2000**	**2000**	**2000**
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL	BDL

nstrument used : (1) Ecotech make 3 Nos. RDS (APM - 217 BL). (2) 3 Nos. Gaseous Sampling Kit (APM 109). & 3 Nos. PM 2.5 Sampler (AAS 127)

BDL= Below Detectable Limit

All Calibration due on : 25/05/2016

*Permissible Limits are as per NAAQ Standard 16th November 2009. & ** Results are 8 hourly monitoring values.

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. :681/11/2015-16

Date: 03/12/2015

FUGITIVE EMISSION MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23/22

Sr. No.	Particulars	Unit	A - 1	A - 2	A - 3
01.	**Location of Ambient**	---	**RMH Junction House**	**RMH Stock House**	**Sinter RMH Yard**
02.	Date of sampling	----	22/11/2015	22/11/2015	23/11/2015
03.	Time of sampling	-----	8.05	8.25	8.15
04.	Duration of Sampling	Hr	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	-----	NE	NE	NNE
06.	Average Wind Speed	Km/Hr.	2.1	2.1	2.5
07.	Average flow rate during sampling	m3/Hr	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**3000**	**3000**	**3000**
10	Measured Concentration of PM 10	µg/m3	1121	1302	1024
11.	**Permissible limits for SO2***	**µg/m3**	**150**	**150**	**150**
12.	Measured Concentration of SO2	µg/m3	11.5	10.7	12.6
13.	**Permissible limits for NO2***	**µg/m3**	**120**	**120**	**120**
14.	Measured Concentration of NO2	µg/m3	26.8	27.4	25.5
15.	**Permissible limit for CO ****	µg/m3	**2000**	**2000**	**2000**
16.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL
17.	**Permissible limit for Pb***	µg/m3	**2**	**2**	**2**
18.	Measured Concentration of Pb	µg/m3	ND	ND	ND

Instrument used : (1) 3 Nos. RDS (APM - 217 BL). (2) 3 Nos. Gaseous Samoler (APM 109)
All Calibration due on : 25/05/2016

BDL= Below Detectable Limit
ND= Not Detectable

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304 Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. :682/11/2015-16

Date: 03/12/2015

FUGITIVE EMISSION MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23/22

Sr. No.	Particulars	Unit	A - 4	A - 5	A - 6
01.	**Location of Ambient**	----	**Sinter 2 Ground Hopper**	**DISP "CCM" Area**	**BF CAST HOUSE**
02.	Date of sampling	----	23/11/2015	24/11/2015	24/11/2015
03.	Time of sampling	-----	8.35	8.00	8.20
04.	Duration of Samp ing	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	-----	NNE	NE	NE
06.	Average Wind Speed	Km/Hr.	2.50	2.60	2.80
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**3000**	**3000**	**3000**
10.	Measured Concentration of PM 10	µg/m3	617	420	807
11.	**Permissible limits for SO2***	**µg/m3**	**150**	**150**	**150**
12.	Measured Concentration of SO2	µg/m3	9.2	13.1	10.5
13.	**Permissible limits for NO2***	**µg/m3**	**120**	**120**	**120**
14.	Measured Concentration of NO2	µg/m3	23.1	30.4	28.3
15.	**Permissible limit for CO ****	**µg/m3**	**2000**	**2000**	**2000**
16.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL
17.	**Permissible limit for Pb***	**µg/m3**	**2**	**2**	**2**
18	Measured Concentration of Pb	µg/m3	ND	ND	ND

Instrument used : (1) 3 Nos. RDS (APM - 217 BL). (2) 3 Nos. Gaseous Sampler (APM 109)
All Calibration due on : 25/05/2016

BDL= Below Detectable Limit
ND= Not Detectable

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royaconsultancy.com

Ref. No. : 683/11/2015-16

Date: 03/12/2015

Performance Evaluation of Air Pollution Control Equipments

Sinter Plant-1 (GPCB ID 35456)

Name of company : JINDAL SAW LIMITED,
Village :Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 6
01	Date of Sampling	---	10/11/2015	Not in operation during visit	10/11/2015	10/11/2015
02	Attached to	---	Fuel & Flux crusher & screening building	Fuel & Flux crushing house	Sinter Furnace	Discharge end
03	Stack Height	Meter	32	27	50	32
04	Stack Diameter	Meter	1.4	1.4	2.0	1.3
05	Stack Temperature	°C	52		141	127
06	Ambient Temperature	°C	31		28	30
07	Average Velocity of Flue Gases	m/sec.	15.8	..	39.7	35.9
08	IsoKinetic Flowrate for Sampling	LPM	27	.	14	13
09	Inlet	mg/Nm^3	2869	..	3216	2994
10	Outlet	mg/Nm^3	25	.	46	33
11	Efficiency	%	99.13	.	98.57	98.90

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Ba Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 • E-mail : royalenvironment@live.com • admin@royalconsultancy.com

Ref. No. : 684/11/2015-16

Date: 03/12/2015

Blast Furnace Plant-1(GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1
01	Date of Sampling	---	21/11/2015
02	**Attached to**	---	**De-dustingSystem**
03	Stack Height	Meter	35
04	Stack Duct Diameter	Meter	1.4
05	Stack Temperature	°C	52
06	Ambient Temperature	°C	32
07	Average Velocity of Flue Gases	m/sec.	15.5
08	IsoKinetic Flowrate for Sampling	LPM	27
09	Inlet	mg/Nm^3	2164
10	Outlet	mg/Nm^3	11
11	Efficiency	%	99.49

Note Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Calibration due on 25/09/2016

Care for Environment · Environment will care for you

Royal
Environment Auditing & Consultancy Service

303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph. +91 281 2360695 • E-mail royalenvironment@live.com • admin@royalconsultancy.com

Ref. No. 685/11/2015-16

Date: 23/11/2015

Performance Evaluation of Air Pollution Control Equipments

Sinter Plant-2 (GPCB ID:29017)

Name of company: JINDAL SAW LIMITED,
Village: Samaghogha,
Tal: Mundra, Dist: Kutch

Test Method: As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 7	S - 9	S-10
01	Date of Sampling	---	12/11/2015	12/11/2015	12/11/2015	11/11/2015	11/11/2015	13/11/2015
02	Attached to	---	Fuel crushing de-duster system (Fuel)	Fuel crushing de-duster system (Flux)	Fuel screening deduster system (Flux screening)	Sinter Furnace	Discharging end of Sinter de-dusting System	Pulverised Coal Injection
03	Stack Height	Meter	30	30	30	50	50	32
04	Stack Diameter	Meter	0.7	0.7	0.7	2.0	1.3	[illegible]
05	Stack Temperature	°C	43	51	45	143	107	[illegible]
06	Ambient Temperature	°C	29	28	30	28	29	30
07	Average Velocity of Flue Gases	m/sec.	15.9	15.7	18.1	36.3	39.5	[illegible]
08	Isokinetic Flowrate for Sampling	LPM	28	2[illegible]	25	12	15	25
09	Inlet	mg/Nm³	2306	2593	2637	3850	2601	[illegible]
10	Outlet	mg/Nm³	13	38	26	59	34	[illegible]
11	Efficiency	%	99.44	99.40	99.01	98.47	98.69	[illegible]

Note: Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively
Note: Instrument used: 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS1
Calibration due on 25/09/2016

For, Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref No 686/11/2015-16

Date 03/12/2015

Performance Evaluation of Air Pollution Control Equipments

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED.
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 7	S - 8	S - 12	S - 18	S - 22
01	Date of Sampling	---	07/11/2015	17/11/2015	07/11/2015	07/11/2015	17/11 2015
02	Attached to		Sand Reclamation	Common stack Mg Converter - I & II	Core Cleaning & Dusting - I	Core Cleaning & Dusting - II	Mg Converter - II
03	Stack Height	Meter	32	30	30	30	30
04	Stack Diameter	Meter	0.9	0.5	0.6	0.6	0.5
05	Stack Temperature	°C	109	66	53	56	97
06	Ambient Temperature	°C	33	32	32	33	32
07	Average Velocity of Flue Gases	m/sec.	33.4	15.4	14.9	15.1	15.2
08	IsoKinetic Flowrate for Sampling	LPM	12	25	25	27	23
09	Inlet	mg/Nm^3	3666	4297	3267	3459	4597
10	Outlet	mg/Nm^3	31	46	43	32	33
11	Efficiency	%	99.15	98.89	98.68	99.07	99.28

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph. +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref No 887/11/2015-16 Date 28/11/2015

Performance Evaluation of Air Pollution Control Equipments

Pipe Plant (GPCB ID:18036)

Name of company JINDAL SAW LIMITED.
Village Samaghogha
Tal Mundra, Dist. Kutch

Test Method As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 9	S - 10	S - 15	S - 16	S - 20	S - 21	S - 23
01	Date of Sampling	---	06/11/2015	Not in operation during visit	06/11/2015	Not in operation during visit	06/11/2015	Not in operation during visit	06/11/2015
02	Attached to	---	Zinc Coating - I	Barrel Grinding-I	Zinc Coating - II	Barrel Grinding-II	Zinc Coating - III	Barrel Grinding-III	Zinc Coating - III & IV
03	Stack Height	Meter	30	30	30	30	30	30	30
04	Stack Duct Diameter	Meter	0.6	0.6	0.6	0.6	0.6	0.6	0.6
05	Stack Temperature	°C	56	-	59	-	52	-	45
06	Ambient Temperature	°C	29	-	30	-	32	-	33
07	Average Velocity of Flue Gases	m/sec	16.1	-	16.6	-	37.7	-	14.4
08	Isokinetic Rotameter for Sampling	LPM	27	-	26	-	14	-	25
09	PM*	mg/Nm³	1713	-	2165	-	1937	-	1347
10	SO2*	mg/Nm³	16	-	13	-	10	-	8
11	Efficiency	%	99.07	-	99.39	-	99.48	-	99.41

Note : Maximum Permissible Limit of SO2 & Nox is 0.1 and 0.15 ppm respectively.
Instrument Used : Kit Nos of Stack Monitoring Kit - Vayubodhan make VSS I
Calibration Due on 25.05.2016

Royal Environment Auditing & Consultancy Service

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph. +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 688/11/2015-16

Date: 03/12/2015

Performance Evaluation of Air Pollution Control Equipments

Pipe Plant (SDP-2) (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED.
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 5	S - 8	S-8
01	Date of Sampling	---	25/11/2015	25/11/2015	25/11/2015	26/11/2015
02	Attached to	---	Mg Treatment	Zinc Coating	Tri-Grinding	Zinc Coating machine
03	Stack Height	Meter	30	30	30	30
04	Stack Duct Diameter	Meter	1.00	1.00	1.00	0.8
05	Stack Temperature	°C	51	49	42	54
06	Ambient Temperature	°C	29	30	31	31
07	Average Velocity of Flue Gases	m/sec.	14.3	15.2	12.8	14.5
08	IsoKinetic Flowrate for Sampling	LPM	25	26	23	25
09	Inlet	mg/Nm^3	2966	3249	2569	1535
10	Outlet	mg/Nm^3	37	22	20	12
11	Efficiency	%	98.75	99.32	99.22	99.22

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Aoalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 689/11/2015-16

Date: 03/12/2015

Performance Evaluation of Air Pollution Control Equipments

Blast Furnace Plant-2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 4	S - 5
01	Date of Sampling	---	18/11/2015	18/11/2015	18/11/2015
02	Attached to	---	Dedusting System	Coke fine building dust collecting system	Iron Ore fine & Dust Collecting System
03	Stack Height	Meter	40	30	30
04	Stack Duct Diameter	Meter	1.5	0.85	0.65
05	Stack Temperature	°C	67	69	43
06	Ambient Temperature	°C	28	32	31
07	Average Velocity of Flue Gases	m/sec.	37.5	17.3	15.1
08	IsoKinetic Flowrate for Sampling	LPM	16	28	27
09	Inlet	mg/Nm^3	4319	2022	1734
10	Outlet	mg/Nm^3	42	7	4
11	Efficiency	%	99.03	99.65	99.77

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Ba. Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royaconsultancy.com

Ref. No. 690/11/2015-16

Date 03/12/2015

STACK EMISSION MONITORING RESULTS

Sinter Plant - 1(GPCB ID:35456)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6
01	Date of Sampling	---	10/11/2015	Not in operation during visit	13/11/2015	NA	NA	10/11/2015
02	Time of sampling	---	14.30		9.20			10.50
03	Stack Attached to	---	Fuel & Flux Crusher and Screening building	Fuel & Flux Crushing House	Sinter Furnace	Primary Mixture House	Secondary Mixture House	Discharge End
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	ESP	---	---	ESP
05	Stack Height	Meter	32.0	27.00	50	19.75	36.08	32
06	Stack Diameter	Meter	1.40	1.40	2.0	1.25	1.25	1.30
07	Stack Temperature	°C	45	..	147	..	...	139
08	Ambient Temperature	°C	3'	.	28	. .	.	30
09	Average Velocity of Flue Gases	m/sec.	10.2	....	7.2	....	....	7.4
10	Isokinetic flow rate for P.M. Sampling	LPM	18	.. .	22	....	.	24
11	Gaseous Sampling Flow Rate	LPM	2.0	---	2.0	---	---	2.0
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	25	...	46	...	.	33
14	Permissible limits for SO2	ppm	NA	NA	100	NA	NA	NA
15	Measured Concentration of SO2	ppm	---	---	ND	---	---	---
16	Permissible limits for NOx	ppm	NA	NA	50	NA	NA	NA
17	Measured Concentration of NOx	ppm	---	---	8.7	---	---	---

Note : Minimum Detectable Limit of SO2 & Nox s 0.1 and 0.01 ppm respectively.

NA= Not Applicable

Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I

Calibration due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph : +91 281 2360695 • E-mail : royalenvironment@live.com • admin@royalconsultancy.com

Ref No 691/11/2015-16

Date 03/12/2015

STACK EMISSION MONITORING RESULTS

Sinter Plant -2 (GPCB ID:29017)

Name of company JINDAL SAW LIMITED,

Village. Samaghogha,

Tal . Mundra, Dist. Kutch

Test Method As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 7	S - 8	S - 9	S - 10
01	Date of Sampling	---	12/11/2015	12/11/2015	12/11/2015	Not in operation during visit	NA	NA	11/11/2015	13/11/2015	11/11/2015	13/11/2015
02	Time of sampling	Hr.	9.15	10.30	11.40				9.00	9.45	10.20	11.45
03	Stack Attached to	---	Fuel crushing de-duster systen (Flux)	Fuel crushing de-duster system(Fuel)	Fuel Screening deduster System (Flux Screening)	No.1 Transfer Station De-duster System	Primary Mixer De-duster system	Secondary Mixer De-duster system	Sinter Furnace	Transfer station no. 4 & 5 dedusting system	Discharging End of sinter de-dusting system	Pulverized Coal Injection
04	Air Pollution Control Measures	---	Dust Collector	Dust Collector	Dust Collector	Dust Collector	Dust Collector	Dust Collector	ESP	Dust Collector	ESP	Bag House
05	Stack Height	Meter	30	30	30	30	20	30	50	30	55	32
06	Stack Diameter	Meter	0.7	0.7	0.7	0.7	---	---	2	0.7	1.0	1.00
07	Stack Temperature	°C	42	35	38	---	---	---	152	36	118	143
08	Ambient Temperature	°C	28	29	30	---	---	---	28	29	29	31
09	Average Velocity of Flue Gases	m/sec	14.2	11.7	8.2	---	---	---	11.2	4.8	10.6	11.3
10	Isokinetic flowrate for P.M. Sampling	LPM	25	21	15	---	---	---	15	20	17	12
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	---	---	2.0	---	---	2.1
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	18	13	29	---	---	---	59	11	34	37
14	Permissible limits for SO2	ppm	NA	NA	NA	NA	NA	NA	100	NA	NA	100 (ppm)
15	Measured Concentration of SO2	ppm	---	---	---	---	---	---	ND	---	---	ND
16	Permissible limits for NOx	ppm	NA	NA	NA	NA	NA	NA	50	NA	NA	50 (ppm)
17	Measured Concentration of NOx	ppm	---	---	---	---	---	---	10.6	---	---	9.5

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively

NA= Not Applicable

Instrument Used : 2 nos of Stack Monitoring Kit - Vayubodhan make - VSS -

Calibration due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref No :692/11/2015-16

Date :03/12/2015

STACK EMISSION MONITORING RESULTS

BLAST FURNACE - 2 (GPCB ID:29026)

Name of company :JINDAL SAW LIMITED,
Village: Samaghogha.
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5
01	Date of Sampling	---	18/11/2015	18/11/2015	Monitoring Not Possible	18/11/2015	18/11/2015
02	Time of sampling	Hr	9.00	10.15		14.20	15.50
03	Stack Attached to	---	Dedusting System	Stove Stack	Flare Stack	Coke fine building dust collecting system	Iron Ore fine & Dust Collecting System
04	Air Pollution Control Measures	---	Bag Filter	---	---	Bag Filter	Bag Filter
05	Stack Height	Meter	40.0	65.0	45	30.0	30.0
06	Stack Diameter	Meter	1.5	2.250	---	---	0.85
07	Stack Temperature	°C	49	234	---	58	37
08	Ambient Temperature	°C	29	30	---	32	31
09	Average Velocity of Flue Gases	m/sec.	35.8	2.8	---	13.2	10.9
10	Isokinetic flow rate for P.M. Sampling	LPM	16	7	---	22	20
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	42	2	---	7	4
14	Permissible limits for SO2	mg/Nm3	NA	NA	NA	NA	NA
15	Measured Concentration of SO2	mg/Nm3	---	---	---	---	---
16	Permissible limits for NOx	mg/Nm3	NA	NA	NA	NA	NA
17	Measured Concentration of Nox	mg/Nm3	---	---	---	---	---

NA=Not Applicable

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Vayubodhan make - VSS I
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 • E-mail : royalenvironment@live.com • admin@royalconsultancy.com

Ref No. 693/11/2015-16

Date: 30/12/2015

STACK EMISSION MONITORING RESULTS

BLAST FURNACE-1 (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5
01	Date of Sampling	---	21/11/2015	21/11/2015	21/11/2015	21/11/2015	Monitoring Not Possible
02	Time of sampling	Hr.	14.25	9.05	10.20	15.30	
03	**Stack Attached to**	---	**Dedusting System**	**Boiler - I**	**Boiler - II**	**Stove Stack**	**Flare Stack**
04	Air Pollution Control Measures	---	Bag Filter	---	---	---	---
05	Stack Height	Meter	35.0	45	45	50.0	30
06	Stack Diameter	Meter	1.5	1.4	1.4	2.25	---
07	Stack Temperature	°C	41	171	178	223	---
08	Ambient Temperature	°C	32	29	30	32	---
09	Average Velocity of Flue Gases	m/sec.	10.3	4.2	4.5	3.1	---
10	Isokinetic flow rate for P.M. Sampling	LPM	18	12	13	8	---
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	---
12	**Permissible limits for PM**	**mg/Nm3**	**150**	**150**	**150**	**150**	150
13	Measured Concentration of PM.	mg/Nm3	11	8	6	3	---
14	**Permissible limits for SO2**	**mg/Nm3**	**40**	**40**	**40**	**40**	**40**
15	Measured Concentration of SO2	mg/Nm3	ND	ND	ND	ND	---
16	**Permissible limits for NOx**	**mg/Nm3**	**25**	**25**	**25**	**25**	**25**
17	Measured Concentration of Nox	mg/Nm3	ND	ND	ND	ND	---

N.D=Not Detectable

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Vayubodhan make - VSS 1
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref No. 694/11/2015-16

Date: 03/12/2015

STACK EMISSION MONITORING RESULTS

Captive Power Plant (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4
01	Date of Sampling	---	Not In Operation During The Visit	Not In Operation During The Visit	Not In Operation During The Visit	Not In Operation During The Visit
02	Time of sampling	Hr.				
03	Stack Attached to	---	6000 KVA D.G.	3240 KVA D.G.	3240 KVA D.G.	1180 KVA D.G.
04	Air Pollution Control Measures	---	---	---	---	---
05	Stack Height	Meter	57.0	35	35	35
06	Stack Diameter	Meter	1.984	1.484	1.484	0.980
07	Stack Temperature	°C	---	---	---	---
08	Ambient Temperature	°C	---	---	---	---
09	Average Velocity of Flue Gases	m/sec.	---	---	---	---
10	Isokinetic flow rate for P.M. Sampling	LPM	---	---	---	---
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	---	---	---	---
14	Permissible limits for SO2	ppm	100	100	100	100
15	Measured Concentration of SO2	ppm	---	---	---	---
16	Permissible limits for Nox	ppm	50	50	50	50
17	Measured Concentration of Nox	ppm	---	---	---	---

Note Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively

Instrument Used Stack Monitoring Kit - Vayubodhan make - VSS I

Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 695/11/2015-16

Date: 03/12/2015

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr No.	Particulars	Unit	S - 11	S - 17	S - 25	S - 26	S - 27
01	Date of Sampling	---	Not In Operation During The Visit	16/11/2015	23/11/2015	23/11/2015	Not In Operation During The Visit
02	Time of sampling	Hr.		14.25	11.30	12.45	
03	Stack Attached to	---	Bitumin Drying Oven - I	Common stack Bitumin Drying Oven - II & Boiler	Shot Blasing - I	Shot Blasing - II	Shot Blasing - III
04	Air Pollution Control Measures	---	---	---	Bag Filter	Bag Filter	Bag Filter
05	Stack Height	Meter	32.8	32.8	10.0	10.0	10.0
06	Stack Diameter	Meter	1.375	1.375	0.41	0.41	1.125
07	Stack Temperature	°C	---	155	42	40	---
08	Ambient Temperature	°C	---	33	32	32	---
09	Average Velocity of Flue Gases	m/sec.	---	5.5	13.8	12.5	---
10	Isokinetic flow rate for P.M. Sampling	LPM	---	16	24	22	---
11	Gaseous Sampling Flow Rate	LPM	---	2.0	2.0	2.0	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	---	68	21	18	---
14	Permissible limits for SO2	mg/Nm3	100 ppm	100 ppm	40	40	40
15	Measured Concentration of SO2	mg/Nm3	---	21.8	ND	ND	---
16	Permissible limits for Nox	mg/Nm3	50 ppm	50 ppm	25	25	25
17	Measured Concentration of Nox	mg/Nm3	---	19.6	ND	ND	---

N D= Not Detectable

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS1
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

146

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref No. : 696/11/2015-16

Date 03/12/2015

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED.
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 8	S - 9	S - 15	S - 20	S - 22	S - 23
01	Date of Sampling	---	17/11/2015	06/11/2015	06/11/2015	06/11/2015	17/11/2015	06/11/2015
02	Time of sampling	Hr.	15.10	9.00	10.30	14.20	10.00	15.45
03	**Stack Attached to**	---	**Common stack Mg Converter-I&II**	**Zn Coating - I**	**Zn Coating - II**	**Zn Coating - III**	**Mg Converter - III**	**Zn Coating - IV & V**
04	Air Pollution Control Measures	---	Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Separator & Bag Filter	Bag Filter	Cyclone Separator & Bag Filter
05	Stack Height	Meter	30	30	30	30	30	30
06	Stack Diameter	Meter	0.5	0.6	0.6	0.6	0.5	0.9
07	Stack Temperature	°C	47	45	44	41	60	36
08	Ambient Temperature	°C	32	29	30	32	32	33
09	Average Velocity of Flue Gases	m/sec.	24.9	14.6	14.2	15.7	11.3	5.8
10	Isokinetic flow rate for P.M. Sampling	LPM	11	26	25	28	19	24
11	Gaseous Sampling Flow Rate	LPM	2.0	---	---	---	2.0	---
12	**Permissible limits for PM**	**mg/Nm3**	**150**	**20 (Zn)**	**20 (Zn)**	**20 (Zn)**	**150**	**20 (Zn)**
13	Measured Concentration of PM	mg/Nm3	48	16 (Zn)	13 (Zn)	10 (Zn)	33	36 (Zn)
14	**Permissible limits for SO2**	**mg/Nm3**	**40**	**NA**	**NA**	**NA**	**40**	**NA**
15	Measured Concentration of SO2	mg/Nm3	ND	---	---	---	ND	---
16	**Permissible limits for Nox**	**mg/Nm3**	**25**	**NA**	**NA**	**NA**	**25**	**NA**
17	Measured Concentration of Nox	mg/Nm3	2.9	---	---	---	2.2	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
N.A=Not Applicable
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS
Calibrat on due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref No 697/11/2015-16

Date 03/12/2015

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha.
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 12	S - 18
01	Date of Sampling	---	05/11/2015	05/11/2015	05/11/2015	05/11/2015	05/11/2015	05/11/2015	07/11/2015	07/11/2015
02	Time of sampling	Hr.	8.50	9.45	10.55	12.05	14.10	15.20	10.15	11.30
03	Stack Attached to	---	Core Shop-I	Core Shop-II	Core Shop-III	Core Shop-IV	Core Shop-V	Core Shop-VI	Core Cleaning & Dusting-I	Core Cleaning & Dusting-II
04	Air Pollution Control Measures	---	---	---	---	---	---	---	Bag Filter	Bag Filter
05	Stack Height	Meter	30	30	30	30	30	30	30	30
06	Stack Diameter	Meter	0.584	0.584	0.584	0.584	0.584	0.584	0.6	0.6
07	Stack Temperature	°C	36	37	38	39	40	42	48	45
08	Ambient Temperature	°C	29	29	30	31	32	32	32	33
09	Average Velocity of Flue Gases	m/sec	4.7	4.5	4.2	5.5	5.1	4.9	14.3	14.8
10	Isokinetic flow rate for P.M. Sampling	LPM	19	18	17	22	21	20	25	26
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	**Permissible limits for PM**	**mg/Nm3**	**150**	**150**	**150**	**150**	**150**	**150**	**150**	**150**
13	Measured Concentration of PM	mg/Nm3	19	25	31	29	38	16	43	32
14	**Permissible limits for SO2**	**mg/Nm3**	**40**	**40**	**40**	**40**	**40**	**40**	**40**	**40**
15	Measured Concentration of SO2	mg/Nm3	2.8	2.1	2.6	1.8	3.3	2.4	ND	ND
16	**Permissible limits for Nox**	**mg/Nm3**	**25**	**25**	**25**	**25**	**25**	**25**	**25**	**25**
17	Measured Concentration of Nox	mg/Nm3	1.9	1.5	2.1	1.8	2.3	2.6	3.8	4.2

Note Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively. N D= Not Detectable

Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I

Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref No 698/11/2015-16

Date 03/12/2015

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company JINDAL SAW LIMITED,
Village Samaghogha,
Tal. Mundra, Dist. Kutch

Test Method As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 7	S - 10	S - 13	S - 14	S - 16	S - 19	S - 21	S - 24
01	Date of Sampling	---	07/11/2015	Not in operation during visit	24/11/2015	24/11/2015	Not in operation during visit	24/11/2015	Not in operation during visit	Not in operation during visit
02	Time of sampling	Hr	15 15		9 30	10.50		14 05		
03	Stack Attached to	---	Sand Reclamation	Barrel Grinding - I	Annealing Furnace - I	Annealing Furnace - II	Barrel Grinding - II	Annealing Furnace - III	Barrel Grinding-III	Barrel Grinding -IV&V
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	---	---	Bag Filter	---	Bag Filter	Bag Filter
05	Stack Height	Meter	30	30	32	32	30	32	30	30
06	Stack Diameter	Meter	0 9	0 6	1.375	1 375	0 6	1.375	0 5	0 5
07	Stack Temperature	°C	84		164	167		169		
08	Ambient Temperature	°C	33		28	29		31		
09	Average Velocity of Flue Gases	m/sec	14 6		5 8	5 8		6 2		
10	Isokinetic flow rate for P M Sampling	LPM	23		16	17		18		
11	Gaseous Samping Flow Rate	LPM	2 0		2 0	2 0		2 0		
12	**Permissible limits for PM**	**mg/Nm3**	**150**	**150**	**150**	**150**	**150**	**150**	**150**	**150**
13	Measured Concentration of PM	mg/Nm3	31		18	16		19		
14	**Permissible limits for SO2**	**mg/Nm3**	**40**	**40**	**100 (PPM)**	**100 (PPM)**	**40**	**100 (ppm)**	**40**	**40**
15	Measured Concentration of SO2	mg/Nm3	6 3		2 7	2 7		1.9		
16	**Permissible limits for Nox**	**mg/Nm3**	**25**	**25**	**50 (PPM)**	**50 (PPM)**	**25**	**50 (PPM)**	**25**	**25**
17	Measured Concentration of Nox	mg/Nm3	11 6		6 9 (PPM)	6 2 (PPM)		5 8 (PPM)		

N.D= Not Detectable

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively

Instrument Used : 2 Nos of Stack Monitoring Kit - Vayusodhan make - VSG I

Calibration due on 25-03-2016

For, Royal Environment Auditing & Consultancy Service

Analyst

149

Royal
Environment Auditing & Consultancy Service
303-304 Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No 599-11 2015-16

Date 03.12.2015

STACK EMISSION MONITORING RESULTS

Pipe Plant (SDP-2) (GPCB ID:18036)

Name of company JINDAL SAW LIMITED.
Village Samaghogha
Tal Mundra, Dist. Kutch

Test Method As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 7	S - 8
01	Date of Sampling	---	25/11/2015	26/11/2015	26/11/2015	26/11/2015	25/11/2015	25/11/2015	Not in operation during visit	26/11/2015
02	Time of sampling	Hr	9.40	15.30	9.10	10.25	14.30	15.50		14.10
03	Stack Attached to	---	Magnesium Treatment	Socket Cleaning	Annealing Furnace - I	Annealing Furnace - II	Zinc Coating	Tri- Grinding Section	Pre & Post Heating	Zinc Coating Machine
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	---	---	Bag Filter	Bag Filter	---	---
05	Stack Height	Meter	30	30	45	45	30	30	30	30
06	Stack Diameter	Meter	1.00	0.50	0.85	0.85	1.00	1.00	0.85	1.20
07	Stack Temperature	°C	43	37	145	140	40	38	---	42
08	Ambient Temperature	°C	29	31	28	29	30	31	---	31
09	Average Velocity of Flue Gases	m/sec	3.7	3.1	4.3	4.6	4.5	3.8	---	4.2
10	Isokinetic flow rate for P.M. Sampling	LPM	15	13	13	14	19	16	---	17
11	Gaseous Sampling Flow Rate	LPM	---	---	2.0	2.0	---	---	---	---
12	Permissible limits for PM	mg/Nm3	50	50	50	50	50	50	50	50
13	Measured Concentration of PM	mg/Nm3	37	16	14	18	22 (Zn)	20	---	12
14	Permissible limits for SO2	PPM	NA	NA	100	100	NA	NA	NA	NA
15	Measured Concentration of SO2	PPM	---	---	Nil	2.4	---	---	---	---
16	Permissible limits for Nox	PPM	NA	NA	50	50	NA	NA	NA	NA
17	Measured Concentration of Nox	PPM	---	---	4.2	4.7	---	---	---	---

Note: Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Calibration due on 25.09.2016

Nil= Not Detectable
*= Not Applicable

For, Royal Environment Auditing & Consultancy Service

Analyst

150

Ref. No. : 700/11/2015-16

Date: 03/12/2015

Form No. 37

(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant.: **Sinter Plant-2 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID:29017)**

2 Raw materials, by products and finished products involved in the process. **TOTAL DUST**

3 Particulars of sampling

Date of Sampling : 13th November, 2015

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remarks	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Sinter Plant At First Floor	Total Dust	Personal Respirable Dust sampler APM 800	02	4-6	5.0	10	Gravimetric	4	----		Mr. MANOJ SONRAT

Instruments used : Envirotech make personal sampler, Model No. APM 800

For, Royal Environment Auditing & Consultancy Service

(Authorized Sign

Ref. No 73*/11/2015-16

Date 03/12/2015

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant.: **Sinter Plant-1 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID: 35466)**

2 Raw materials, by products and finished products involved in the process. **TOTAL DUST**

3 Particulars of sampling

Date of Sampling : 13th November, 2015

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Sinter Plant At First Floor	Total Dust	Personal Respirable Dust sampler APM 800	02	5-6	5.5	*0	Gravimetric	5	---		Mr. MANOJ SONRAT

Instruments used Envirotech make personal sampler. Model No. APM 800

For, Royal Environment Auditing & Consultancy Service

Authorized Sign

Ref No . 702/11/2015-16

Date. 03/12/2015

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant.: **BF Plant-1 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID: 18037)**

2 Raw materials, by products and finished products involved in the process. **TOTAL DUST & CO.**

3 Particulars of sampling

Date of Sampling . 13th November, 2015

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	BF Plant (Cast House)	CO	Personal Respirable Dust sampler APM 800	02	14-16	15.0	55	Gravimetric	5	----		Mr. MANOJ SONRAT
		Total Dust			5-7	6.0	10					

Instruments used Envirotech make personal sampler, Model No APM 300

For. Royal Environment Auditing & Consultancy Service

Authorized Sign

Ref No. : 703/11/2015-16

Date: 03/12/2015

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1. Name of the Department/Plant.: BF Plant-2 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID: 29026)
2. Raw materials, by products and finished products involved in the process. TOTAL DUST & CO.
3. Particulars of sampling

Date of Sampling 13th November, 2015

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Refrance Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	BF Plant (Cast House)	CO	Personal Respirable Dust sampler APM 800	02	13-15	14.0	55	Gravimetric	4	----		Mr. MANOJ SONRAT
		Total Dust			5-6	5.5	10					

Instruments used Envirotech maxe personal sampler, Model No APM 800

For, Royal Environment Auditing & Consultancy Service

Authorized Sign

154

Ref No 704/11/2015-16

Date 03/12/2015

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1. Name of the Department/Plant.: **DISP,JCO & Coating Units at JINDAL SAW LIMITED, Samaghogha,(GPCB ID: 18036)**
2. Raw materials by products and finished products involved in the process. **TOTAL DUST**
3. Particulars of sampling

Date of Sampling . 14th & 15th November, 2015

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Spiral Plant (Nr. ID/OD)	Total Dust	Personal Respirable Dust sampler APM 800	02	1-2	1.5	10	Gravimetric	2	----		M/ MANOJ SONRAT
2	JCO Plant (Nr JCO Press)	Total Dust		02	1-3	2.0	10	Gravimetric	3	----		
3	Coating Plant-1 (Shot Blasting Area)	Total Dust		02	4-5	4.5	10	Gravimetric	5	----		
4	CCM Area (SDP-DISP)	Total Dust		02	5-6	5.5	10	Gravimetric	4	----		
5	Coating Plant-2 (Shot Blasting Area)	Total Dust		02	2-4	3.0	10	Gravimetric	3	----		
6	CCM Area (SDP-2)	Total Dust		02	4-6	5.0	10	Gravimetric	4	----		

Instruments used Envirotech make personal sampler, Model No. APM 800

For. Royal Environment Auditing & Consultancy Service

Authorized Sign

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Ba Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 705/11/2015-16

Date: 03/12/2015

WORK ZONE NOISE LEVEL MEASUREMENT

SINTER PLANT- 1 (GPCB ID:35456)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 15th November, 2015

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
1	Inside Control Room	39.5	45.6	41.6
2	Inside Mechanical Room	45.7	51.8	47.5
3	Inside Electrical Room	46.9	52.5	48.1
4	Inside Plant Office	48.7	55.9	50.8

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

156

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com; ▪ admin@royalconsultancy.com

Ref. No. : 706/11/2015-16

Date: 03/12/2015

WORK ZONE NOISE LEVEL MEASUREMENT
BLAST FURNACE- 1 (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 15th November, 2015

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01	Nr. Stock House	62.5	73.6	65.6
02.	Inside Control Room	44.6	52.4	46.2
03.	Inside Control room of Cast House	45.8	50.7	47.8
04.	Inside Laboratory	41.2	46.4	42.9
05.	Inside Control Room of Blower House	54.2	61.7	57.5
06.	Inside Control Room of CPP	51.6	60.2	53.7

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 707/11/2015-16

Date: 03/12/2015

WORK ZONE NOISE LEVEL MEASUREMENT
PIPE PLANT (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 15th November, 2015

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room of Annealing Furnace of DISP / SDP	47.6	52.8	50.9
02	Inside Control Room – Mill Area of Spiral Plant	59.5	63.7	60.1
03	Nr. Pipe Cutting Area of Spiral Plant	66.8	76.5	70.4
04	Inside JCO Plant	63.6	74.3	66.7
05	Inside DISP / SDP Plant	67.5	78.6	72.8
06	Inside Coating Plant	64.8	73.5	69.5
07	Nr. CCM SDP-2	63.7	71.3	65.6
08	Inside Control Room of Annealing Furnace of SDP-2	49.6	53.2	50.9
09	Nr. Zinc Coating SDP-2	65.9	76.4	70.2
10	Near Mould Shop	75.1	86.7	77.3

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

158

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B.s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ■ E-mail : royalenvironment@live.com ■ admin@royalconsultancy.com

Ref. No. : 708/11/2015-16

Date: 03/12/2015

AMBIENT NOISE LEVEL MEASUREMENT

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 14th November, 2015

Sr. No.	Location of Sampling	Value in dB(A) Day Time			Value in dB(A) Night Time		
		Min.	Max.	Leq	Min.	Max.	Leq
01.	Admin. Building	41.2	49.4	42.7	36.8	42.1	38.6
02.	Old Colony	35.4	40.5	37.1	32.1	38.3	33.5
03.	Nr. LPG Yard	51.4	59.2	52.8	47.9	53.8	49.1
04.	New Colony (School)	36.4	42.1	38.1	33.4	37.9	34.3
05.	Nr. SDP-2	55.2	63.1	56.8	52.1	58.2	54.1
06.	Nr Coating Plant	53.8	62.5	57.9	50.2	60.1	53.7
07.	Nr Gate No. 2	53.1	61.8	54.2	48.5	56.3	49.1
08.	Nr Sinter Plant-1	59.1	64.3	60.3	52.8	58.5	54.5
09.	Nr Sinter Plant-2	56.7	65.4	58.9	53.9	59.8	55.4
10.	Nr. Blast Furnace-1	55.6	59.2	56.4	50.8	57.6	52.3
11.	Nr. Blast Furnace-2	54.7	60.1	55.6	44.3	50.2	47.8
12.	Nr. Main Gate (Security Office)	42.6	51.5	44.8	38.2	43.9	40.3

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

159

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 709/11/2015-16

Date: 03/12/2015

WORK ZONE NOISE LEVEL MEASUREMENT
BLAST FURNACE - 2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 15th November, 2015

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	56.4	61.9	57.8
02	Nr. Stock House	63.8	68.1	65.1
03.	C/R Blower House	64.9	72.3	66.7

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, Brs. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 710/11/2015-16

Date. 03/12/2015

WORK ZONE NOISE LEVEL MEASUREMENT

SINTER PLANT - 2 (29017)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 15th November, 2015

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	49.7	51.9	50.5
02.	Inside Operator Room	58.6	63.2	59.9
03.	Near Proportioning Bulding	62.1	64.7	63.2
04.	Near Crusher House	66.9	74.8	69.4

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)
Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.
Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 711/11/2015-16

Date: 03/12/2015

REPORT OF DOMESTIC WASTE WATER ANALYSIS

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Source of Sample Collection : Sewage Treatment Plant (Inlet & Outlet)

Date of Sampling : 28/11/2015

Test Method : As per IS Standards - 3024

Sr. No.	Parameters	Unit	GPCB limits for Treated Effluent	Raw Sewage	Treated Effluent
01.	pH	pH Unit	----	7.55	7.25
02.	BOD (3 Days at 27°C)	mg/l	<20	169	12
03	Total Dissolve Solid	mg/l	...	1524	1655
03	COD	mg/l	...	267	48
04	Total Suspended Solid	mg/l	<30	251	17
05	Oil & Grease	mg/l	...	ND	ND
06	Residual Chlorine	mg/l	Min. 0.5	----	0.60

ND=Not Detectable

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
305-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph. +91 281 2360695 • E-mail : royalenvironment@live.com • admin@royalconsultancy.com

Ref No 723/12/2015-16

Date: 03/12/2015

Performance Evaluation of Air Pollution Control Equipments

Sinter Plant-1 (GPCB ID 35456)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255 Part 1/3

Sr. No	Particulars	Unit	S - 1	S - 2	S - 3	S - 6
01	Date of Sampling	---	Not in operation during visit	Not in operation during visit	Not in operation during visit	Not in operation during visit
02	Attached to	---	Fuel & Flux crusher & screening building	Fuel & Flux crushing house	Sinter Furnace	Discharge end
03	Stack Height	Meter	32	27	50	32
04	Stack Diameter	Meter	1.4	1.4	2.0	1.3
05	Stack Temperature	°C				
06	Ambient Temperature	°C				
07	Average Velocity of Flue Gases	m/sec	Not in operation during visit	Not in operation during visit	Not in operation during visit	Not in operation during visit
08	IsoKinetic Flowrate for Sampling	LPM				
09	Inlet	mg Nm³				
10	Outlet	mg Nm³				
11	Efficiency	%				

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Ba Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 745/12/2015-16

Date: 03/01/2016

WORK ZONE NOISE LEVEL MEASUREMENT

SINTER PLANT- 1 (GPCB ID:35456)

Name of company : JINDAL SAW LIMITED.
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 06th December, 2015

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
1	Inside Control Room	41.5	47.3	43.6
2	Inside Mechanical Room	47.8	53.6	49.5
3	Inside Electrical Room	48.6	54.2	50.2
4	Inside Plant Office	50.7	58.5	52.7

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Ref. No. [illegible] 12/2015-16

Date: 03.01.2016

Form No. 37

(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e)

Name of the Department/Plant: **Sinter Plant-1 at JINDAL SAW LIMITED, Samaghogha, (GPCB ID: 35456)**

2. Raw materials, by products and finished products involved in the process: **TOTAL DUST**

4. Particulars of sampling

Date of Sampling: 20th December, 2015

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
[illegible]	Sinter Plant-1 1st Floor	Total Dust	Personal Respirable Dust sampler IAS 001	02	4-5	4.5	10	Gravimetric	4		Manoj	Mr. MANOJ SONI[illegible]

Instruments used: Envirotech make personal sampler, Model No. IAS 001

Last calibration date: [illegible] 2015

For, Royal Environment Auditing & Consultancy Services

Authorized Sign

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - [illegible]
Ph. +91 281 2360695 • E-mail: [illegible] • [illegible]

Ref. No. 730/12/2015-16

Date: 03-01-2016

STACK EMISSION MONITORING RESULTS

Sinter Plant - 1(GPCB ID:35456)

Name of company JINDAL SAW LIMITED,
Village. Samaghogha,
Tal. . Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6
01	Date of Sampling	---	Not Running During Visit	Not in operation during visit	Not Running During Visit	Not Running During Visit	Not Running During Visit	Not Running During Visit
02	Time of sampling	...						
03	**Stack Attached to**	..	**Fuel & Flux Crusher and Screening building**	**Fuel & Flux Crushing House**	**Sinter Furnace**	**Primary Mixture House**	**Secondary Mixture House**	**Discharge End**
04	Air Pollution Control Measures	..	Bag Filter	Bag Filter	ESP	.		ESP
05	Stack Height	Meter	32.0	27.00	50	19.75	36.03	32
06	Stack Diameter	Meter	1.40	1.40	2.0	1.25	1.25	1.30
07	Stack Temperature	°C	.		.	.		
08	Ambient Temperature	°C	.		...	.		
09	Average Velocity of Flue Gases	m/sec.		.	..	.	..	
10	Isokinetic flow rate for P.M. Sampling	LPM	...	. .	.	.		
11	Gaseous Sampling Flow Rate	LPM						
12	**Permissible limits for PM**	**mg/Nm3**	**150**	**150**	**150**	**150**	**150**	**150**
13	Measured Concentration of PM.	mg/Nm3	.		..			
14	**Permissible limits for SO2**	**ppm**	**NA**	**NA**	**100**	**NA**	**NA**	**NA**
15	Measured Concentration of SO2	ppm	.	..	..	.		
16	**Permissible limits for NOx**	**ppm**	**NA**	**NA**	**50**	**NA**	**NA**	**NA**
17	Measured Concentration of NOx	ppm	...	....		. .	.	

NA= Not Applicable

Jadeja.
Royal Environment Auditing & Consultancy Service

Analyst

166

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No . 724/12/2015-16

Date: 03/01/2016

Blast Furnace Plant-1(GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1
01	Date of Sampling	---	12/12/2015
02	Attached to	---	De-dustingSystem
03	Stack Height	Meter	35
04	Stack Duct Diameter	Meter	1.4
05	Stack Temperature	°C	56
06	Ambient Temperature	°C	28
07	Average Velocity of Flue Gases	m/sec.	16.1
08	IsoKinetic Flowrate for Sampling	LPM	27
09	Inlet	mg/Nm^3	2025
10	Outlet	mg/Nm^3	9
11	Efficiency	%	99.56

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

data.

167

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Acalat, Gondal Road, RAJKOT - 360 002.
Ph. :-91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No 733/12/2015-16

Date 03.01.2016

STACK EMISSION MONITORING RESULTS

BLAST FURNACE-1 (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5
01	Date of Sampling	---	16/12/2015	16/12/2015	16/12/2015	16/12/2015	Monitoring Not Possible
02	Time of sampling	Hr.	16.15	8.50	10.00	15.10	
03	**Stack Attached to**	---	**Dedusting System**	**Boiler - I**	**Boiler - II**	**Stove Stack**	**Flare Stack**
04	Air Pollution Control Measures	---	Bag Filter	---	---	---	----
05	Stack Height	Meter	35.0	45	45	50.0	30
06	Stack Diameter	Meter	1.5	1.4	1.4	2.25	---
07	Stack Temperature	°C	44	168	175	218	---
08	Ambient Temperature	°C	28	25	25	28	---
09	Average Velocity of Flue Gases	m/sec.	11.4	4.8	4.9	3.6	---
10	Isokinetic flow rate for P.M. Sampling	LPM	20	14	14	9	----
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	---
12	**Permissible limits for PM**	**mg/Nm3**	**150**	**150**	**150**	**150**	**150**
13	Measured Concentration of PM.	mg/Nm3	3	10	11	2	----
14	**Permissible limits for SO2**	**mg/Nm3**	**40**	**40**	**40**	**40**	**40**
15	Measured Concentration of SO2	mg/Nm3	ND	ND	ND	ND	----
16	**Permissible limits for NOx**	**mg/Nm3**	**25**	**25**	**25**	**25**	**25**
17	Measured Concentration of Nox	mg/Nm3	ND	ND	ND	ND	----

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively ND=Not Detectable
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

manoj
Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s Bal Academy, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ com@royalconsultancy.co.in

Ref No /34/12/2015-16

Date 03/01/2016

STACK EMISSION MONITORING RESULTS

Captive Power Plant (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4
01	Date of Sampling	---	Not In Operation During The Visit	Not In Operation During The Visit	Not In Operation During The Visit	Not In Operation During The Visit
02	Time of sampling	Hr.				
03	Stack Attached to	---	6000 KVA D.G.	3240 KVA D.G.	3240 KVA D.G.	1180 KVA D.G.
04	Air Pollution Control Measures	---	---	---	---	---
05	Stack Height	Meter	57.0	35	35	35
06	Stack Diameter	Meter	1.984	1.484	1.484	0.980
07	Stack Temperature	°C	---	---	---	---
08	Ambient Temperature	°C	---	---	---	---
09	Average Velocity of Flue Gases	m/sec	---	---	---	---
10	Isokinetic flow rate for P.M. Sampling	LPM	---	---	---	---
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	---	---	---	---
14	Permissible limits for SO2	ppm	100	100	100	100
15	Measured Concentration of SO2	ppm	---	---	---	---
16	Permissible limits for Nox	ppm	50	50	50	50
17	Measured Concentration of Nox	ppm	---	---	---	---

Royal Environment Auditing & Consultancy Service

Analyst

Ref No. :42/12/2015-16

Date 03/01/2016

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7 A (rule).

1. Name of the Department/Plant : **BF Plant 1 at JINDAL SAW LIMITED, Samaghogha, (GPCB ID: 18037)**
2. Raw materials, by products and finished products involved in the process: **TOTAL DUST & CO.**
3. Particulars of sampling

Date of Sampling : 20th December, 2015

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	BF Plant - Cast House)	CO	Personal Respirable Dust sampler (AS 001	02	15-17	16.0	55	Gravimetric	4	--		G SAHU
		Total Dust			4-6	5.2	10					

Instrument used : Envirotech make personal sampler Model No. AS 001

Calibration Due on : 02/11/2016

For Royal Environment Auditing & Consultancy Service

Authorized Sign

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No : 746/12/2015-16

Date: 03/01/2016

WORK ZONE NOISE LEVEL MEASUREMENT
BLAST FURNACE- 1 (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 06th December, 2015

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Nr. Stock House	63.7	74.5	66.8
02.	Inside Control Room	45.2	53.8	47.6
03.	Inside Control room of Cast House	46.5	51.2	48.2
04.	Inside Laboratory	42.7	47.8	43.8
05.	Inside Control Room of Blower House	55.9	62.5	58.9
06.	Inside Control Room of CPP	52.7	61.7	54.5

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph. +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admn@royalconsultancy.com

Ref. No. : 751/12/2015-16

Date: 03/01/2016

REPORT OF DOMESTIC WASTE WATER ANALYSIS

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Source of Sample Collection : Sewage Treatment Plant (Inlet & Outlet)

Date of Sampling : 28/12/2015

Test Method : As per IS Standards - 3024

Sr. No.	Parameters	Unit	GPCB limits for Treated Effluent	Raw Sewage	Treated Effluent
01.	pH	pH Unit	----	7.54	7.25
02.	BOD (3 Days at 27°C)	mg/l	<20	160	10
03	Total Dissolve Solid	mg/l	...	1520	1650
04	COD	mg/l	...	260	45
05	Total Suspended Solid	mg/l	<30	245	18
06	Oil & Grease	mg/l	...	ND	ND
07	Residual Chlorine	mg/l	Min. 0.5	----	0.58

ND=Not Detectable

Royal Environment Auditing & Consultancy Service

Analyst

172

Royal

Environment Auditing & Consultancy Service

303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002

Ph.: +91 281 2360695 ■ E-mail: royalenvironment@live.com ■ admin@royalconsultancy.com

Ref. No.: 725-12/2015-16

Date: 03/01/2016

Performance Evaluation of Air Pollution Control Equipments

Sinter Plant-2 (GPCB ID:29017)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha

Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 7	S - 9	S-10
01	Date of Sampling	---	21/12/2015	21/12/2015	21/12/2015	22/12/2015	22/12/2015	21.12.2015
02	Attached to	---	Fuel crushing de-duster system (Fuel)	Fuel crushing de-duster system (Flux)	Fuel screening deduster system (Flux screening)	Sinter Furnace	Discharging end of Sinter de-dusting System	Pulverised Coal Injection
03	Stack Height	Meter	30	30	30	50	50	22
04	Stack Diameter	Meter	0.7	0.7	0.7	2.0	1.3	1.0
05	Stack Temperature	C	44	45	40	[illegible]	[illegible]	[illegible]
06	Ambient Temperature	C	[illegible]	28	31	27	26	31
07	Average Velocity of Flue Gases	m/sec	15.2	14.3	13.5	38.4	40.2	[illegible]
08	Isokinetic Flowrate for Sampling	LPM	[illegible]	25	24	13	[illegible]	23
09	Inlet	mg/Nm³	2235	2355	2535	3716	[illegible]	[illegible]
10	Outlet	mg/Nm³	15	12	22	36	27	20
11	Efficiency	%	99.33	99.58	99.13	99.03	[illegible]	[illegible]

Instrument used: Stack Monitoring Kit - Ecotech make - ESS 100

[illegible]

Royal Environment Auditing & Consultancy Service

Manoj

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@ave.com ▪ admin@royalconsultancy.com

Ref. No.: [illegible]

Date: [illegible]

STACK EMISSION MONITORING RESULTS

Sinter Plant -2 (GPCB ID:29017)

Name of company: JINDAL SAW LIMITED

Village: Samaghogha

Tal: Mundra, Dist: Kutch

Test Method: As per IS Standards 11255 Part 1/2007

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 7	S - 8	S - 9	S - 10
1	Date of Sampling	-	21/12/2015	21/12/2015	21/12/2015	Not in operation during visit	NA	NA	22/12/2015	Not in operation during visit	22/12/2015	21/12/2015
2	Time of sampling	Hr	10.00	11.30	13.15				10.15		11.45	15.15
3	Stack Attached to		Fuel crushing de-duster systen (Flux)	Fuel crushing de-duster system(Fuel)	Fuel Screening deduster System (Flux Screening)	No. 1 Transfer Station De-duster System	Primary Mixer De-duster system	Secondary Mixer De-duster system	Sinter Furnace	Transfer station no. 4 & 5 dedusting system	Discharging End of sinter de-dusting system	Pulverized Coal Injection
4	Air Pollution Control Measures	-	Dust Collector	Dust Collector	Dust Collector	Dust Collector	Dust Collector	Dust Collector	ESP	Dust Collector	[illegible]	[illegible]
5	Stack Height	Meter	30	30	3[illegible]	3[illegible]	20	30	50	30	[illegible]	32
6	Stack Diameter	Meter	0.7	[illegible]	[illegible]	[illegible]		—	2	0.7	[illegible]	[illegible]
7	Stack Temperature	°C	43	[illegible]	[illegible]		—	—	145	[illegible]	[illegible]	[illegible]
8	Ambient Temperature	°C	[illegible]	28	[illegible]		-	—	[illegible]	[illegible]	[illegible]	[illegible]
10	Average Velocity of Flue Gases	m/sec	14.4	[illegible]	[illegible]			—	1[illegible].6	[illegible]	[illegible]	[illegible]
11	Flow rate for P.M. Sampling	LPM	[illegible]	[illegible]	[illegible]			—	[illegible]	[illegible]	[illegible]	[illegible]
11	Gaseous flow rate	LPM						-	[illegible]			[illegible]
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	[illegible]	12	[illegible]	—	-	-	3[illegible]	[illegible]	[illegible]	[illegible]
14	Permissible limits for SO2	ppm	NA	NA	NA	NA	NA	NA	100	NA	NA	100 (ppm)
15	Measured Concentration of SO2	ppm	-	-				—	ND			[illegible]
16	Permissible limits for NOx	ppm	NA	NA	NA	NA	NA	NA	50	NA	NA	50 (ppm)
17	Measured Concentration of NOx	ppm	-	-	-	-		-	[illegible]			[illegible]

Note: Minimum Detection Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.

Instrument used: Stack Monitoring Kit, Lasteco make, LSS 105

Calibration valid till: [illegible]

NA: Not Applicable

Royal Environment Auditing & Consultancy Service

Analyst

Ref. No 740/12/2015-16

Date. 03/01/2016

Form No. 37

(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(c).

1. Name of the Department/Plant., **Sinter Plant-2 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID:29017)**
2. Raw materials, by products and finished products involved in the process **TOTAL DUST**
3. Particulars of sampling

Date of Sampling 20th December, 2015

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remarks	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
	Sinter Plant Area	Total Dust	Personal Respirable Dust sampler IAS 001	02	3-5	4.0	10	Gravimetric	5			[illegible] SONKAR

Instruments used Envirotech make personal sampler Model No IAS 001

Calibration Due on. 02/11/2016

For. Royal Environment Auditing & Consultancy Service

Authorized Sign

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 • E-mail : royalenvironment@live.com • admin3@royalconsultancy.com

Ref. No : 750/12/2015-16

Date: 03/01/2016

WORK ZONE NOISE LEVEL MEASUREMENT

SINTER PLANT - 2 (29017)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha.
Tal. : Mundra, Dist. Kutch

Date of sampling : 06th December, 2015

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	50.6	52.8	51.4
02.	Inside Operator Room	59.5	64.1	60.8
03.	Near Proportioning Bulding	63.2	65.6	64.1
04.	Near Crusher House	67.8	75.7	70.3

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)
Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.
Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ■ E-mail : royalenvironment@live.com ■ admin@royalenvironment.com

Ref. No /29/12/2015-16

Date. 03/01/2016

Performance Evaluation of Air Pollution Control Equipments

Blast Furnace Plant-2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED.
Village: Samaghogha.
Tal. : Mundra, Dist. Kutch

Test Method As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 4	S - 5
01	Date of Sampling	---	25/12/2015	25/12/2015	25/12/2015
02	Attached to	---	Dedusting System	Coke fine building dust collecting system	Iron Ore fine & Dust Collecting System
03	Stack Height	Meter	40	30	30
04	Stack Duct Diameter	Meter	1.5	0.85	0.65
05	Stack Temperature	°C	67	69	43
06	Ambient Temperature	°C	28	29	30
07	Average Velocity of Flue Gases	m/sec.	35.5	16.7	15.3
08	IsoKinetic Flowrate for Sampling	LPM	15	27	27
09	Inlet	mg/Nm^3	4235	2105	1845
10	Outlet	mg/Nm^3	40	6	5
11	Efficiency	%	99.06	99.71	99.73

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 103
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, Bis. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 • E-mail : royalenvironment@live.com • admin@royalconsultancy.com

Ref. No 732/12/2015-16

Date 03/01/2016

STACK EMISSION MONITORING RESULTS

BLAST FURNACE - 2 (GPCB ID:29026)

Name of company JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. Mundra Dist. Kutch

Test Method : As per IS Standards - 11255 ,Part - 1/2007

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5
01	Date of Sampling	---	25/12/2015	25/12/2015	Monitoring Not Possible	25/12/2015	25/12/2015
02	Time of sampling	Hr.	10.00	11.15		13.15	15.15
03	Stack Attached to	---	Dedusting System	Stove Stack	Flare Stack	Coke fine building dust collecting system	Iron Ore fine & Dust Collecting System
04	Air Pollution Control Measures	---	Bag Filter	---	---	Bag Filter	Bag Filter
05	Stack Height	Meter	40.0	65.0	45	30.0	30.0
06	Stack Diameter	Meter	1.5	2.250	--	-	0.85
07	Stack Temperature	°C	47	225	---	57	36
08	Ambient Temperature	°C	28	29	--	30	30
09	Average Velocity of Flue Gases	m/sec	28.7	2.6	---	12.6	10.5
10	Isokinetic flow rate for P.M. Sampling	LPM	13	7	---	22	16
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	---
12	**Permissible limits for PM**	**mg/Nm3**	**150**	**150**	**150**	**150**	**150**
13	Measured Concentration of PM.	mg/Nm3	40	3	---	6	5
14	**Permissible limits for SO2**	**mg/Nm3**	**NA**	**NA**	**NA**	**NA**	**NA**
15	Measured Concentration of SO2	mg/Nm3	---	---	---	---	--
16	**Permissible limits for NOx**	**mg/Nm3**	**NA**	**NA**	**NA**	**NA**	**NA**
17	Measured Concentration of Nox	mg/Nm3	---	---	---	---	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively
NA=Not Applicable
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Ref. No. : 43 12 2015 16

Date: 23.12.2015

Form No. 37
(Prescribed under Rule 12-B)

Statement containing particulars of monitoring of working environment required under Section 7-A (a)(e)

1. Name of the Department/Plant : **BF Plant-2 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID: 29026)**
2. Raw materials, by products and finished products involved in the process **TOTAL DUST & CO.**
3. Particulars of sampling

Date of Sampling : 20th December, 2015

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Refrance Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
	BF Plant Cast House	CO	Personal Respirable Dust sampler IAS 001	02	14-15	14.5	55	Gravimetric	5		Received	Mr. MANOJ SODANI
		Total Dust			4-5	4.5	10					

Instrument used : Envirotech make personal sampler Model No. IAS 001

Date of Analysis : 21.12.2015

For Royal Environment Auditing & Consultancy Services

Authorized Sign

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s Bal Ada.at, Gondal Road, RAJKOT - 360 002
Ph. +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 749/12/2015-16

Date: 03/01/2016

WORK ZONE NOISE LEVEL MEASUREMENT
BLAST FURNACE - 2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 06th December, 2015

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	57.3	62.8	58.7
02.	Nr. Stock House	64.7	69.4	66.3
03.	C/R Blower House	64.7	73.2	67.6

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

100

Royal
Environment Auditing & Consultancy Service
303-304, Shivam-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ■ E-mail : royalenvironment@live.com ■ admin@royalconsultancy.com

Ref. No. [illegible]

Date [illegible]

STACK EMISSION MONITORING RESULTS

Pipe Plant (SDP-2) (GPCB ID:18036)

Name of company: [illegible] SAW LIMITED.
[illegible] Samaghogha
[illegible] Mundra Dist Kutch

[illegible] As per IS Standards : 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 7	S - 8
[illegible]	Date of Sampling	--	19/12/2015	19/12/2015	19/12/2015	19/12/2015	19/12/2015	Not in operation during visit	Not in operation during visit	[illegible]
[illegible]	Time of sampling	Hr	10.00	14.30	15.30	16.30	11.30			[illegible]
03	Stack Attached to		Magnesium Treatment	Socket Cleaning	Annealing Furnace - I	Annealing Furnace - II	Zinc Coating	Tri- Grinding Section	Pre & Post Heating	Zinc Coating Machine
[illegible]	Air Pollution Control Measures	--	Bag Filter	Bag Filter		--	Bag Filter	Bag Filter		
[illegible]	Stack Height	Meter	30	30	[illegible]	45	30	30	30	[illegible]
[illegible]	Stack Diameter	Meter	1.00	0.60	[illegible]	0.90	1.00	1.00	[illegible]	[illegible]
[illegible]	Stack Temperature	°C	44	35	[illegible]	[illegible]	42		[illegible]	[illegible]
[illegible]	Ambient Temperature	°C	28	[illegible]	[illegible]	28	29			[illegible]
[illegible]	Average Velocity of Flue Gases	m/sec	[illegible]	[illegible]	[illegible]	4.4	4.3		[illegible]	[illegible]
[illegible]	Average flow rate for P.M. Sampling	LPM	14	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Gaseous Sampling Flow Rate	LPM	[illegible]		[illegible]	2.0	[illegible]	[illegible]		
12	Permissible limits for PM	mg/Nm3	50	50	50	50	50	50	50	50
[illegible]	Measured Concentration of PM	mg/Nm3	34	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]
14	Permissible limits for SO2	PPM	NA	NA	100	100	NA	NA	NA	NA
[illegible]	Measured Concentration of SO2	PPM		[illegible]	[illegible]	2.2		[illegible]		
16	Permissible limits for Nox	PPM	NA	NA	50	50	NA	NA	NA	NA
[illegible]	Measured Concentration of Nox	PPM			[illegible]	4.5				

Note: Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively
Instrument used: Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on [illegible]

ND : Not Detectable
NA : Not Applicable

For Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ■ E-mail : royalenvironment@live.com ■ [illegible]

[illegible] Date: [illegible]

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company: JINDAL SAW LIMITED,
Village: Samaghogha,
Ta - Mundra Dist. Kutch

[illegible] as per IS Standards 11255 [illegible]

Sr. No	Particulars	Unit	S - 7	S - 10	S - 13	S - 14	S - 16	S - 19	S - 21	S - 24
[illegible]	Date of Sampling		[illegible]/12/2015	Not in operation during visit	24/12/2015	24/12/2015	Not in operation during visit	24/12/2015	Not in operation during visit	Not in operation during visit
[illegible]	Time of sampling	Hr	10.00		9.30	10.10		11.15		
03	Stack Attached to	-	Sand Reclamation	Barrel Grinding - I	Annealing Furnace - I	Annealing Furnace - II	Barrel Grinding - II	Annealing Furnace - III	Barrel Grinding-III	Barrel Grinding -IV&V
[illegible]	[illegible] Control Measures		Bag Filter	Bag Filter		[illegible]	Bag Filter		Bag Filter	Bag Filter
[illegible]	[illegible]	Meter	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	Meter	[illegible]	[illegible]	[illegible]	1.375	[illegible]	1.375	[illegible]	[illegible]
[illegible]	[illegible]	°C	[illegible]		[illegible]	[illegible]		[illegible]		
[illegible]	[illegible] Temperature	°C	[illegible]		[illegible]	[illegible]		[illegible]		
[illegible]	[illegible] of Flue Gases	m/sec	[illegible]		[illegible]	[illegible]		[illegible]		
[illegible]	[illegible] for P.M. Sampling	LPM	[illegible]		[illegible]	[illegible]		[illegible]		
[illegible]	[illegible] Sampling Flow Rate	LPM	[illegible]		[illegible]	[illegible]		[illegible]		
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150	150
[illegible]	Measured Concentration of PM	mg/Nm3	[illegible]		[illegible]	[illegible]		[illegible]		
14	Permissible limits for SO2	mg/Nm3	40	40	100 (PPM)	100 (PPM)	40	100 (ppm)	40	40
[illegible]	[illegible] Concentration of SO2	mg/Nm3	[illegible]		[illegible]	[illegible]		[illegible]		
16	Permissible limits for Nox	mg/Nm3	25	25	50 (PPM)	50 (PPM)	25	50 (PPM)	25	25
[illegible]	Measured Concentration of Nox	mg/Nm3	[illegible]		[illegible] (PPM)	[illegible] (PPM)		[illegible] (PPM)		

[illegible] of SO2 & Nox is 0.1 and 0.01 ppm respectively
[illegible] Stack Monitoring Kit - Ecotech make - ESS 100
[illegible]

[illegible] Technical

For Royal Environment Auditing & Consultancy Service

[illegible]

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. 137/12/2015-16

Date 03.01.2016

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED.
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 12	S - 18
01	Date of Sampling		09/12/2015	09/12/2015	09/12/2015	09/12/2015	09/12/2015	09/12/2015	14/12/2015	Not in Operation During The Visit
02	Time of sampling	Hr	9.00	9.50	10.45	11.35	15.10	16.15	11.05	
03	Stack Attached to		Core Shop-I	Core Shop-II	Core Shop-III	Core Shop-IV	Core Shop-V	Core Shop-VI	Core Cleaning & Dusting-I	Core Cleaning & Dusting-II
04	Air Pollution Control Measures		---	-	-	-	-	---	Bag Filter	Bag Filter
05	Stack Height	Meter	30	30	30	30	30	30	30	30
06	Stack Diameter	Meter	0.584	0.584	0.584	0.584	0.584	0.584	3.0	0.6
07	Stack Temperature	C	38	36	37	40	39	38	45	
08	Ambient Temperature	C	27	27	27	28	28	28	28	
09	Average Velocity of Flue Gases	m/SEC	4.3	4.2	4.5	5.2	5.4	5.3	15.7	
10	Isokinetic flow rate for PM Sampling	LPM	18	17	19	21	22	22	24	
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
12	**Permissible limits for PM**	**mg/Nm3**	**150**	**150**	**150**	**150**	**150**	**150**	**150**	**150**
13	Measured Concentration of PM	mg/Nm3	15	21	39	34	42	20	37	
14	**Permissible limits for SO2**	**mg/Nm3**	**40**	**40**	**40**	**40**	**40**	**40**	**40**	**40**
15	Measured Concentration of SO2	mg/Nm3	2.1	2.7	1.9	2.4	2.9	1.6	ND	
16	**Permissible limits for Nox**	**mg/Nm3**	**25**	**25**	**25**	**25**	**25**	**25**	**25**	**25**
17	Measured Concentration of Nox	mg/Nm3	1.3	2.2	1.8	1.5	2.8	2.1	4.2	

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively ND: Not Detectable

Instrument Used : Stack Monitoring Kit Ecotech make - E SS 100

Calibration done on 25/09/2016

Royal Environment Auditing & Consultancy Service

[Name]
Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ■ E-mail : royalenvironment@live.com ■ audit@royalconsultancy.com

Ref. No. 738 (12)2015-16

Date: 01.01.2016

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. Mundra, Dist. Kutch

Test Method As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 8	S - 9	S - 15	S - 20	S - 22	S - 23
01	Date of Sampling	---	15/12/2015	10/12/2015	10/12/2015	Not In Operation During The Visit	15/12/2015	10/12/2015
02	Time of sampling	Hr.	10.15	9.45	11.00		11.30	10.30
03	Stack Attached to	---	Common stack Mg Convertor-I&II	Zn Coating - I	Zn Coating - II	Zn Coating - III	Mg Converter - III	Zn Coating - IV & V
04	Air Pollution Control Measures	--	Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Separator & Bag Filter	Bag Filter	Cyclone Separator & Bag Filter
05	Stack Height	Meter	30	30	30	30	30	30
06	Stack Diameter	Meter	0.5	0.6	0.6	0.6	0.5	0.9
07	Stack Temperature	°C	45	47	45	---	57	40
08	Ambient Temperature	°C	27	26	27	--	28	28
09	Average Velocity of Flue Gases	m/sec	29.7	14.8	15.3	--	17.8	5.2
10	Set point flow rate for P.M. Sampling	LPM	12	26	27	--	22	27
11	Gaseous Sampling Flow Rate	LPM	2.0	---	---	--	2.0	--
12	Permissible limits for PM	mg/Nm3	150	20 (Zn)	20 (Zn)	20 (Zn)	150	20 (Zn)
13	Measured Concentration of PM	mg/Nm3	37	13 (Zn)	17 (Zn)	---	26	09 (Zn)
14	Permissible limits for SO2	mg/Nm3	40	NA	NA	NA	40	NA
15	Measured Concentration of SO2	mg/Nm3	ND	---	---	--	ND	-
16	Permissible limits for Nox	mg/Nm3	25	NA	NA	NA	25	NA
17	Measured Concentration of Nox	mg/Nm3	3.2	---	---	---	2.8	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibrated due on 25.09.2016

N.A=Not Applicable

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Acalat, Gondal Road, RAJKOT - 360 002
Ph. -91 281 2360695 ■ E-mail : royalenvironment@live.com ■ admin@royalconsultancy.com

Ref No. 735/12/2015-16

Date: 03/01/2016

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of comoany : JINDAL SAW LIMITED.
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 11	S - 17	S - 25	S - 26	S - 27
01	Date of Sampling	---	Not In Operation During The Visit	23/12/2015	23/12/2015	23/12/2015	Not In Operation During The Visit
02	Time of sampling	Hr		15.00	16.00	17.00	
03	Stack Attached to	---	Bitumin Drying Oven - I	Common stack Bitumin Drying Oven - II & Boiler	Shot Blasing - I	Shot Blasing - II	Shot Blasing - III
04	Air Pollution Control Measures	---	---	---	Bag Filter	Bag Filter	Bag Filter
05	Stack Height	Meter	32.6	32.8	10.0	10.0	10.0
06	Stack Diameter	Meter	1.375	1.375	0.41	0.41	1.125
07	Stack Temperature	C	---	151	42	40	---
08	Ambient Temperature	C	---	29	30	31	
09	Average Velocity of Flue Gases	m/sec	---	5.2	13.1	12.2	---
10	Isokinetic flow rate for P.M. Sampling	LPM	---	15	23	22	
11	Gaseous Sampling Flow Rate	LPM	---	2.0	2.0	2.0	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	---	73	18	15	---
14	Permissible limits for SO2	mg/Nm3	100 ppm	100 ppm	40	40	40
15	Measured Concentration of SO2	mg/Nm3	---	23.9	ND	ND	---
16	Permissible limits for Nox	mg/Nm3	50 ppm	50 ppm	25	25	25
17	Measured Concentration of Nox	mg/Nm3	---	21.5	ND	ND	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively ND= Not Detectable
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Acalat, Gondal Road RAJKOT - 360 002
Ph.: -91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref No /28/12/2015-16

Date 03/01/2016

Performance Evaluation of Air Pollution Control Equipments

Pipe Plant (SDP-2) (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 5	S - 6	S-8
01	Date of Sampling	---	19/12/2015	19/12/2015	Not in operation during visit	19/12/2015
02	Attached to	---	Mg Treatment	Zinc Coating	Tri-Grinding	Zinc Coating machine
03	Stack Height	Meter	30	30	30	30
04	Stack Duct Diameter	Meter	1.00	1.00	1.00	0.8
05	Stack Temperature	°C	45	50	.	52
06	Ambient Temperature	°C	25	29	.	30
07	Average Velocity of Flue Gases	m/sec.	13.5	14.7	.	13.5
08	IsoKinetic Flowrate for Sampling	LPM	25	25	.	23
09	Inlet	mg/Nm^3	2854	3108	.	1515
10	Outlet	mg/Nm^3	34	20	.	10
11	Efficiency	%	98.81	99.36	.	99.34

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibrat on due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

186

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: -91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. 727-12/2015-16

Date: 03-01-2016

Performance Evaluation of Air Pollution Control Equipments
Pipe Plant (GPCB ID:18036)

Name of company: JINDAL SAW LIMITED.
Village: Samaghogha,
Tal. Mundra, Dist. Kutch

Test Method: As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 9	S - 10	S - 15	S - 16	S - 20	S - 21	S - 23
01	Date of Sampling	---	10/12/2015	Not in operation during visit	10/12/2015	Not in operation during visit	Not in operation during visit	Not in operation during visit	17/12/2015
02	Attached to	---	Zinc Coating - I	Barrel Grinding-I	Zinc Coating - II	Barrel Grinding-II	Zinc Coating - III	Barrel Grinding-III	Zinc Coating - IV & V
03	Stack Height	Meter	30	30	30	30	30	30	30
04	Stack Duct Diameter	Meter	0.6	0.6	0.6	0.6	0.6	0.5	0.9
05	Stack Temperature	°C	53		55				49
06	Ambient Temperature	°C	26		27				28
07	Average Velocity of Flue Gases	m/sec.	16.5		17.1				16.[illegible]
08	IsoKinetic Flowrate for Sampling	LPM	28		29				26
09	Inlet	mg/Nm³	1586		2235				1422
10	Outlet	mg/Nm³	13		17				[illegible]
11	Efficiency	%	99.18		99.24				99.3

Instrument Used: Stack Monitoring Kit, Polltech make, PSS 100
Calibration due on [illegible] 2016

Royal Environment Auditing & Consultancy Service

Manoj
Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ■ E-mail : royalenvironment@live.com ■ admin@royalconsultancy.com

Ref. No. 726/12/2015-16

Date: 03/01/2016

Performance Evaluation of Air Pollution Control Equipments
Pipe Plant (GPCB ID:18036)

Name of company JINDAL SAW LIMITED,
Village: Samaghogha
Tal. Mundra, Dist. Kutch

Test Method As per IS Standards 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 7	S - 8	S - 12	S - 18	S - 22
01	Date of Sampling	---	11/12/2015	15/12/2015	14/12/2015	Not in operation during visit	15/12/2015
02	Attached to		Sand Reclamation	Common stack Mg Convertor - I & II	Core Cleaning & Dusting - I	Core Cleaning & Dusting - II	Mg Convertor - III
03	Stack Height	Meter	32	30	30	30	30
04	Stack Diameter	Meter	0.9	0.5	0.6	0.6	0.5
05	Stack Temperature	°C	113	61	56		54
06	Ambient Temperature	°C	29	27	28		29
07	Average Velocity of Flue Gases	m/sec	35.3	15.8	15.2		16.2
08	Isokinetic Flowrate for Sampling	LPM	13	26	26		25
09	Inlet	mg/Nm³	3523	4136	3793		440[illegible]
10	Outlet	mg/Nm³	26	37	37		26
11	Efficiency	%	99.26	99.11	99.02		99.41

Instrument Used: Stack Monitoring Kit, Ecotech make ESS 100
Calibration Due on 25.09.2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, Brs. Bal Acalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 747/12/2015-16

Date: 03/01/2016

WORK ZONE NOISE LEVEL MEASUREMENT
PIPE PLANT (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 06th December, 2015

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room of Annealing Furnace of DISP / SDP	48.8	53.5	51.4
02	Inside Control Room – Mill Area of Spiral Plant	60.3	64.2	61.5
03	Nr. Pipe Cutting Area of Spiral Plant	67.5	77.3	71.3
04	Inside JCO Plant	64.1	75.8	67.2
05	Inside DISP / SDP Plant	68.9	79.6	73.4
06	Inside Coating Plant	65.4	74.2	70.2
07	Nr. CCM SDP-2	64.2	72.5	66.1
08	Inside Control Room of Annealing Furnace of SDP-2	50.5	54.1	51.7
09	Nr. Zinc Coating SDP-2	66.7	77.8	72.1
10	Near Mould Shop	76.3	87.6	78.6

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

[illegible] No. [illegible] 44 12/2015-16

Date: 03.01.2016

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A [illegible]

Name of the Department/Plant : **DISP,JCO & Coating Units at JINDAL SAW LIMITED. Samaghogha.(GPCB ID: 18036)**

Raw materials, by products and finished products involved in the process: **TOTAL DUST**

Particulars of sampling

Date of Sampling: 21st & 22nd December, 2015

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
[illegible]	Spiral Plant (Nr. [illegible])	Total Dust	Personal Respirable Dust sampler IAS 001	02	[illegible]-3	2.[illegible]	10	Gravimetric	3	---		
[illegible]	JCO Plant (Nr. JCO Press)	Total Dust		02	1-5	3.0	10	Gravimetric	4	---		
[illegible]	Coating Plant 1 Shot Blasting Area	Total Dust		02	3-5	4.[illegible]	10	Gravimetric	4			[illegible]
4	CCM Area (S.[illegible] ...S1)	Total Dust		02	4-5	4.[illegible]	10	Gravimetric	5			
[illegible]	Coating Plant 2 Shot Blasting Area	Total Dust		02	3-4	3.5	10	Gravimetric	3	---		
[illegible]	CCM Area (S.[illegible] 2)	Total Dust		02	5-6	5.5	10	Gravimetric	4	---		

[illegible] Personal portable sampler Model No. IAS 001

[illegible]

For Royal Environment Auditing & Consultancy Services

Authorized Sign.

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph. : +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No : 715/12/2015-16

Date 03/01/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02	Date of sampling	----	14/12/2015	14/12/2015	14/12/2015
03	Time of sampling	----	8.10	8.25	8.40
04	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05	Dominant Wind Direction (From)	----	NNE	NNE	NNE
06	Average Wind Speed	Km/Hr.	5.5	5.5	5.5
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	µg/m3	100	100	100
10	Measured Concentration of PM 10	µg/m3	39	47	29
11.	**Permissible limits for PM 2.5***	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	13	21	16
13.	**Permissible limits for SO_2***	µg/m3	80	80	80
14	Measured Concentration of SO_2	µg/m3	2.1	2.9	1.7
15.	**Permissible limits for NO_2***	µg/m3	80	80	80
16.	Measured Concentration of NO_2	µg/m3	14.8	12.3	9.4
17.	**Permissible limit for CO ****	µg/m3	2000	2000	2000
18	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used (1) 3 Nos. RDS (APM - 217 BL) (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on 25/05/2016

BDL = Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 711/12/2015-16

Date: 03/01/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha.
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	**Location of Ambient**	----	**Main Gate (S)**	**Sinter Plant - 1 (NNW)**	**Nr. Workshop Spiral - II (W)**
02.	Date of sampling	----	01/12/2015	01/12/2015	01/12/2015
03.	Time of sampling	----	8.00	8.20	8.45
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	N	N	N
06.	Average Wind Speed	Km/Hr.	2.7	2.7	2.7
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**100**	**100**	100
10.	Measured Concentration of PM 10	µg/m3	31	49	36
11.	**Permissible limits for PM 2.5***	**µg/m3**	**60**	**60**	**60**
12	Measured Concentration of PM 2.5	µg/m3	13	22	18
13.	**Permissible limits for SO_2***	**µg/m3**	**80**	**80**	**80**
14.	Measured Concentration of SO_2	µg/m3	3.2	3.8	2.5
15.	**Permissible limits for NO_2***	**µg/m3**	**80**	**80**	**80**
16	Measured Concentration of NO_2	µg/m3	13.6	11.5	9.3
17.	**Permissible limit for CO ****	**µg/m3**	**2000**	**2000**	**2000**
18	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009

Pradeja.

192

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bar Acalat, Gondal Road, RAJKOT - 360 002
Ph.: -91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 712/12/2015-16

Date: 03/01/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	**Location of Ambient**	----	**Main Gate (S)**	**Sinter Plant - 1 (NNW)**	**Nr. Workshop Spiral - II (W)**
02	Date of sampling	----	04/12/2015	04/12/2015	04/12/2015
03.	Time of sampling	----	8.10	8.30	8.55
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	SE	SE	SE
06.	Average Wind Speed	Km/Hr.	0.7	0.7	0.7
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	µg/m3	**100**	**100**	**100**
10.	Measured Concentration of PM 10	µg/m3	36	52	39
11.	**Permissible limits for PM 2.5***	µg/m3	**60**	**60**	**60**
12	Measured Concentration of PM 2.5	µg/m3	15	26	20
13.	**Permissible limits for SO_2***	µg/m3	**80**	**80**	**80**
14.	Measured Concentration of SO_2	µg/m3	2.8	4.1	2.1
15.	**Permissible limits for NO_2***	µg/m3	**80**	**80**	**80**
16	Measured Concentration of NO_2	µg/m3	12.5	10.2	9.1
17.	**Permissible limit for CO ****	µg/m3	**2000**	**2000**	**2000**
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used : (1) 3 Nos. RDS (APM - 217 BL). (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

Air Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 18th November 2009.

193

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Aadat, Gondal Road, RAJKOT - 360 002.
Ph : -91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No : 713/12/2015-16

Date 03/01/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company JINDAL SAW LIMITED
Village: Samaghogha.
Tal. : Mundra, Dist. Kutch

Test Method As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02.	Date of sampling	----	07/12/2015	07/12/2015	07/12/2015
03	Time of sampling	----	8.15	8.35	9.00
04	Duration of Sampling	Min	1440.00	1440.00	1440.00
05	Dominant Wind Direction (From)	-----	ESE	ESE	ESE
06.	Average Wind Speed	Km/Hr	1.1	1.1	1.1
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	µg/m3	100	100	100
10	Measured Concentration of PM 10	µg/m3	40	54	37
11.	**Permissible limits for PM 2.5***	µg/m3	60	60	60
12	Measured Concentration of PM 2.5	µg/m3	16	19	13
13.	**Permissible limits for SO_2***	µg/m3	80	80	80
14.	Measured Concentration of SO_2	µg/m3	1.9	2.8	1.5
15.	**Permissible limits for NO_2***	µg/m3	80	80	80
16	Measured Concentration of NO_2	µg/m3	15.3	13.5	12.4
17.	**Permissible limit for CO ** **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used (1) 3 Nos. RDS (APM - 217 Bit (2) 3 Nos. of Gaseous Sampler (AAS 109 (3) 3 Nos. PM 2.5 Sampler (AAS 127.

BDL = Below Detectable Limit

Air Calibration due on 25/05/2016

*Permissible Limits are as per NAAQ Standard 16th November 2009

Royal Environment Auditing & Consultancy Service

Analyst

194

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ■ E-mail : royalenvironment@live.com ■ admin@royalcons.tandy.com

Ref No : 714/12/2015-16

Date: 03/01/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	Location of Ambient	----	Main Gate (S)	Sinter Plant - 1 (NNW)	Nr. Workshop Spiral - II (W)
02	Date of sampling	----	11/12/2015	11/12/2015	11/12/2015
03.	Time of sampling	----	8.25	8.45	9.10
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	-----	N	N	N
06	Average Wind Speed	Km/Hr	1.0	1.0	1.0
07.	Average flow rate during sampling	m3/Hr	1.0	1.0	1.0
08	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	µg/m3	100	100	100
10.	Measured Concentration of PM 10	µg/m3	34	49	30
11.	**Permissible limits for PM 2.5***	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	16	24	19
13.	**Permissible limits for SO_2***	µg/m3	80	80	80
14	Measured Concentration of SO_2	µg/m3	2.2	3.1	1.7
15.	**Permissible limits for NO_2***	µg/m3	80	80	80
16	Measured Concentration of NO_2	µg/m3	14.2	12.5	10.3
17.	**Permissible limit for CO ** **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used : (1) 3 Nos. RDS (APM - 217 BL) (2) 3 Nos. of Gaseous Sampler AAS 129 (3) 3 Nos. PM 2.5 Sampler AAS 127)

All Calibration due on 25/09/2015

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009

Royal Environment Auditing & Consultancy Service

Analyst

195

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Acafal, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 716/12/2015-16

Date: 03/01/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	**Location of Ambient**	----	**Main Gate (S)**	**Sinter Plant - 1 (NNW)**	**Nr. Workshop Spiral - II (W)**
02	Date of sampling	----	18/12/2015	18/12/2015	18/12/2015
03.	Time of sampling	----	8.20	8.35	8.50
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	-----	NE	NE	NE
06	Average Wind Speed	Km/Hr.	5.0	5.0	5.0
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**100**	**100**	**100**
10.	Measured Concentration of PM 10	µg/m3	42	53	36
11.	**Permissible limits for PM 2.5***	**µg/m3**	**60**	**60**	**60**
12	Measured Concentration of PM 2.5	µg/m3	16	20	18
13.	**Permissible limits for SO_2***	**µg/m3**	**80**	**80**	**80**
14	Measured Concentration of SO_2	µg/m3	2.5	3.2	1.5
15.	**Permissible limits for NO_2***	**µg/m3**	**80**	**80**	**80**
16	Measured Concentration of NO_2	µg/m3	13.3	11.6	9.1
17.	**Permissible limit for CO ** **	**µg/m3**	**2000**	**2000**	**2000**
18	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used (1) 3 Nos. RDS (APM - 217 BL). (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009.

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 717/12/2015-16

Date: 03/01/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	**Location of Ambient**	----	**Main Gate (S)**	**Sinter Plant - 1 (NNW)**	**Nr. Workshop Spiral - II (W)**
02.	Date of sampling	----	21/12/2015	21/12/2015	21/12/2015
03.	Time of sampling	-----	8.30	8.45	9.05
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	-----	N	N	N
06	Average Wind Speed	Km/Hr.	1.9	1.9	1.9
07	Average flow rate during sampling	m3/Hr	1.0	1.0	1.0
08	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**100**	**100**	**100**
10.	Measured Concentration of PM 10	µg/m3	44	48	38
11.	**Permissible limits for PM 2.5***	**µg/m3**	**60**	**60**	**60**
12.	Measured Concentration of PM 2.5	µg/m3	15	22	13
13.	**Permissible limits for SO_2***	**µg/m3**	**80**	**80**	**80**
14.	Measured Concentration of SO_2	µg/m3	3.3	4.5	2.1
15.	**Permissible limits for NO_2***	**µg/m3**	**80**	**80**	**80**
16.	Measured Concentration of NO_2	µg/m3	17.5	15.2	14.1
17.	**Permissible limit for CO ****	**µg/m3**	**2000**	**2000**	**2000**
18	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, Brs. Bal Academy, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 • E-mail : royalenvironment@live.com • admin@royalconsultancy.com

Ref. No. : 718/12/2015-16

Date: 03/01/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	**Location of Ambient**	----	**Main Gate (S)**	**Sinter Plant - 1 (NNW)**	**Nr. Workshop Spiral - II (W)**
02	Date of sampling	----	25/12/2015	25/12/2015	25/12/2015
03.	Time of sampling	-----	8.40	8.55	9.15
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	-----	E	E	E
06.	Average Wind Speed	Km/Hr.	4.9	4.9	4.9
07	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**100**	**100**	**100**
10	Measured Concentration of PM 10	µg/m3	41	46	35
11.	**Permissible limits for PM 2.5***	**µg/m3**	**60**	**60**	**60**
12	Measured Concentration of PM 2.5	µg/m3	19	23	16
13.	**Permissible limits for SO_2***	**µg/m3**	**80**	**80**	**80**
14	Measured Concentration of SO_2	µg/m3	2.9	4.2	2.6
15.	**Permissible limits for NO_2***	**µg/m3**	**80**	**80**	**80**
16.	Measured Concentration of NO_2	µg/m3	16.3	15.4	12.5
17.	**Permissible limit for CO ** **	**µg/m3**	**2000**	**2000**	**2000**
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009.

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360595 ■ E-mail : royalenvironment@live.com ■ admin@royalconsultancy.com

Ref. No. : 718(A)/12/2015-16

Date 03/01/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha.
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	**Location of Ambient**	----	**Main Gate (S)**	**Sinter Plant - 1 (NNW)**	**Nr. Workshop Spiral - II (W)**
02.	Date of sampling	----	29/12/2015	29/12/2015	29/12/2015
03.	Time of sampling	-----	8.20	8.35	9.00
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	NNE	NNE	NNE
06.	Average Wind Speed	Km/Hr.	1.5	1.5	1.5
07	Average flow rate during sampling	m3/Hr	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**100**	**100**	**100**
10	Measured Concentration of PM 10	µg/m3	30	43	24
11.	**Permissible limits for PM 2.5***	**µg/m3**	**60**	**60**	**60**
12.	Measured Concentration of PM 2.5	µg/m3	17	22	14
13.	**Permissible limits for SO_2***	**µg/m3**	**80**	**80**	**80**
14	Measured Concentration of SO_2	µg/m3	4.3	3.7	2.3
15.	**Permissible limits for NO_2***	**µg/m3**	**80**	**80**	**80**
16	Measured Concentration of NO_2	µg/m3	15.4	13.6	14.2
17.	**Permissible limit for CO ****	**µg/m3**	**2000**	**2000**	**2000**
18.	Measured Concentration of CO	µg/m3	B.D.L	B.D.L	B.D.L

Instrument used : (1) 3 Nos. RDS (APM - 217 BL) (2) 3 Nos. of Gaseous Sampler (AAS 139) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on 25/05/2016 B.D.L.= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT 360 002
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royaconsultancy.com

Ref. No : 719/12/2015-16

Date: 03/01/2016

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr.No.	Particulars	Unit	AAQM - 1 (S)	AAQM - 2 (SSW)	AAQM - 3 (WSW)	AAQM - 4 (NW)
01.	**Location of Ambient**	----	**Old Colony (Nr. Environment Laboratory)**	**Nr. Rain Water Harvesting**	**LPG Yard (Nr. Water Reservoir)**	**Between Sinter - 2 & Spiral - 2**
02.	Date of sampling	----	13/12/2015	13/12/2015	14/12/2015	14/12/2015
03	Time of sampling	-----	8.05	8.20	8.10	8.35
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	-----	NNE	NNE	NNE	NNE
06.	Average Wind Speed	Km/Hr.	3.6	3.6	5.5	5.5
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**100**	**100**	**100**	**100**
10.	Measured Concentration of PM 10	µg/m3	33	43	39	36
11.	**Permissible limits for PM 2.5***	**µg/m3**	**60**	**60**	**60**	**60**
12	Measured Concentration of PM 2.5	µg/m3	15	19	21	13
13.	**Permissible limits for SO_2***	**µg/m3**	**80**	**80**	**80**	**80**
14.	Measured Concentration of SO_2	µg/m3	1.8	2.6	3.5	2.8
15.	**Permissible limits for NO_2***	**µg/m3**	**80**	**80**	**80**	**80**
16.	Measured Concentration of NO_2	µg/m3	6.9	11.5	10.6	9.5
17.	**Permissible limit for CO ****	**µg/m3**	**2000**	**2000**	**2000**	**2000**
18	Measured Concentration of CO	µg/m3	BDL	BDL	BDL	BDL

Instrument used : (1) Ecotech make 3 Nos. RDS (APM - 217 B_). (2) 3 Nos. Gaseous Sampling Kit (APM 109). & 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 720/12/2015-16

Date: 03/01/2016

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23

Sr. No.	Particulars	Unit	AAQM - 5 (NE)	AAQM - 6 (SE)	AAQM - 7 (ESE)	AAQM - 8 (E)
01.	**Location of Ambient**	----	**Labour Colony**	**New Colony (Shopping Centre)**	**VIP Guest House**	**Weigh bridge**
02.	Date of sampling	----	15/12/2015	15/12/2015	16/12/2015	16/12/2015
03.	Time of sampling	-----	8.15	8.40	8.25	8.45
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	-----	NNE	NNE	NNE	NNE
06	Average Wind Speed	Km/Hr.	3.6	3.6	0.5	0.5
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**100**	**100**	**100**	**100**
10.	Measured Concentration of PM 10	µg/m3	46	30	40	48
11.	**Permissible limits for PM 2.5***	**µg/m3**	**60**	**60**	**60**	**60**
12.	Measured Concentration of PM 2.5	µg/m3	23	20	18	24
13.	**Permissible limits for SO_2***	**µg/m3**	**80**	**80**	**80**	**80**
14	Measured Concentration of SO_2	µg/m3	4.1	2.2	3.1	4.9
15.	**Permissible limits for NO_2***	**µg/m3**	**80**	**80**	**80**	**80**
16.	Measured Concentration of NO_2	µg/m3	10.7	9.4	12.6	14.7
17.	**Permissible limit for CO ** **	**µg/m3**	**2000**	**2000**	**2000**	**2000**
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL	BDL

Instrument used : (1) Ecotech make 3 Nos. RDS (APM - 217 BL). (2) 3 Nos. Gaseous Sampling Kit (APM 109) & 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009.

Royal Environment Auditing & Consultancy Service

Manoj
Analyst

201

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. :721/12/2015-16

Date: 03/01/2016

FUGITIVE EMISSION MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23/22

Sr. No.	Particulars	Unit	A - 1	A - 2	A - 3
01.	**Location of Ambient**	----	**RMH Junction House**	**RMH Stock House**	**Sinter RMH Yard**
02	Date of sampling	----	08/12/2015	08/12/2015	09/12/2015
03.	Time of sampling	-----	8.15	8.30	8.00
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	-----	E	E	NNE
06	Average Wind Speed	Km/Hr.	1.3	1.3	2.5
07	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**3000**	**3000**	**3000**
10.	Measured Concentration of PM 10	µg/m3	1328	1211	1154
11.	**Permissible limits for SO2***	**µg/m3**	**150**	**150**	**150**
12	Measured Concentration of SO2	µg/m3	12.7	11.9	13.8
13.	**Permissible limits for NO2***	**µg/m3**	**120**	**120**	**120**
14.	Measured Concentration of NO2	µg/m3	25.6	26.3	24.7
15.	**Permissible limit for CO ****	µg/m3	**2000**	**2000**	**2000**
16.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL
17.	**Permissible limit for Pb***	µg/m3	**2**	**2**	**2**
18.	Measured Concentration of Pb	µg/m3	ND	ND	ND

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampler (APM 109)
All Calibration due on : 25/05/2016

BDL= Below Detectable Limit
ND= Not Detectable

Royal Environment Auditing & Consultancy Service

Analyst

202

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Ba- Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref No. :722/12/2015-16

Date: 03/01/2016

FUGITIVE EMISSION MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23/22

Sr. No.	Particulars	Unit	A - 4	A - 5	A - 6
01.	Location of Ambient	----	Sinter 2 Ground Hopper	DISP "CCM" Area	BF CAST HOUSE
02.	Date of sampling	----	09/12/2015	10/12/2015	10/12/2015
03.	Time of sampling	-----	8.20	8.10	8.25
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05	Dominant Wind Direction (From)	-----	NNE	NW	NW
06.	Average Wind Speed	Km/Hr.	3.60	4.3	4.3
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**3000**	**3000**	**3000**
10.	Measured Concentration of PM 10	µg/m3	764	512	992
11.	**Permissible limits for SO2***	**µg/m3**	**150**	**150**	**150**
12.	Measured Concentration of SO2	µg/m3	10.5	14.6	11.2
13.	**Permissible limits for NO2***	**µg/m3**	**120**	**120**	**120**
14.	Measured Concentration of NO2	µg/m3	21.8	29.1	27.2
15.	**Permissible limit for CO ****	**µg/m3**	**2000**	**2000**	**2000**
16.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL
17.	**Permissible limit for Pb***	**µg/m3**	**2**	**2**	**2**
18.	Measured Concentration of Pb	µg/m3	ND	ND	ND

Instrument used : (1) 3 Nos. RDS (APM - 217 BL). (2) 3 Nos. Gaseous Sampler (APM 109)
All Calibration due on : 25/05/2016

BDL= Below Detectable Limit
ND= Not Detectable

Royal Environment Auditing & Consultancy Service

memo)
Analyst

203

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 748/12/2015-16

Date 03/01/2016

AMBIENT NOISE LEVEL MEASUREMENT

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 06th December, 2015

Sr. No.	Location of Sampling	Value in dB(A) Day Time			Value in dB(A) Night Time		
		Min.	Max.	Leq	Min.	Max.	Leq
01.	Admin. Building	42.6	50.3	43.6	37.7	43.5	39.5
02.	Old Colony	36.7	41.4	38.3	33.5	39.2	34.4
03.	Nr. LPG Yard	52.1	60.1	53.7	48.8	54.7	50.2
04.	New Colony (School)	37.5	43.9	39.2	34.3	38.8	35.2
05.	Nr. SDP-2	58.8	64.3	57.7	53.4	59.1	55.3
06.	Nr. Coating Plant	54.3	63.4	58.6	51.1	61.3	54.6
07	Nr. Gate No. 2	54.8	62.7	55.1	49.4	57.2	50.9
08	Nr. Sinter Plant-1	60.5	65.2	61.2	53.7	59.4	55.4
09.	Nr. Sinter Plant-2	57.6	66.3	59.8	54.8	60.7	56.3
10	Nr. Blast Furnace-1	56.5	60.1	57.3	51.7	58.5	53.2
11	Nr. Blast Furnace-2	55.6	61.2	56.5	45.2	51.1	48.7
12	Nr. Main Gate (Security Office)	43.5	52.4	45.7	39.1	44.8	41.2

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 518/01/2015-16

Date : 03/02/2016

Performance Evaluation of Air Pollution Control Equipments

Sinter Plant-1 (GPCB ID 35456)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 6
01	Date of Sampling	---	Not in operation during visit	Not in operation during visit	16/01/2016	16/01/2016
02	Attached to	---	Fuel & Flux crusher & screening building	Fuel & Flux crushing house	Sinter Furnace	Discharge end
03	Stack Height	Meter	32	27	60	32
04	Stack Diameter	Meter	1.4	1.4	2.0	1.3
05	Stack Temperature	°C	---	---	140	117
06	Ambient Temperature	°C	---	---	27	29
07	Average Velocity of Flue Gases	m/sec	---	---	35.8	34.9
08	IsoKinetic Flowrate for Sampling	LPM	---	---	12	13
09	Inlet	mg/Nm^3	---	---	3771	3145
10	Outlet	mg/Nm^3	---	---	32	23
11	Efficiency	%	---	---	99.15	99.27

Royal Environment Auditing & Consultancy Service

Rajkot

Analyst

205

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. :525/01/2015-16

Date : 03/02/2016

STACK EMISSION MONITORING RESULTS

Sinter Plant - 1(GPCB ID:35456)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6
01	Date of Sampling	---	Not Running During Visit	Not in operation during visit	28/01/2016	Not Running During Visit	Not Running During Visit	28/01/2016
02	Time of sampling	---			9.00			10.40
03	Stack Attached to	---	Fuel & Flux Crusher and Screening building	Fuel & Flux Crushing House	Sinter Furnace	Primary Mixture House	Secondary Mixture House	Discharge End
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	ESP	....	....	ESP
05	Stack Height	Meter	32.0	27.00	50	19.75	36.08	32
06	Stack Diameter	Meter	1.40	1.40	2.0	1.25	1.25	1.30
07	Stack Temperature	°C	....	....	148	....	....	122
08	Ambient Temperature	°C	....	....	27	....	....	29
09	Average Velocity of Flue Gases	m/sec.	....	....	10.3	....	....	16.2
10	Isokinetic flow rate for P.M. Sampling	LPM	....	....	14	....	....	26
11	Gaseous Sampling Flow Rate	LPM	....	....	2.0	....	....	....
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	...	...	32	...	...	23
14	Permissible limits for SO2	ppm	NA	NA	100	NA	NA	NA
15	Measured Concentration of SO2	ppm	...	...	ND	....	....	....
16	Permissible limits for NOx	ppm	NA	NA	50	NA	NA	NA
17	Measured Concentration of NOx	ppm	....	....	8.8	....	....	....

NA= Not Applicable

Royal Environment Auditing & Consultancy Service

Analyst

206

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s, Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 540/01/2015-16

Date : 03/02/2016

WORK ZONE NOISE LEVEL MEASUREMENT

SINTER PLANT- 1 (GPCB ID:35456)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 23rd January, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
1	Inside Control Room	42.7	48.5	44.8
2	Inside Mechanical Room	48.9	54.8	50.7
3	Inside Electrical Room	49.8	55.4	51.4
4	Inside Plant Office	51.9	59.7	53.9

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal Environment Auditing & Consultancy Service ★ Rajkot

Ref. No. : 536/01/2015-16

Date : 03/02/2016

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant.: Sinter Plant-1 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID: 35456)

2 Raw materials, by products and finished products involved in the process. TOTAL DUST

3 Particulars of sampling

Date of Sampling : 18th January, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature of person taking samples	Name (In block letters)
				Number of sample	Range	Average	mg/m3					
1	Sinter Plant At First Floor	Total Dust	Personal Respirable Dust sampler IAS 001	02	2-4	3.0	10	Gravimetric	5	—		Mr. MANOJ SONRAT

Instruments used : Envirotech make personal sampler, Model No. IAS 001

Calibration Due on : 02/11/2016

For, Royal Environment Auditing & Consultancy Service

Authorized Sign

Royal Environment Auditing & Consultancy Service Rajkot

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalaj, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 586/02/2015-16

Date : 02/03/2016

STACK EMISSION MONITORING RESULTS

Sinter Plant -2 (GPCB ID:29017)

Name of company : JINDAL SAW LIMITED.

Village: Samaghogha.

Tal : Mundra, Dist :Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 7	S - 8	S - 9	S - 10
01	Date of Sampling	---	Not In Operation During The Visit	Not In Operation During The Visit	24/02/2016	Not In Operation During The Visit	NA	NA	12/02/2016	Not In Operation During The Visit	12/02/2016	Not In Operation During The Visit
02	Time of sampling	Hr.			14.30				9.00		10.15	
03	Stack Attached to	---	Fuel crushing de-duster system (Flux)	Fuel crushing de-duster system(Fuel)	Fuel Screening deduster System (Flux Screening)	No. I Transfer Station De-duster System	Primary Mixer De-duster system	Secondary Mixer De-duster system	Sinter Furnace	Transfer station no. 4 & 5 dedusting system	Discharging End of sinter de-dusting system	Pulverized Coal Injection
04	Air Pollution Control Measures	---	Dust Collector	Dust Collector	Dust Collector	Dust Collector	Dust Collector	Dust Collector	ESP	Dust Collector	ESP	Bag Filter
05	Stack Height	Meter	30	30	30	30	20	30	50	30	50	32
06	Stack Diameter	Meter	0.7	0.7	0.7	0.7	---	---	2	0.7	1.3	1.00
07	Stack Temperature	°C	---	---	38	---	---	---	154	---	107	---
08	Ambient Temperature	°C	---	---	30	---	---	---	28	---	29	---
09	Average Velocity of Flue Gases	m/sec.	---	---	8.7	---	---	---	13.5	---	31.9	---
10	Isokinetic flow rate for P.M. Sampling	LPM	---	---	16	---	---	---	18	---	12	---
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	---	---	2.0	---	---	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	---	---	23	---	---	---	45	---	24	---
14	Permissible limits for SO2	ppm	NA	NA	NA	NA	NA	NA	100	NA	NA	100 (ppm)
15	Measured Concentration of SO2	ppm	---	---	---	---	---	---	ND	---	---	---
16	Permissible limits for NOx	ppm	NA	NA	NA	NA	NA	NA	50	NA	NA	50 (ppm)
17	Measured Concentration of NOx	ppm	---	---	---	---	---	---	9.5	---	---	---

NA= Not Applicable

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.05 ppm respectively.

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100

Calibration due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Royal Environment Auditing & Consultancy Service ★ Rajkot

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 520/01/2015-16

Date : 03/02/2016

Performance Evaluation of Air Pollution Control Equipments

Sinter Plant-2 (GPCB ID:29017)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 7	S - 9	S-10
01	Date of Sampling	—	Not in operation during visit	Not in operation during visit	28/01/2016	18/01/2016	18/01/2016	Not in operation during visit
02	Attached to	---	Fuel crushing de-dustor system (Fuel)	Fuel crushing de-duster system (Flux)	Fuel screening dedustor system (Flux screening)	Sinter Furnace	Discharging end of Sinter de-dusting System	Pulverised Coal Injection
03	Stack Height	Meter	30	30	30	50	50	32
04	Stack Diameter	Meter	0.7	0.7	0.7	2.0	1.3	1.0
05	Stack Temperature	°C	38	50	45	144	97	138
06	Ambient Temperature	°C	29	30	29	28	29	32
07	Average Velocity of Flue Gases	m/sec.	12.0	14.0	14.2	37.4	39.7	11.5
08	IsoKinetic Flowrate for Sampling	LPM	22	24	25	13	15	16
09	Inlet	mg/Nm^3	2535	2430	2784	3993	3301	2384
10	Outlet	mg/Nm^3	14	12	26	40	29	18
11	Efficiency	%	99.45	99.51	99.06	99.00	99.12	99.24

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Environment Auditing & Consultancy Rajkot

Analyst

210

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 545/01/2015-16

Date : 03/02/2016

WORK ZONE NOISE LEVEL MEASUREMENT

SINTER PLANT - 2 (29017)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 23rd January, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	51.5	53.7	52.3
02.	Inside Operator Room	60.4	65.8	61.7
03.	Near Proportioning Bulding	64.1	66.7	65.5
04.	Near Crusher House	68.7	76.6	71.2

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)
Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.
Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal Environment Auditing & Consultancy Service ★ Rajkot

Ref. No. : 535/01/2015-16

Date : 03/02/2016

Form No. 37

(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant.: **Sinter Plant-2 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID:29017)**

2 Raw materials, by products and finished products involved in the process. TOTAL DUST

3 Particulars of sampling

Date of Sampling : 18th January, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remarks	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Sinter Plant At First Floor	Total Dust	Personal Respirable Dust sampler IAS 001	02	2-5	3.5	10	Gravimetric	4	---		Mr. MANOJ SONRAT

Instruments used : Envirotech make personal sampler, Model No. IAS 001

Calibration Due on. : 02/11/2016

For, Royal Environment Auditing & Consultancy Service

Authorized Sign

Royal Environment Auditing & Consultancy Service ★ Rajkot

212

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2960695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 519/01/2015-16

Date : 03/02/2016

Blast Furnace Plant-1(GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. ; Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1
01	Date of Sampling	---	19/01/2016
02	Attached to	---	De-dustingSystem
03	Stack Height	Meter	35
04	Steck Duct Diameter	Meter	1.4
05	Stack Temperature	°C	54
06	Ambient Temperature	°C	27
07	Average Velocity of Flue Gases	m/sec.	16.5
08	IsoKinetic Flowrate for Sampling	LPM	28
09	Inlet	mg/Nm^3	1694
10	Outlet	mg/Nm^3	4
11	Efficiency	%	99.76

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Environment Auditing & C... Rajkot

2019.

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 528/01/2015-16

Date : 03/02/2016

STACK EMISSION MONITORING RESULTS

BLAST FURNACE-1 (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5
01	Date of Sampling	---	19/01/2016	13/01/2016	13/01/2016	19/01/2016	Monitoring Not Possible
02	Time of sampling	Hr.	9.25	9.00	10.15	8.15	
03	Stack Attached to	---	Dedusting System	Boiler - I	Boiler - II	Stove Stack	Flare Stack
04	Air Pollution Control Measures	---	Bag Filter	---	---	---	---
05	Stack Height	Meter	35.0	45	45	50.0	30
06	Stack Diameter	Meter	1.5	1.4	1.4	2.25	---
07	Stack Temperature	°C	46	172	178	221	---
08	Ambient Temperature	°C	27	26	26	25	---
09	Average Velocity of Flue Gases	m/sec.	11.9	5.2	5.4	3.9	---
10	Isokinetic flow rate for P.M. Sampling	LPM	21	15	15	10	---
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	4	7	9	3	---
14	Permissible limits for SO2	mg/Nm3	40	40	40	40	40
15	Measured Concentration of SO2	mg/Nm3	ND	ND	ND	ND	---
16	Permissible limits for NOx	mg/Nm3	25	25	25	25	25
17	Measured Concentration of Nox	mg/Nm3	ND	ND	ND	ND	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively. N.D=Not Detectable
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Environment Auditing & Consultancy Rajkot

Analyst

214

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 529/01/2015-16

Date : 03/02/2016

STACK EMISSION MONITORING RESULTS

Captive Power Plant (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED.

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4
01	Date of Sampling	---	27/01/2016	18/01/2016	18/01/2016	Not in Operation During The Visit
02	Time of sampling	Hr.	11:30	10.30	11.45	
03	Stack Attached to	---	6000 KVA D.G.	3240 KVA D.G.	3240 KVA D.G.	1180 KVA D.G.
04	Air Pollution Control Measures	---	---	---	---	---
05	Stack Height	Meter	57.0	35	35	35
06	Stack Diameter	Meter	1.984	1.464	1.464	0.980
07	Stack Temperature	°C	268	247	242	---
08	Ambient Temperature	°C	29	28	29	---
09	Average Velocity of Flue Gases	m/sec.	22.4	23.5	23.8	---
10	Isokinetic flow rate for P.M. Sampling	LPM	23	25	26	---
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	67	63	58	---
14	Permissible limits for SO2	ppm	100	100	100	100
15	Measured Concentration of SO2	ppm	33.8	28.3	27.5	---
16	Permissible limits for Nox	ppm	50	50	50	50
17	Measured Concentration of Nox	ppm	24.6	21.9	22.8	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100

Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Royal Environment Auditing & Consultancy Service Rajkot

Analyst

215

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.:+91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 541/01/2015-16

Date : 03/02/2016

WORK ZONE NOISE LEVEL MEASUREMENT
BLAST FURNACE- 1 (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 23rd January, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Nr. Stock House	64.9	75.6	67.9
02.	Inside Control Room	46.4	54.9	48.7
03.	Inside Control room of Cast House	47.6	52.3	49.3
04.	Inside Laboratory	43.8	48.9	44.9
05.	Inside Control Room of Blower House	57.1	63.6	60.1
06.	Inside Control Room of CPP	53.8	62.8	55.6

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Royal Environment Auditing & Consultancy Service ☆ Rajkot

Analyst

Ref. No. : 537/01/2015-16

Date : 03/02/2016

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(c).

1 Name of the Department/Plant.: BF Plant-1 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID: 18037)

2 Raw materials, by products and finished products involved in the process. TOTAL DUST & CO.

3 Particulars of sampling

Date of Sampling : 18th January, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA - concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	BF Plant (Cast House)	CO	Personal Respirable Dust sampler IAS 001	02	16-19	17.5	55	Gravimetric	5	----	Manoj	Mr. MANOJ SONRAT
		Total Dust			3-5	4.5	10					

Instruments used.: Envirotech make personal sampler, Model No. IAS 001

Calibration Due on.: 02/11/2016

For, Royal Environment Auditing & Consultancy Service

Authorized Sign

Royal Environment Auditing & Consultancy Service Rajkot

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 546/01/2015-16

Date : 03/02/2016

REPORT OF DOMESTIC WASTE WATER ANALYSIS

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Source of Sample Collection : Sewage Treatment Plant (Inlet & Outlet)

Date of Sampling : 28/01/2016

Test Method : As per IS Standards - 3024

Sr. No.	Parameters	Unit	GPCB limits for Treated Effluent	Raw Sewage	Treated Effluent
01.	pH	pH Unit	---	7.59	7.31
02.	BOD (3 Days at 27°C)	mg/l	<20	173	12
03	Total Dissolve Solid	mg/l	...	1611	1762
04	COD	mg/l	...	241	42
05	Total Suspended Solid	mg/l	<30	274	20
06	Oil & Grease	mg/l	...	ND	ND
07	Residual Chlorine	mg/l	Min. 0.5	---	0.65

ND=Not Detectable

Royal Environment Auditing & Consultancy Service

Analyst

Royal Environment Auditing & Consultancy Service Rajkot

218

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 524/01/2015-16

Date : 03/02/2016

Performance Evaluation of Air Pollution Control Equipments

Blast Furnace Plant-2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 4	S - 5
01	Date of Sampling	---	19/01/2016	25/01/2016	25/01/2016
02	Attached to	---	Dedusting System	Coke fine building dust collecting system	Iron Ore fine & Dust Collecting System
03	Stack Height	Meter	40	30	30
04	Stack Duct Diameter	Meter	1.5	0.85	0.65
05	Stack Temperature	°C	62	66	44
06	Ambient Temperature	°C	28	29	29
07	Average Velocity of Flue Gases	m/sec.	36.7	16.1	14.5
08	IsoKinetic Flowrate for Sampling	LPM	16	26	25
09	Inlet	mg/Nm^3	4115	2012	1543
10	Outlet	mg/Nm^3	27	5	4
11	Efficiency	%	99.34	99.75	99.74

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Royal Environment Auditing & Consultancy Service Rajkot

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2980695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. :527/01/2015-16

Date : 03/02/2016

STACK EMISSION MONITORING RESULTS

BLAST FURNACE - 2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5
01	Date of Sampling	---	19/01/2016	19/01/2016	Monitoring Not Possible	25/01/2016	25/01/2016
02	Time of sampling	Hr.	13.10	15.15		13.15	15.15
03	Stack Attached to	---	Dedusting System	Stove Stack	Flare Stack	Coke fine building dust collecting system	Iron Ore fine & Dust Collecting System
04	Air Pollution Control Measures	---	Bag Filter	----	---	Bag Filter	Bag Filter
05	Stack Height	Meter	40.0	65.0	45	30.0	30.0
06	Stack Diameter	Meter	1.5	2.250	---	---	0.85
07	Stack Temperature	°C	44	213	---	54	37
08	Ambient Temperature	°C	28	29	---	29	29
09	Average Velocity of Flue Gases	m/sec.	29.6	3.5	---	13.6	11.3
10	Isokinetic flow rate for P.M. Sampling	LPM	13	9	---	23	20
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	27	2	---	5	4
14	Permissible limits for SO2	mg/Nm3	NA	NA	NA	NA	NA
15	Measured Concentration of SO2	mg/Nm3	---	---	---	---	---
16	Permissible limits for NOx	mg/Nm3	NA	NA	NA	NA	NA
17	Measured Concentration of Nox	mg/Nm3	---	---	---	---	---

NA=Not Applicable

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Environment Auditing & Consultancy Service Rajkot

Analyst

220

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 544/01/2015-16

Date : 03/02/2016

WORK ZONE NOISE LEVEL MEASUREMENT
BLAST FURNACE - 2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 23rd January, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	58.2	63.7	59.6
02.	Nr. Stock House	65.6	70.3	67.2
03.	C/R Blower House	66.4	75.1	69.5

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB,

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal Environment Auditing & Consultancy Service ☆ Rajkot

221

Ref. No. : 538/01/2015-16

Date : 03/02/2016

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant.: BF Plant-2 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID: 29026)

2 Raw materials, by products and finished products involved in the process, TOTAL DUST & CO.

3 Particulars of sampling

Date of Sampling : 18th January, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling instrumnit used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Refrance Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	BF Plant (Coal House)	CO	Personal Respirable Dust sampler IAS 001	02	15-16	15.5	55	Gravimetric	4	—		Mr. MANOJ SONRAT
		Total Dust			3-5	4.0	10					

Instruments used : Envirotech make personal sampler, Model No. IAS 001

Calibration Due on : 02/11/2016

For, Royal Environment Auditing & Consultancy Service

Authorized Sign

Royal Environment Auditing & Consultancy Service ★ Rajkot

222

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Date : 03/02/2016

Ref. No. : 521/01/2015-16

Performance Evaluation of Air Pollution Control Equipments
Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 7	S - 8	S - 12	S - 18	S - 22
01	Date of Sampling	---	12/01/2016	12/01/2016	25/01/2016	25/01/2016	12/01/2016
02	Attached to		Sand Reclamation	Common stack Mg Convertor - I & II	Core Cleaning & Dusting - I	Core Cleaning & Dusting - II	Mg Converter - III
03	Stack Height	Meter	32	30	30	30	30
04	Stack Diameter	Meter	0.9	0.6	0.6	0.6	0.5
05	Stack Temperature	°C	108	54	51	54	98
06	Ambient Temperature	°C	29	27	26	27	28
07	Average Velocity of Flue Gases	m/sec.	36.4	16.3	16.7	16.5	16.8
08	IsoKinetic Flowrate for Sampling	LPM	14	28	27	28	25
09	Inlet	mg/Nm^3	3649	4216	3839	4143	4310
10	Outlet	mg/Nm^3	34	30	32	41	34
11	Efficiency	%	99.07	99.29	99.17	99.01	99.21

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Rajkot

Analyst

223

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360895 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 522/01/2015-16

Date : 03/02/2016

Performance Evaluation of Air Pollution Control Equipments
Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 9	S - 10	S - 15	S - 16	S - 20	S - 21	S - 23
01	Date of Sampling	---	11/01/2016	Not in operation during visit	11/01/2016	Not in operation during visit	Not in operation during visit	Not in operation during visit	16/01/2016
02	Attached to	---	Zinc Coating - I	Barrel Grinding-I	Zinc Coating - II	Barrel Grinding-II	Zinc Coating - III	Barrel Grinding-III	Zinc Coating - IV & V
03	Stack Height	Meter	30	30	30	30	30	30	30
04	Stack Duct Diameter	Meter	0.6	0.6	0.6	0.6	0.6	0.6	0.9
05	Stack Temperature	°C	50	---	58	---	---	---	45
06	Ambient Temperature	°C	26	---	27	---	---	---	27
07	Average Velocity of Flue Gases	m/sec.	17.3	---	16.6	---	---	---	15.6
08	IsoKinetic Flowrate for Sampling	LPM	29	---	28	---	---	---	27
09	Inlet	mg/Nm^3	1892	---	2111	---	---	---	1530
10	Outlet	mg/Nm^3	16	---	13	---	---	---	11
11	Efficiency	%	99.15	---	99.38	---	---	---	99.28

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service.

Rajkot

Analyst

224

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 523/01/2015-16

Date : 03/02/2016

Performance Evaluation of Air Pollution Control Equipments

Pipe Plant (SDP-2) (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 5	S - 6	S-8
01	Date of Sampling	---	15/01/2016	15/01/2016	Not in operation during visit	15/01/2016
02	Attached to	---	Mg Treatment	Zinc Coating	Tri-Grinding	Zinc Coating machine
03	Stack Height	Meter	30	30	30	30
04	Stack Duct Diameter	Meter	1.00	1.00	1.00	0.8
05	Stack Temperature	°C	51	48	...	43
06	Ambient Temperature	°C	27	28	...	29
07	Average Velocity of Flue Gases	m/sec.	12.7	13.4	...	11.3
08	IsoKinetic Flowrate for Sampling	LPM	22	23	...	20
09	Inlet	mg/Nm^3	3031	2912	...	1402
10	Outlet	mg/Nm^3	28	16	...	8
11	Efficiency	%	99.08	99.45	...	99.43

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

225

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360685 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 530/01/2015-16

Date : 03/02/2016

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 11	S - 17	S - 25	S - 26	S - 27
01	Date of Sampling	---	Not In Operation During The Visit	16/01/2016	16/01/2016	16/01/2016	16/01/2016
02	Time of sampling	Hr.		11.30	12.30	15.30	16.30
03	Stack Attached to	---	Bitumin Drying Oven - I	Common stack Bitumin Drying Oven - II & Boiler	Shot Blasing - I	Shot Blasing - II	Shot Blasing - III
04	Air Pollution Control Measures	---	---	---	Bag Filter	Bag Filter	Bag Filter
05	Stack Height	Meter	32.8	32.8	10.0	10.0	10.0
06	Stack Diameter	Meter	1.375	1.375	0.41	0.41	1.125
07	Stack Temperature	°C	---	154	43	41	42
08	Ambient Temperature	°C	---	29	31	32	32
09	Average Velocity of Flue Gases	m/sec.	---	5.6	12.8	11.3	11.7
10	Isokinetic flow rate for P.M. Sampling	LPM	---	17	23	20	21
11	Gaseous Sampling Flow Rate	LPM	---	2.0	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	---	64	17	16	15
14	Permissible limits for SO2	mg/Nm3	100 ppm	100 ppm	40	40	40
15	Measured Concentration of SO2	mg/Nm3	---	25.1	ND	ND	ND
16	Permissible limits for Nox	mg/Nm3	50 ppm	50 ppm	25	25	25
17	Measured Concentration of Nox	mg/Nm3	---	23.4	ND	ND	ND

N.D= Not Detectable

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Environment Auditing & Consultancy Service ★ Rajkot

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Date : 03/02/2016

Ref. No. : 531/01/2015-16

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 8	S - 9	S - 16	S - 20	S - 22	S - 23
01	Date of Sampling	---	12/01/2016	11/01/2016	11/01/2016	11/01/2016	12/01/2016	18/01/2016
02	Time of sampling	Hr.	10.15	9.45	11.00	12.00	11.30	10.30
03	Stack Attached to	---	Common stack Mg Converter-I&II	Zn Coating - I	Zn Coating - II	Zn Coating - III	Mg Converter - III	Zn Coating - IV & V
04	Air Pollution Control Measures	---	Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Separator & Bag Filter	Bag Filter	Cyclone Separator & Bag Filter
05	Stack Height	Meter	30	30	30	30	30	30
06	Stack Diameter	Meter	0.5	0.6	0.6	0.5	0.5	0.9
07	Stack Temperature	°C	42	45	43	44	54	36
08	Ambient Temperature	°C	27	26	27	26	28	27
09	Average Velocity of Flue Gases	m/sec.	24.8	14.3	14.8	13.7	10.3	4.8
10	Isokinetic flow rate for P.M. Sampling	LPM	11	25	26	24	18	20
11	Gaseous Sampling Flow Rate	LPM	2.0	---	---	---	2.0	---
12	Permissible limits for PM	mg/Nm3	150	20 (Zn)	20 (Zn)	20 (Zn)	150	20 (Zn)
13	Measured Concentration of PM	mg/Nm3	30	16 (Zn)	13 (Zn)	14 (Zn)	34	11 (Zn)
14	Permissible limits for SO2	mg/Nm3	40	NA	NA	NA	40	NA
15	Measured Concentration of SO2	mg/Nm3	ND	---	---	---	ND	---
16	Permissible limits for Nox	mg/Nm3	25	NA	NA	NA	25	NA
17	Measured Concentration of Nox	mg/Nm3	2.7	---	---	---	2.1	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

N.A=Not Applicable

Royal Environment Auditing & Consultancy Service

Rajkot

Analyst

227

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ✉ E-mail : royalenvironment@live.com ✉ admin@royalconsultancy.com

Date : 03/02/2016

Ref. No. : 532/01/2015-16

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 12	S - 18
01	Date of Sampling	---	09/01/2016	09/01/2016	09/01/2016	09/01/2016	09/01/2016	09/01/2016	25/01/2016	25/01/2016
02	Time of sampling	Hr.	9.15	10.00	10.40	11.30	16.00	16.05	9.20	10.30
03	Stack Attached to	---	Core Shop-I	Core Shop-II	Core Shop-III	Core Shop-IV	Core Shop-V	Core Shop-VI	Core Cleaning & Dusting-I	Core Cleaning & Dusting-II
04	Air Pollution Control Measures	---	---	---	---	---	---	---	Bag Filter	Bag Filter
05	Stack Height	Meter	30	30	30	30	30	30	30	30
06	Stack Diameter	Meter	0.584	0.584	0.584	0.584	0.584	0.584	0.6	0.6
07	Stack Temperature	°C	35	36	36	37	41	39	43	45
08	Ambient Temperature	°C	26	26	27	27	28	28	26	27
09	Average Velocity of Flue Gases	m/sec.	4.1	3.9	4.3	5.5	5.7	5.3	13.2	14.1
10	Isokinetic flow rate for P.M. Sampling	LPM	17	16	16	22	23	22	24	25
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	11	16	25	31	46	15	32	41
14	Permissible limits for SO2	mg/Nm3	40	40	40	40	40	40	40	40
15	Measured Concentration of SO2	mg/Nm3	1.8	2.1	1.4	1.9	2.3	1.3	ND	ND
16	Permissible limits for Nox	mg/Nm3	25	25	25	25	25	25	25	25
17	Measured Concentration of Nox	mg/Nm3	2.1	2.7	2.4	2.6	3.1	2.9	5.2	4.6

N.D= Not Detectable

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal Environment Auditing & Consultancy Rajkot

228

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 * E-mail : royalenvironment@live.com * admin@royalconsultancy.com

Date : 03/02/2016

Ref. No. : 533/01/2016-16

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 7	S - 10	S - 13	S - 14	S - 16	S - 19	S - 21	S - 24
01	Date of Sampling	---	12/01/2016	Not in operation during visit	20/01/2016	20/01/2016	Not in operation during visit	20/01/2016	Not in operation during visit	Not in operation during visit
02	Time of sampling	Hr.	15.10		9.20	10.30		11.50		
03	Stack Attached to	---	Sand Reclamation	Barrel Grinding - I	Annealing Furnace - I	Annealing Furnace - II	Barrel Grinding - II	Annealing Furnace - III	Barrel Grinding-III	Barrel Grinding -IV&V
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	---	---	Bag Filter	---	Bag Filter	Bag Filter
05	Stack Height	Meter	30	30	32	32	30	32	30	30
06	Stack Diameter	Meter	0.9	0.5	1.375	1.375	0.9	1.375	0.5	0.5
07	Stack Temperature	°C	84	---	150	162	---	165	---	---
08	Ambient Temperature	°C	29	---	26	29	---	29	---	---
09	Average Velocity of Flue Gases	m/sec.	14.6	---	5.6	5.8	---	5.7	---	---
10	Isokinetic flow rate for P.M. Sampling	LPM	23	---	16	17	---	18	---	---
11	Gaseous Sampling Flow Rate	LPM	2.0	---	2.0	2.0	---	2.0	---	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	34	---	11	14	---	17	---	---
14	Permissible limits for SO2	mg/Nm3	40	40	100 (PPM)	100 (PPM)	40	100 (ppm)	40	40
15	Measured Concentration of SO2	mg/Nm3	6.5	---	3.2	3.8	---	2.9	---	---
16	Permissible limits for Nox	mg/Nm3	25	25	50 (PPM)	50 (PPM)	25	50 (PPM)	25	25
17	Measured Concentration of Nox	mg/Nm3	13.4	---	7.6 (PPM)	7.9 (PPM)	---	8.1 (PPM)	---	---

N.D= Not Detectable

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Environment Auditing & Consultancy Service Rajkot

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Date : 03/02/2016

Ref. No. : 534/01/2015-16

STACK EMISSION MONITORING RESULTS
Pipe Plant (SDP-2) (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 7	S - 8
01	Date of Sampling	—	15/01/2016	28/01/2016	26/01/2016	26/01/2016	15/01/2016	15/01/2016	Not in operation during visit	15/01/2016
02	Time of sampling	Hr.	9.30	10.30	11.45	12.50	10.50	16.30		14.15
03	Stack Attached to	—	Magnesium Treatment	Socket Cleaning	Annealing Furnace - I	Annealing Furnace - II	Zinc Coating	Tri- Grinding Section	Pre & Post Heating	Zinc Coating Machine
04	Air Pollution Control Measures	—	Bag Filter	Bag Filter	—	—	Bag Filter	Bag Filter	—	—
05	Stack Height	Meter	30	30	45	45	30	30	30	30
06	Stack Diameter	Meter	1.00	0.50	0.85	0.85	1.00	1.00	0.85	1.20
07	Stack Temperature	°C	42	36	138	134	40	38.00	—	37
08	Ambient Temperature	°C	27	28	30	30	28	5.00	—	29
09	Average Velocity of Flue Gases	m/sec	3.0	3.5	4.3	3.9	3.8	4.2	—	3.2
10	Isokinetic flow rate for PM Sampling	LPM	16	14	13	12	15	17	—	13
11	Gaseous Sampling Flow Rate	LPM	—	—	2.0	2.0	—	—	—	—
12	Permissible limits for PM	mg/Nm³	50	50	50	50	50	50	50	50
13	Measured Concentration of PM	mg/Nm³	28	18	15	17	18 (Zn)	12	—	8
14	Permissible limits for SO2	PPM	NA	NA	100	100	NA	NA	NA	NA
15	Measured Concentration of SO2	PPM	—	—	2.3	2.8	—	—	—	—
16	Permissible limits for NOx	PPM	NA	NA	50	50	NA	NA	NA	NA
17	Measured Concentration of NOx	PPM	—	—	4.7	5.3	—	—	—	—

ND= Not Detectable
N.A= Not Applicable

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.05 ppm respectively,
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Analyst

Royal Environment Auditing & Consultancy Service

Royal Environment Auditing & Consultancy Rajkot

230

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 542/01/2015-16

Date : 03/02/2016

WORK ZONE NOISE LEVEL MEASUREMENT
PIPE PLANT (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 23rd January, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room of Annealing Furnace of DISP / SDP	49.7	54.4	52.3
02	Inside Control Room – Mill Area of Spiral Plant	61.2	65.1	62.4
03	Nr. Pipe Cutting Area of Spiral Plant	68.4	78.2	72.2
04	Inside JCO Plant	65.5	76.7	68.1
05	Inside DISP / SDP Plant	69.8	80.5	74.3
06	Inside Coating Plant	66.3	75.1	71.1
07	Nr. CCM SDP-2	65.1	73.4	67.8
08	Inside Control Room of Annealing Furnace of SDP-2	51.4	55.2	52.6
09	Nr. Zinc Coating SDP-2	67.6	78.7	73.5
10	Near Mould Shop	77.2	88.5	79.4

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Rajkot

Analyst

Ref. No. : 539/01/2015-16

Date : 03/02/2016

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant.: DISP,JCO & Coating Units at JINDAL SAW LIMITED, Samaghogha.(GPCB ID: 18036)

2 Raw materials, by products and finished products involved in the process. TOTAL DUST

3 Particulars of sampling

Date of Sampling : 19th & 20th January, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Referance Method	Number of workers exposed at the location being monitored	Remark	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Spiral Plant (Nr. ID/OD)	Total Dust	Personal Respirable Dust sampler IAS-001	02	1-4	2.5	10	Gravimetric	4	----		Mr. MANOJ SONRAT
2	JCO Plant (Nr. JCO Press)	Total Dust		02	2-5	3.5	10	Gravimetric	3	----		
3	Coating Plant-1 (Shot Blasting Area)	Total Dust		02	4-5	4.5	10	Gravimetric	5	----		
4	CCM Area (SDP / DISP)	Total Dust		02	6-7	6.5	10	Gravimetric	4	----		
5	Coating Plant-2 (Shot Blasting Area)	Total Dust		02	4-6	5.0	10	Gravimetric	3	----		
6	CCM Area (SDP-2)	Total Dust		02	5-7	6.0	10	Gravimetric	5	----		

Instruments used : Envirotech make personal sampler, Model No. IAS 001

Calibration Due on : 02/11/2016

For, Royal Environment Auditing & Consultancy Service

Royal Environment Auditing & Consultancy Service ★ Rajkot

Authorized Sign

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.:+91 281 2360895 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Date : 03/02/2016

Ref. No. : 511/01/2015-16

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - JANUARY : 2016

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist :Kutch

Test Method : As per IS Standards - 5182_2/8/10/23

Sr. No.	Particulars	Unit	Location No.1 : Security Main Gate (S)								
			01	02		03		04		05	
01.	No. of Week	----	01/01/2016; 08.00	04/01/2016; 08.10	08/01/2016; 08.00	11/01/2016; 08.20	15/01/2016; 08.15	18/01/2016; 08.30	22/01/2016; 08.20	25/01/2016; 08.05	29/01/2016; 08.15
02.	Date & Time Starting of Monitoring	----	02/01/2016; 09.00	05/01/2016; 08.10	09/01/2016; 08.00	12/01/2016; 08.20	16/01/2016; 08.15	19/01/2016; 08.30	23/01/2016; 08.20	26/01/2016; 08.05	30/01/2016; 08.15
03.	Date & Time Ending of Monitoring	----	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00
04.	Duration of Sampling	Min.	NNE	NNE	NE	NW	NE	NNW	NNE	NNE	NNW
05.	Dominant Wind Direction (From)	---	3.6	1.5	3.0	1.7	2.7	2.7	2.7	2.2	2.1
06.	Average Wind Speed	Km/Hr.	1.20	1.23	1.21	1.18	1.19	1.20	1.22	1.23	1.25
07.	Average flow rate for Dust Monitoring PM_{10}	m3/min.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
08.	Average flow rate for Dust Monitoring $PM_{2.5}$	m3/hr.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
09.	Average flow rate for Gas Monitoring	LPM	100	100	100	100	100	100	100	100	100
10.	Permissible limits for PM_{10}*	µg/m3	38	38	40	46	45	39	43	37	35
11.	Measured Concentration of PM_{10}	µg/m3	60	60	60	60	60	60	60	60	60
12.	Permissible limits for $PM_{2.5}$*	µg/m3	14	16	18	17	20	18	21	13	15
13.	Measured Concentration of $PM_{2.5}$	µg/m3	80	80	80	80	80	80	80	80	80
14.	Permissible limits for SO_2*	µg/m3	6.2	5.8	4.7	4.1	4.4	4.9	4.5	3.9	3.5
15.	Measured Concentration of SO_2	µg/m3	80	80	80	80	80	80	80	80	80
16.	Permissible limits for NO_2*	µg/m3	16.5	15.6	16.2	16.1	16.9	15.7	16.3	13.9	13.4
17.	Measured Concentration of NO_2	µg/m3	2000	2000	2000	2000	2000	2000	2000	2000	2000
18.	Permissible limit for CO **	µg/m3	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.
19.	Measured Concentration of CO	µg/m3									

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

B.D.L= Below Detectable Limit

All Calibration due on : 25/05/2016

*Permissible Limits are as per NAAQ Standard 16th November 2009.

Royal Environment Auditing & Consultancy Service

Rajkot

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Date : 03/02/2016

Ref. No. : 512/01/2016-16

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - JANUARY : 2016

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. - Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/6/10/23

Sr. No.	Particulars	Unit	Location No.2 : Sinter plant - 1 (NNW)								
			01	02		03		04		05	
01.	No. of Week	----	01/01/2016; 09.20	04/01/2016; 08.30	08/01/2016; 08.25	11/01/2016; 08.40	15/01/2016; 08.35	18/01/2016; 08.50	22/01/2016; 08.45	25/01/2016; 08.25	29/01/2016; 08.35
02.	Date & Time Starting of Monitoring	----	02/01/2016; 09.20	05/01/2016; 08.30	09/01/2016; 08.25	12/01/2016; 08.40	16/01/2016; 08.35	19/01/2016; 08.50	23/01/2016; 08.45	26/01/2016; 08.25	29/01/2016; 08.35
03.	Date & Time Ending of Monitoring	----	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00
04.	Duration of Sampling	Min.	NNE	NNE	NE	NW	NE	NNW	NNE	NNE	NNW
05.	Dominant Wind Direction (From)	----	3.0	1.5	3.0	1.7	2.7	2.7	2.7	2.2	2.1
06.	Average Wind Speed	Km/Hr.	1.16	1.13	1.17	1.15	1.18	1.14	1.21	1.11	1.16
07.	Average flow rate for Dust Monitoring PM10	m3/min.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
08.	Average flow rate for Dust Monitoring PM2.5	m3/hr.	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
09.	Average flow rate for Gas Monitoring	LPM	100	100	100	100	100	100	100	100	100
10.	Permissible limits for PM10*	µg/m3	47	49	43	46	40	45	39	50	44
11.	Measured Concentration of PM10	µg/m3	60	60	60	60	60	60	60	60	60
12.	Permissible limits for PM2.5*	µg/m3	20	23	21	22	24	17	20	18	20
13.	Measured Concentration of PM2.5	µg/m3	80	80	80	80	80	80	80	80	80
14	Permissible limits for SO_2*	µg/m3	4.1	6.2	5.6	5.2	5.9	4.3	4.8	4.4	5.1
15.	Measured Concentration of SO_2	µg/m3	80	80	80	80	80	80	80	80	80
16.	Permissible limits for NO_2*	µg/m3	17.4	16.7	16.3	17.8	17.4	16.9	17.5	15.8	14.9
17.	Measured Concentration of NO_2	µg/m3	2000	2000	2000	2000	2000	2000	2000	2000	2000
18.	Permissible limit for CO **	µg/m3	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.
19.	Measured Concentration of CO										

B.D.L.= Below Detectable Limit

Instrument used : (1) 3 Nos. RDS (APM - 217 BL). (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/02/2016

*Permissible Limits are as per NAAQ Standard 18th November 2009.

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 513/01/2015-16

Date : 03/02/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - JANUARY : 2016

Name of company : JINDAL SAW LIMITED
Village: Samaghogha.
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/0/10/23

Sr. No.	Particulars	Unit	Location No.3 : Nr. Work Shop Spiral-II (W)								
01.	No. of Week	----	01	02		03		04		05	
02.	Date & Time Starting of Monitoring	----	01/01/2016; 09.40	04/01/2016; 08.50	05/01/2016; 09.45	11/01/2016; 09.00	16/01/2016; 08.55	18/01/2016; 09.10	22/01/2016; 09.05	25/01/2016; 08.45	28/01/2016; 08.55
03.	Date & Time Ending of Monitoring	----	02/01/2016; 09.40	05/01/2016; 08.50	09/01/2016; 09.45	12/01/2016; 09.00	18/01/2016; 08.55	19/01/2016; 09.10	23/01/2016; 09.05	26/01/2016; 08.45	29/01/2016; 08.55
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	NNE	NNE	NE	NW	NE	NNW	NNE	NNE	NNW
06.	Average Wind Speed	Km/Hr.	3.6	1.6	3.0	1.7	2.7	2.7	2.7	2.2	2.1
07.	Average flow rate for Dust Monitoring PM10	m3/min.	1.18	1.21	1.15	1.12	1.13	1.16	1.14	1.20	1.23
08.	Average flow rate for Dust Monitoring PM2.5	m3/hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
09.	Average flow rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible limits for PM_{10}*	µg/m3	100	100	100	100	100	100	100	100	100
11.	Measured Concentration of PM_{10}	µg/m3	34	40	35	42	38	35	39	30	28
12.	Permissible limits for $PM_{2.5}$*	µg/m3	60	60	60	60	60	60	60	60	60
13.	Measured Concentration of $PM_{2.5}$	µg/m3	12	15	13	16	18	21	19	17	20
14.	Permissible limits for SO_2*	µg/m3	80	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO_2	µg/m3	3.2	2.9	3.6	2.2	2.5	3.7	4.1	2.4	3.1
16.	Permissible limits for NO_x*	µg/m3	80	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO_2	µg/m3	15.4	15.7	13.2	14.9	15.8	14.6	15.2	12.6	12.3
18.	Permissible limit for CO **	µg/m3	2000	2000	2000	2000	2000	2000	2000	2000	2000
19.	Measured Concentration of CO	µg/m3	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.

Instrument used : (1) 8 Nos. RDS (APM - 217 CL), (2) 3 Nos. of Gaseous Sampler (AAS 109)-(3) 3 Nos. PM 2.5 Sampler (AAS 127)

B.D.L= Below Detectable Limit

At Calibration due on : 25/05/2016

*Permissible Limits are as per NAAQ Standard 16th November 2009.

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.:+91 281 2360595 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Date : 03/02/2016

Ref. No. : 514/01/2015-16

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/6/10/23

Sr.No.	Particulars	Unit	AAQM - 1 (S)	AAQM - 2 (SSW)	AAQM - 3 (WSW)	AAQM - 4 (NW)
01.	Location of Ambient	---	Old Colony (Nr. Environment Laboratory)	Nr. Rain Water Harvesting	LPG Yard (Nr. Water Reservoir)	Between Sinter - 2 & Spiral - 2
02.	Date of sampling	---	12/01/2016	12/01/2016	13/01/2016	13/01/2016
03.	Time of sampling	---	8.05	8.20	8.10	8.35
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	---	NNW	NNW	NNE	NNE
06.	Average Wind Speed	Km/Hr.	1.7	1.7	2.3	2.3
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m3	100	100	100	100
10.	Measured Concentration of PM 10	µg/m3	24	48	43	31
11.	Permissible limits for PM 2.5*	µg/m3	60	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	11	23	18	15
13.	Permissible limits for SO_2*	µg/m3	80	80	80	80
14.	Measured Concentration of SO_2	µg/m3	2.3	3.5	4.2	3.7
15.	Permissible limits for NO_2*	µg/m3	80	80	80	80
16.	Measured Concentration of NO_2	µg/m3	7.6	12.6	11.5	10.4
17.	Permissible limit for CO **	µg/m3	2000	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL	BDL

Instrument used : (1) Ecotech make 3 Nos. RDS (APM - 217 BL). (2) 3 Nos. Gaseous Sampling Kit (APM 109), & 3 Nos. PM 2.5 Sampler (AAS 127)

BDL= Below Detectable Limit

All Calibration due on : 25/05/2016

*Permissible Limits are as per NAAQ Standard 16th November 2009.

Royal Environment Auditing & Consultancy Service

Rajkot

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360595 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Date : 03/02/2016

Ref. No. : 516/01/2015-16

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/6/10/23

Sr. No.	Particulars	Unit	AAQM - 5 (NE)	AAQM - 6 (SE)	AAQM - 7 (ESE)	AAQM - 8 (E)
01.	Location of Ambient	----	Labour Colony	New Colony (Shopping Centre)	VIP Guest House	Weigh bridge
02.	Date of sampling	----	14/01/2016	14/01/2016	15/01/2016	15/01/2016
03.	Time of sampling	---	8.15	8.40	8.25	8.45
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	---	NNE	NNE	NE	NE
06.	Average Wind Speed	Km/Hr.	1.0	1.0	2.7	2.7
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m3	100	100	100	100
10.	Measured Concentration of PM 10	µg/m3	40	35	33	54
11.	Permissible limits for PM 2.5*	µg/m3	60	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	19	22	14	20
13.	Permissible limits for SO_2*	µg/m3	80	80	80	80
14.	Measured Concentration of SO_2	µg/m3	5.2	3.4	4.2	6.1
15.	Permissible limits for NO_2*	µg/m3	80	80	80	80
16.	Measured Concentration of NO_2	µg/m3	11.8	10.2	13.7	15.8
17.	Permissible limit for CO **	µg/m3	2000	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL	BDL

Instrument used : (1) Ecotech make 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampling Kit (APM 109), & 3 Nos. PM 2.5 Sampler (AAS 127)

BDL= Below Detectable Limit

All Calibration due on : 25/06/2016

*Permissible Limits are as per NAAQ Standard 16th November 2009.

Environment Auditing & Consultancy Service Rajkot

Analyst

Roval Environment Auditing & Consultancy Service

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. :616/01/2015-16

Date : 03/02/2016

FUGITIVE EMISSION MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23/22

Sr. No.	Particulars	Unit	A - 1	A - 2	A - 3
01.	Location of Ambient	----	RMH Junction House	RMH Stock House	Sinter RMH Yard
02.	Date of sampling	----	19/01/2016	19/01/2016	20/01/2016
03.	Time of sampling	----	8.00	8.15	8.30
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	----	NNW	NNW	NNE
06.	Average Wind Speed	Km/Hr.	4.2	4.2	4.6
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m3	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m3	1482	1310	1246
11.	Permissible limits for SO2*	µg/m3	150	150	150
12.	Measured Concentration of SO2	µg/m3	13.8	12.7	14.9
13.	Permissible limits for NO2*	µg/m3	120	120	120
14.	Measured Concentration of NO2	µg/m3	26.7	27.2	26.8
15.	Permissible limit for CO **	µg/m3	2000	2000	2000
16.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL
17.	Permissible limit for Pb*	µg/m3	2	2	2
18.	Measured Concentration of Pb	µg/m3	ND	ND	ND

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampler (APM 169)
All Calibration due on : 25/05/2016

BDL= Below Detectable Limit
ND= Not Detectable

Royal Environment Auditing & Consultancy Service

Analyst

239

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 * E-mail : royalenvironment@live.com * admin@royalconsultancy.com

Ref. No. :517/01/2015-16

Date : 03/02/2016

FUGITIVE EMISSION MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23/22

Sr. No.	Particulars	Unit	A - 4	A - 5	A - 6
01.	Location of Ambient	---	Sinter 2 Ground Hopper	DISP "CCM" Area	BF CAST HOUSE
02.	Date of sampling	---	20/01/2016	21/01/2016	21/01/2016
03.	Time of sampling	---	8.50	8.20	8.45
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	---	NNE	NNE	NNE
06.	Average Wind Speed	Km/Hr.	4.6	4.6	4.6
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m3	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m3	855	608	1081
11.	Permissible limits for SO2*	µg/m3	150	150	150
12.	Measured Concentration of SO2	µg/m3	11.6	15.7	12.3
13.	Permissible limits for NO2*	µg/m3	120	120	120
14.	Measured Concentration of NO2	µg/m3	22.9	28.4	26.1
15.	Permissible limit for CO **	µg/m3	2000	2000	2000
16.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL
17.	Permissible limit for Pb*	µg/m3	2	2	2
18.	Measured Concentration of Pb	µg/m3	ND	ND	ND

Instrument used : (1) 3 Nos. RDS (APM - 217 BL); (2) 3 Nos. Gaseous Sampler (APM 109)
All Calibration due on : 25/05/2016

BDL= Below Detectable Limit
ND= Not Detectable

Royal Environment Auditing & Consultancy Service

Environment Auditing & Consultancy Service Rajkot

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 543/01/2015-16

Date : 03/02/2016

AMBIENT NOISE LEVEL MEASUREMENT

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 22nd January, 2016

Sr. No.	Location of Sampling	Value in dB(A) Day Time			Value in dB(A) Night Time		
		Min.	Max.	Leq	Min.	Max.	Leq
01.	Admin. Building	43.5	51.2	44.5	38.6	44.4	40.4
02.	Old Colony	37.6	42.3	39.2	34.4	40.1	35.3
03.	Nr. LPG Yard	53.4	61.7	54.6	49.7	55.6	51.1
04.	New Colony (School)	38.4	44.8	40.1	35.2	39.7	36.1
05.	Nr. SDP-2	57.7	65.2	58.6	54.3	60.5	56.2
06.	Nr. Coating Plant	55.2	64.3	59.5	52.6	62.2	55.5
07.	Nr. Gate No. 2	56.7	63.6	58.1	50.3	58.1	51.8
08.	Nr. Sinter Plant-1	61.4	66.1	62.1	54.6	60.3	56.3
09.	Nr. Sinter Plant-2	58.5	67.2	60.7	55.7	61.6	57.2
10.	Nr. Blast Furnace-1	57.4	61.7	58.2	52.6	59.4	54.1
11.	Nr. Blast Furnace-2	56.5	62.1	57.4	46.1	52.3	49.6
12.	Nr. Main Gate (Security Office)	44.3	53.3	46.6	40.5	45.7	42.1

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Rajkot

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Date : 02/03/2016

Ref. No. : 576/02/2015-16

Performance Evaluation of Air Pollution Control Equipments

Sinter Plant-1 (GPCB ID 35456)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No:	Particulars	Unit	S - 1	S - 2	S - 3	S - 6
01	Date of Sampling	---	19/02/2016	Not in operation during visit	19/02/2016	19/02/2016
02	Attached to	---	Fuel & Flux crusher & screening building	Fuel & Flux crushing house	Sinter Furnace	Discharge end
03	Stack Height	Meter	32	27	50	32
04	Stack Diameter	Meter	1.4	1.4	2.0	1.3
05	Stack Temperature	°C	49	---	143	122
06	Ambient Temperature	°C	29	---	28	29
07	Average Velocity of Flue Gases	m/sec.	26.9	---	37.2	33.1
08	IsoKinetic Flowrate for Sampling	LPM	12	---	13	12
09	Inlet	mg/Nm^3	2436	---	3892	3298
10	Outlet	mg/Nm^3	21	---	39	28
11	Efficiency	%	99.14	---	99.00	99.15

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Royal Environment Auditing & Consultancy Service ★ Rajkot

manoj
Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 579/02/2015-16

Date : 02/03/2016

Blast Furnace Plant-1(GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1
01	Date of Sampling	---	11/02/2016
02	Attached to	---	De-dustingSystem
03	Stack Height	Meter	35
04	Stack Duct Diameter	Meter	1.4
05	Stack Temperature	°C	51
06	Ambient Temperature	°C	28
07	Average Velocity of Flue Gases	m/sec.	15.7
08	IsoKinetic Flowrate for Sampling	LPM	27
09	Inlet	mg/Nm^3	1211
10	Outlet	mg/Nm^3	5
11	Efficiency	%	99.59

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

2019.

243

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 580/02/2016-16

Date : 02/03/2016

Performance Evaluation of Air Pollution Control Equipments

Sinter Plant-2 (GPCB ID:29017)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 7	S - 9	S-10
01	Date of Sampling	---	Not in operation during visit	Not in operation during visit	24/02/2016	12/02/2016	12/02/2016	Not in operation during visit
02	Attached to	---	Fuel crushing de-duster system (Fuel)	Fuel crushing de-duster system (Flux)	Fuel screening deduster system (Flux screening)	Sinter Furnace	Discharging end of Sinter de-dusting System	Pulverised Coal Injection
03	Stack Height	Meter	30	30	30	50	50	32
04	Stack Diameter	Meter	0.7	0.7	0.7	2.0	1.3	1.0
05	Stack Temperature	°C	49	52	47	148	101	142
06	Ambient Temperature	°C	---	---	30	28	30	---
07	Average Velocity of Flue Gases	m/sec.	---	---	13.3	35.7	38.6	---
08	IsoKinetic Flowrate for Sampling	LPM	---	---	23	12	15	---
09	Inlet	mg/Nm^3	---	---	2846	4039	3410	---
10	Outlet	mg/Nm^3	---	---	23	46	24	---
11	Efficiency	%	---	---	99.19	98.86	99.30	---

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Rajkot

manoj
Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 581/02/2015-16

Date : 02/03/2016

Performance Evaluation of Air Pollution Control Equipments
Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist: Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 7	S - 8	S - 12	S - 18	S - 22
01	Date of Sampling	---	20/02/2016	16/02/2016	06/02/2016	06/02/2016	10/02/2016
02	Attached to		Sand Reclamation	Common stack Mg Converter - I & II	Core Cleaning & Dusting - I	Core Cleaning & Dusting - II	Mg Converter - III
03	Stack Height	Meter	32	30	30	30	30
04	Stack Diameter	Meter	0.9	0.6	0.6	0.6	0.5
05	Stack Temperature	°C	114	66	53	57	92
06	Ambient Temperature	°C	30	28	27	29	28
07	Average Velocity of Flue Gases	m/sec.	37.5	15.7	15.2	16.1	15.9
08	IsoKinetic Flowrate for Sampling	LPM	14	27	26	27	24
09	Inlet	mg/Nm^3	3794	4361	3993	4234	4401
10	Outlet	mg/Nm^3	39	37	38	46	29
11	Efficiency	%	98.97	99.15	99.05	98.91	99.34

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

manoj
Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 582/02/2015-16

Date : 02/03/2016

Performance Evaluation of Air Pollution Control Equipments
Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist: Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 9	S - 10	S - 15	S - 16	S - 20	S - 21	S - 23
01	Date of Sampling	---	08/02/2016	Not in operation during visit	09/02/2016	Not in operation during visit	15/02/2016	Not in operation during visit	16/02/2016
02	Attached to	---	Zinc Coating - I	Barrel Grinding-I	Zinc Coating - II	Barrel Grinding-II	Zinc Coating - III	Barrel Grinding-III	Zinc Coating - IV & V
03	Stack Height	Meter	30	30	30	30	30	30	30
04	Stack Duct Diameter	Meter	0.6	0.6	0.6	0.6	0.6	0.6	0.9
05	Stack Temperature	°C	50	...	54	...	48	...	49
06	Ambient Temperature	°C	27	...	29	...	27	...	29
07	Average Velocity of Flue Gases	m/sec.	16.2	...	15.9	...	26.8	...	14.1
08	IsoKinetic Flowrate for Sampling	LPM	28	...	27	...	12	...	24
09	Inlet	mg/Nm^3	1929	...	2016	...	2122	...	1603
10	Outlet	mg/Nm^3	18	...	15	...	17	...	13
11	Efficiency	%	99.07	...	99.26	...	99.20	...	99.19

Instrument Used : Stack Monitoring kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 583/02/2015-16

Date : 02/03/2016

Performance Evaluation of Air Pollution Control Equipments

Pipe Plant (SDP-2) (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 5	S - 6	S-8
01	Date of Sampling	---	16/02/2016	16/02/2016	16/02/2016	05/02/2016
02	Attached to	---	Mg Treatment	Zinc Coating	Tri-Grinding	Zinc Coating machine
03	Stack Height	Meter	30	30	30	30
04	Stack Duct Diameter	Meter	1.00	1.00	1.00	0.8
05	Stack Temperature	°C	54	48	43	41
06	Ambient Temperature	°C	27	28	30	29
07	Average Velocity of Flue Gases	m/sec.	12.5	12.5	12.8	10.6
08	IsoKinetic Flowrate for Sampling	LPM	21	22	23	19
09	Inlet	mg/Nm^3	3115	3021	2821	1520
10	Outlet	mg/Nm^3	35	22	16	11
11	Efficiency	%	98.88	99.27	99.43	99.28

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

247

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 584/02/2015-16

Date : 02/03/2016

Performance Evaluation of Air Pollution Control Equipments

Blast Furnace Plant-2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 4	S - 6
01	Date of Sampling	---	13/02/2016	13/02/2016	13/02/2016
02	Attached to	---	Dedusting System	Coke fine building dust collecting system	Iron Ore fine & Dust Collecting System
03	Stack Height	Meter	40	30	30
04	Stack Duct Diameter	Meter	1.5	0.85	0.65
05	Stack Temperature	°C	65	72	46
06	Ambient Temperature	°C	29	29	30
07	Average Velocity of Flue Gases	m/sec.	37.6	16.6	15.2
08	IsoKinetic Flowrate for Sampling	LPM	16	27	26
09	Inlet	mg/Nm^3	4251	1897	1634
10	Outlet	mg/Nm^3	34	6	5
11	Efficiency	%	99.20	99.68	99.69

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Royal Environment Auditing & Consultancy Services ☆ Rajkot

manoj
Analyst

248

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. :585/02/2015-16

Date : 02/03/2016

STACK EMISSION MONITORING RESULTS

Sinter Plant - 1(GPCB ID:35456)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6
01	Date of Sampling	---	19/02/2016	Not in operation during visit	19/02/2016	Not Running During Visit	Not Running During Visit	19/02/2016
02	Time of sampling	---	14.15		9.10			11.20
03	Stack Attached to	---	Fuel & Flux Crusher and Screening building	Fuel & Flux Crushing House	Sinter Furnace	Primary Mixture House	Secondary Mixture House	Discharge End
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	ESP	....	....	ESP
05	Stack Height	Meter	32.0	27.00	50	19.75	36.08	32
06	Stack Diameter	Meter	1.40	1.40	2.0	1.25	1.25	1.30
07	Stack Temperature	°C	41	....	149	....	....	127
08	Ambient Temperature	°C	29	....	28	....	....	29
09	Average Velocity of Flue Gases	m/sec.	6.5	....	11.3	....	....	18.8
10	Isokinetic flow rate for P.M. Sampling	LPM	27	....	15	....	....	27
11	Gaseous Sampling Flow Rate	LPM	....	....	2.0	....	....	....
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	21	...	39	...	...	28
14	Permissible limits for SO2	ppm	NA	NA	100	NA	NA	NA
15	Measured Concentration of SO2	ppm	...	...	ND	....	....	.....
16	Permissible limits for NOx	ppm	NA	NA	50	NA	NA	NA
17	Measured Concentration of NOx	ppm	....	....	7.6	....	....	....

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.

NA= Not Applicable

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100

Calibration due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Rajkot

Analyst

249

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 565/02/2015-16

Date : 02/03/2016

STACK EMISSION MONITORING RESULTS

Sinter Plant -2 (GPCB ID:29017)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 7	S - 8	S - 9	S - 10
01	Date of Sampling	---	Not In Operation During The Visit	Not In Operation During The Visit	24/02/2015	Not In Operation During The Visit	NA	NA	12/02/2016	Not In Operation During The Visit	12/02/2016	Not In Operation During The Visit
02	Time of sampling	Hr.			14.30				9.00		10.15	
03	Stack Attached to	---	Fuel crushing de-duster systen (Flux)	Fuel crushing de-duster system(Fuel)	Fuel Scrooning dedustor System (Flux Screening)	No. I Transfer Station De-dustor System	Primary Mixer De-duster system	Secondary Mixer De-duster system	Sinter Furnace	Transfer station no. 4 & 5 dedusting system	Discharging End of sinter de-dusting system	Pulverized Coal Injection
04	Air Pollution Control Measures	---	Dust Collector	Dust Collector	Dust Collector	Dust Collector	Dust Collector	Dust Collector	ESP	Dust Collector	ESP	Bag Filter
05	Stack Height	Meter	30	30	30	30	20	30	50	30	50	32
06	Stack Diameter	Meter	0.7	0.7	0.7	0.7	---	---	2	0.7	1.3	1.00
07	Stack Temperature	°C	---	---	38	---	---	---	154	---	107	---
08	Ambient Temperature	°C	---	---	30	---	---	---	28	---	29	---
09	Average Velocity of Flue Gases	m/sec.	---	---	8.7	---	---	---	13.5	---	31.9	---
10	Isokinetic flow rate for P.M. Sampling	LPM	---	---	16	---	---	---	18	---	12	---
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	---	---	2.0	---	---	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	---	---	23	---	---	---	46	---	24	---
14	Permissible limits for SO2	ppm	NA	NA	NA	NA	NA	NA	100	NA	NA	100 (ppm)
15	Measured Concentration of SO2	ppm	---	---	---	---	---	---	ND	---	---	---
16	Permissible limits for NOx	ppm	NA	NA	NA	NA	NA	NA	50	NA	NA	50 (ppm)
17	Measured Concentration of NOx	ppm	---	---	---	---	---	---	9.5	---	---	---

NA= Not Applicable

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on : 25/02/2016

Royal Environment Auditing & Consultancy Service

Environment Auditing & Consultancy Service Rajkot

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. :587/02/2015-16

Date : 02/03/2016

STACK EMISSION MONITORING RESULTS

BLAST FURNACE - 2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255, Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5
01	Date of Sampling	---	13/02/2016	13/02/2016	Monitoring Not Possible	13/02/2016	13/02/2016
02	Time of sampling	Hr.	9.35	8.30		14.05	15.45
03	Stack Attached to	---	Dedusting System	Stove Stack	Flare Stack	Coke fine building dust collecting system	Iron Ore fine & Dust Collecting System
04	Air Pollution Control Measures	---	Bag Filter	---	---	Bag Filter	Bag Filter
05	Stack Height	Meter	40.0	65.0	45	30.0	30.0
06	Stack Diameter	Meter	1.5	2.250	---	---	0.85
07	Stack Temperature	°C	47	219	---	51	35
08	Ambient Temperature	°C	29	27	---	29	30
09	Average Velocity of Flue Gases	m/sec.	30.5	3.1	---	12.7	10.5
10	Isokinetic flow rate for P.M. Sampling	LPM	13	8	---	22	19
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	34	3	---	6	5
14	Permissible limits for SO2	mg/Nm3	NA	NA	NA	NA	NA
15	Measured Concentration of SO2	mg/Nm3	---	---	---	---	---
16	Permissible limits for NOx	mg/Nm3	NA	NA	NA	NA	NA
17	Measured Concentration of Nox	mg/Nm3	---	---	---	---	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively. NA=Not Applicable
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Royal Environment Auditing & Consultancy Rajkot

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 588/02/2015-16

Date : 02/03/2016

STACK EMISSION MONITORING RESULTS

BLAST FURNACE-1 (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5
01	Date of Sampling	---	11/02/2016	11/02/2016	11/02/2016	11/02/2016	Monitoring Not Possible
02	Time of sampling	Hr.	9.40	14.50	16.00	8.00	
03	Stack Attached to	---	Dedusting System	Boiler - I	Boiler - II	Stove Stack	Flare Stack
04	Air Pollution Control Measures	---	Bag Filter	---	---	---	---
05	Stack Height	Meter	35.0	45	45	50.0	30
06	Stack Diameter	Meter	1.5	1.4	1.4	2.25	---
07	Stack Temperature	°C	43	168	175	228	---
08	Ambient Temperature	°C	28	29	29	26	---
09	Average Velocity of Flue Gases	m/sec.	11.2	4.7	5.1	3.5	---
10	Isokinetic flow rate for P.M. Sampling	LPM	20	13	14	9	---
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	5	9	10	2	---
14	Permissible limits for SO2	mg/Nm3	40	40	40	40	40
15	Measured Concentration of SO2	mg/Nm3	ND	ND	ND	ND	---
16	Permissible limits for NOx	mg/Nm3	25	25	25	25	25
17	Measured Concentration of NoX	mg/Nm3	ND	ND	ND	ND	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively. N.D=Not Detectable
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 26/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 589/02/2016-16

Date : 02/03/2016

STACK EMISSION MONITORING RESULTS

Captive Power Plant (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4
01	Date of Sampling	---	Not In Operation During The Visit	17/02/2016	17/02/2016	Not In Operation During The Visit
02	Time of sampling	Hr.		10.30	11.35	
03	Stack Attached to	---	6000 KVA D.G.	3240 KVA D.G.	3240 KVA D.G.	1180 KVA D.G.
04	Air Pollution Control Measures	---	---	---	---	---
05	Stack Height	Meter	57.0	35	36	35
06	Stack Diameter	Meter	1.984	1.484	1.484	0.980
07	Stack Temperature	°C	---	251	248	---
08	Ambient Temperature	°C	---	29	30	---
09	Average Velocity of Flue Gases	m/sec.	---	24.7	24.2	---
10	Isokinetic flow rate for P.M. Sampling	LPM	---	26	26	---
11	Gaseous Sampling Flow Rate	LPM	---	2.0	2.0	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	---	67	61	---
14	Permissible limits for SO2	ppm	100	100	100	100
15	Measured Concentration of SO2	ppm	---	29.4	28.6	---
16	Permissible limits for Nox	ppm	50	50	50	50
17	Measured Concentration of Nox	ppm	---	23.1	23.9	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

253

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2380695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 590/02/2015-16

Date : 02/03/2015

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 11	S - 17	S - 25	S - 26	S - 27
01	Date of Sampling	---	Not In Operation During The Visit	10/02/2016	Not In Operation During The Visit	18/02/2016	18/02/2016
02	Time of sampling	Hr.		9.30		15.15	16.20
03	Stack Attached to	---	Bitumin Drying Oven - I	Common stack Bitumin Drying Oven - II & Boiler	Shot Blasing - I	Shot Blasing - II	Shot Blasing - III
04	Air Pollution Control Measures	---	---	---	Bag Filter	Bag Filter	Bag Filter
05	Stack Height	Meter	32.8	32.8	10.0	10.0	10.0
06	Stack Diameter	Meter	1.375	1.375	0.41	0.41	1.125
07	Stack Temperature	°C	---	168	---	39	38
08	Ambient Temperature	°C	---	28	---	31	30
09	Average Velocity of Flue Gases	m/sec.	---	5.1	---	11.8	12.5
10	Isokinetic flow rate for P.M. Sampling	LPM	---	15	---	21	22
11	Gaseous Sampling Flow Rate	LPM	---	2.0	---	2.0	2.0
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	---	88	---	19	17
14	Permissible limits for SO2	mg/Nm3	100 ppm	100 ppm	40	40	40
15	Measured Concentration of SO2	mg/Nm3	---	26.4	---	ND	ND
16	Permissible limits for Nox	mg/Nm3	50 ppm	50 ppm	25	25	25
17	Measured Concentration of Nox	mg/Nm3	---	24.7	---	ND	ND

N.D= Not Detectable

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Rajkot

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 591/02/2015-16

Date : 02/03/2016

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 8	S - 9	S - 16	S - 20	S - 22	S - 23
01	Date of Sampling	—	16/02/2016	09/02/2016	09/02/2016	15/02/2016	10/02/2016	15/02/2016
02	Time of sampling	Hr.	9.40	9.20	11.15	9.15	10.00	11.00
03	Stack Attached to	—	Common stack Mg Convertor-I&II	Zn Coating - I	Zn Coating - II	Zn Coating - III	Mg Convertor - III	Zn Coating - IV & V
04	Air Pollution Control Measures	—	Bag Filter	Cyclone Seprator & Bag Filter	Cyclone Seprater & Bag Filter	Cyclone, Separator & Bag Filter	Bag Filter	Cyclone Separator & Bag Filter
05	Stack Height	Meter	30	30	30	30	30	30
06	Stack Diameter	Meter	0.5	0.6	0.6	0.6	0.5	0.9
07	Stack Temperature	°C	45	42	44	40	56	37
08	Ambient Temperature	°C	28	27	29	27	28	29
09	Average Velocity of Flue Gases	m/sec.	25.7	13.7	14.2	14.5	10.9	4.3
10	Isokinetic flow rate for P.M. Sampling	LPM	12	24	25	26	19	18
11	Gaseous Sampling Flow Rate	LPM	2.0	—	—	—	2.0	—
12	Permissible limits for PM	mg/Nm3	150	20 (Zn)	20 (Zn)	20 (Zn)	150	20 (Zn)
13	Measured Concentration of PM	mg/Nm3	37	18 (Zn)	15 (Zn)	17 (Zn)	29	13 (Zn)
14	Permissible limits for SO2	mg/Nm3	40	NA	NA	NA	40	NA
15	Measured Concentration of SO2	mg/Nm3	ND	—	—	—	ND	—
16	Permissible limits for Nox	mg/Nm3	25	NA	NA	NA	25	NA
17	Measured Concentration of Nox	mg/Nm3	2.1	—	—	—	1.7	—

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

N.A=Not Applicable

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 592/02/2015-16

Date : 02/03/2016

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 12	S - 18
01	Date of Sampling	---	06/02/2016	06/02/2016	06/02/2016	06/02/2016	06/02/2016	06/02/2016	06/02/2016	03/02/2016
02	Time of sampling	Hr.	8.45	9.30	10.15	11.45	14.30	15.40	9.10	15.05
03	Stack Attached to	---	Core Shop-I	Core Shop-II	Core Shop-III	Core Shop-IV	Core Shop-V	Core Shop-VI	Core Cleaning & Dusting-I	Core Cleaning & Dusting-II
04	Air Pollution Control Measures	---	---	---	---	---	---	---	Bag Filter	Bag Filter
05	Stack Height	Meter	30	30	30	30	30	30	30	30
06	Stack Diameter	Meter	0.584	0.584	0.584	0.584	0.584	0.584	0.6	0.6
07	Stack Temperature	°C	36	37	38	39	40	42	46	48
08	Ambient Temperature	°C	28	27	27	28	28	28	27	29
09	Average Velocity of Flue Gases	m/sec.	4.6	4.2	4.7	5.7	5.9	5.6	13.8	14.7
10	Isokinetic flow rate for P.M. Sampling	LPM	18	17	19	23	24	23	24	28
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	15	25	20	37	42	28	38	46
14	Permissible limits for SO2	mg/Nm3	40	40	40	40	40	40	40	40
15	Measured Concentration of SO2	mg/Nm3	1.3	1.7	1.9	2.4	1.8	2.1	ND	ND
16	Permissible limits for Nox	mg/Nm3	25	25	25	25	25	25	25	25
17	Measured Concentration of Nox	mg/Nm3	2.9	3.1	2.8	2.1	3.8	2.2	4.8	4.1

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
N.D= Not Detectable

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100

Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2980695 * E-mail : royalenvironment@live.com * admin@royalconsultancy.com

Ref. No. : 593/02/2015-16

Date : 02/03/2016

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 7	S - 10	S - 13	S - 14	S - 16	S - 19	S - 21	S - 24
01	Date of Sampling	---	20/02/2016	Not in operation during visit	13/02/2016	13/02/2016	Not in operation during visit	13/02/2016	Not in operation during visit	Not in operation during visit
02	Time of sampling	Hr.	16.00		9.10	10.15		11.35		
03	Stack Attached to	---	Sand Reclamation	Barrel Grinding - I	Annealing Furnace - I	Annealing Furnace - II	Barrel Grinding - II	Annealing Furnace - III	Barrel Grinding-III	Barrel Grinding -IV&V
04	Air Pollution Control Mpasures	---	Bag Filter	Bag Filter	---	---	Bag Filter	---	Bag Filter	Bag Filter
05	Stack Height	Meter	30	30	32	32	30	32	30	30
06	Stack Diameter	Meter	0.9	0.6	1.375	1.375	0.6	1.375	0.5	0.5
07	Stack Temperature	°C	67	...	163	105	...	168	...	...
08	Ambient Temperature	°C	30	...	27	29	...	29	...	...
09	Average Velocity of Flue Gases	m/sec.	14.2	...	5.2	5.5	...	5.4	...	
10	Isokinetic flow rate for P.M. Sampling	LPM	22	...	15	16	...	16	...	...
11	Gaseous Sampling Flow Rate	LPM	2.0	...	2.0	2.0	...	2.0	...	...
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	39	...	15	10	...	12	...	...
14	Permissible limits for SO2	mg/Nm3	40	40	100 (PPM)	100 (PPM)	40	100 (ppm)	40	40
15	Measured Concentration of SO2	mg/Nm3	7.2	...	3.8	4.2	...	3.5	...	...
16	Permissible limits for Nox	mg/Nm3	25	25	50 (PPM)	50 (PPM)	25	50 (PPM)	25	25
17	Measured Concentration of Nox	mg/Nm3	14.3	...	8.3 (PPM)	8.8 (PPM)	...	7.6 (PPM)	...	...

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively. N.D= Not Detectable
Instrument Used : Stack Monitoring Kit - Eectech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No : 394/02/2016-16

Date : 02/03/2016

STACK EMISSION MONITORING RESULTS
Pipe Plant (SDP-2) (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 7	S - 8
01	Date of Sampling	---	16/02/2016	17/02/2016	17/02/2016	17/02/2016	16/02/2016	16/02/2016	Not in operation during visit	05/02/2016
02	Time of sampling	Hr.	9.25	9.10	10.30	11.40	10.35	11.40		11.00
03	Stack Attached to	---	Magnesium Treatment	Socket Cleaning	Annealing Furnace - I	Annealing Furnace - II	Zinc Coating	Tri- Grinding Section	Pre & Post Heating	Zinc Coating Machine
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	---	---	Bag Filter	Bag Filter	---	---
05	Stack Height	Meter	30	30	45	45	30	30	30	30
06	Stack Diameter	Meter	1.00	0.50	0.85	0.85	1.00	1.00	0.85	1.20
07	Stack Temperature	°C	44	35	142	139	38	36	---	36
08	Ambient Temperature	°C	27	27	28	28	28	30	---	29
09	Average Velocity of Flue Gases	m/sec	4.2	3.7	4.6	4.2	3.9	4.5	---	3.5
10	Isokinetic flow rate for PM Sampling	LPM	17	15	14	13	16	18	---	14
11	Gaseous Sampling Flow Rate	LPM	---	---	2.0	2.0	---	---	---	---
12	Permissible limits for PM	mg/Nm³	50	50	50	50	50	50	50	50
13	Measured Concentration of PM	mg/Nm³	35	14	10	12	22 (Zn)	16	---	11
14	Permissible limits for SO2	PPM	NA	NA	100	100	NA	NA	NA	NA
15	Measured Concentration of SO2	PPM	---	---	2.7	3.2	---	---	---	---
16	Permissible limits for NOx	PPM	NA	NA	50	50	NA	NA	NA	NA
17	Measured Concentration of NOx	PPM	---	---	4.2	4.8	---	---	---	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

ND= Not Detectable
N.A= Not Applicable

Royal Environment Auditing & Consultancy Service

Royal Environment Auditing & Consultancy Rajkot

Manoj
Analyst

Ref. No. : 595/02/2015-16

Date : 02/03/2016

Form No. 37

(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant.: Sintor Plant-2 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID:29017)

2 Raw materials, by products and finished products involved in the process. TOTAL DUST

3 Particulars of sampling

Date of Sampling : 16th February, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remarks	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Sinter Plant At First Floor	Total Dust	Personal Respirable Dust sampler IAS 001	02	3-5	4.0	10	Gravimetric	4	----	Manoj	Mr. MANOJ SONRAT

Instruments used : Envirotech make personal sampler, Model No. IAS 001

Calibration Due on. : 02/11/2016

For. Royal Environment Auditing & Consultancy Service

Authorized Sign

Royal Environment Auditing & Consultancy Rajkot

259

Ref. No. : 596/02/2015-16

Date : 02/03/2016

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant.: Sinter Plant-1 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID: 35456)

2 Raw materials, by products and finished products involved in the process. TOTAL DUST

3 Particulars of sampling

Date of Sampling : 16th February, 2016

Sr. No	Location Operation monitored	Identified Contaminato	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature of person taking samples	Name (In block letters)
				Number of sample	Range	Average	mg/m3					
1	Sinter Plant At First Floor	Total Dust	Personal Respirable Dust sampler IAS 001	02	3-4	3.5	10	Gravimetric	4	—	manoj	Mr. MANOJ SONRAT

Instruments used : Envirotech make personal sampler, Model No. IAS 001

Calibration Due on. : 02/11/2016

For. Royal Environment Auditing & Consultancy Service

Authorized Sign

Royal Environment Auditing & Consultancy Service Rajkot

260

Ref. No. : 597/02/2015-16

Date : 02/03/2016

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(a).

1 Name of the Department/Plant.: BF Plant-1 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID: 16037)

2 Raw materials, by products and finished products involved in the process. TOTAL DUST & CO.

3 Particulars of sampling

Date of Sampling : 16th February, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	BF Plant (Cast House)	CO	Personal Respirable Dust sampler IAS 001	02	17-19	18.0	55	Gravimetric	4	----	Manoj	Mr. MANOJ SONRAT
		Total Dust			4-6	5.0	10					

Instruments used : Envirotech make personal sampler, Model No. IAS 001
Calibration Due on. : 02/11/2016

For, Royal Environment Auditing & Consultancy Service

Authorized Sign

Royal Environment Auditing & Consultancy Service
Rajkot

Ref. No. : 598/02/2015-16

Date : 02/03/2016

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant : BF Plant-2 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID: 29026)

2 Raw materials, by products and finished products involved in the process. TOTAL DUST & CO.

3 Particulars of sampling

Date of Sampling : 16th February, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Refrance Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	BF Plant (Cast House)	CO	Personal Respirable Dust sampler IAS 001	02	16-18	17.0	55	Gravimetric	5	---	manoj	Mr. MANOJ SONRAT
		Total Dust			3-6	4.5	10					

Instruments used : Envirotech make personal sampler, Model No. IAS 001

Calibration Due on. : 02/11/2016

For, Royal Environment Auditing & Consultancy Service

Authorized Sign

Royal Environment Auditing & Consultancy Service Rajkot

Ref. No. : 599/02/2015-16

Date : 02/03/2016

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant.: DISP,JCO & Coating Units at JINDAL SAW LIMITED, Samaghogha.(GPCB ID: 18036)

2 Raw materials, by products and finished products involved in the process: TOTAL DUST

3 Particulars of sampling

Date of Sampling : 17th & 18th February, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reforance Method	Number of workers exposed at the location being monitored	Remark	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Spiral Plant (Nr. ID/OD)	Total Dust	Personal Respirable Dust sampler IAS 001	02	1-5	3.0	10	Gravimetric	4	----	Manoj	Mr. MANOJ SONRAT
2	JCO Plant (Nr. JCO Press)	Total Dust		02	2-8	5.0	10	Gravimetric	3	----		
3	Coating Plant-1 (Shot Blasting Area)	Total Dust		02	4-5	4.5	10	Gravimetric	4	----		
4	CCM Area (SDP / DISP)	Total Dust		02	5-6	5.5	10	Gravimetric	5	----		
5	Coating Plant-2 (Shot Blasting Area)	Total Dust		02	4-7	6.5	10	Gravimetric	3	----		
6	CCM Area (SDP-2)	Total Dust		02	5-8	6.5	10	Gravimetric	4	----		

Instruments used : Envirotech make personal sampler, Model No. IAS 001

Calibration Due on. : 02/11/2016.

For, Royal Environment Auditing & Consultancy Service

Authorized Sign

Royal Environment Auditing & Consultancy Service ★ Rajkot

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 600/02/2015-16

Date : 02/03/2016

WORK ZONE NOISE LEVEL MEASUREMENT

SINTER PLANT- 1 (GPCB ID:35456)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 21st February, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
1	Inside Control Room	43.9	49.6	45.9
2	Inside Mechanical Room	50.1	55.9	51.8
3	Inside Electrical Room	48.7	54.3	50.3
4	Inside Plant Office	53.1	60.8	55.2

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Royal Environment Auditing & Cons. Rajkot

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 601/02/2015-16

Date : 02/03/2016

WORK ZONE NOISE LEVEL MEASUREMENT
BLAST FURNACE- 1 (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 21st February, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Nr. Stock House	66.1	76.7	69.1
02.	Inside Control Room	47.5	56.1	49.8
03.	Inside Control room of Cast House	48.7	53.4	50.4
04.	Inside Laboratory	44.9	50.1	46.1
05.	Inside Control Room of Blower House	58.2	64.7	61.2
06.	Inside Control Room of CPP	54.9	63.9	56.7

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Manoj
Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 602/02/2015-16

Date : 02/03/2016

WORK ZONE NOISE LEVEL MEASUREMENT
PIPE PLANT (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 21st February, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room of Annealing Furnace of DISP / SDP	50.8	55.6	53.4
02	Inside Control Room – Mill Area of Spiral Plant	62.3	66.2	63.5
03	Nr. Pipe Cutting Area of Spiral Plant	69.5	79.3	73.3
04	Inside JCO Plant	66.7	77.8	69.2
05	Inside DISP / SDP Plant	70.9	81.3	75.4
06	Inside Coating Plant	67.4	76.2	72.2
07	Nr. CCM SDP-2	66.2	74.5	68.9
08	Inside Control Room of Annealing Furnace of SDP-2	52.5	56.3	53.7
09	Nr. Zinc Coating SDP-2	68.7	79.8	74.6
10	Near Mould Shop	78.3	89.6	80.5

Instruments used : Sound level meter, Model ; SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

266

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 603/02/2015-16

Date : 02/03/2016

AMBIENT NOISE LEVEL MEASUREMENT

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 22nd February, 2016

Sr. No.	Location of Sampling	Value in dB(A) Day Time			Value in dB(A) Night Time		
		Min.	Max.	Leq	Min.	Max.	Leq
01.	Admin. Building	44.6	52.3	45.6	39.7	45.6	41.5
02.	Old Colony	38.7	43.4	40.3	35.5	41.2	36.4
03.	Nr. LPG Yard	54.5	62.8	55.7	50.8	56.7	52.2
04.	New Colony (School)	39.5	45.9	41.2	36.3	40.8	37.2
05.	Nr. SDP-2	58.8	66.3	59.7	55.4	61.6	57.3
06.	Nr. Coating Plant	56.3	65.4	60.6	53.7	63.3	56.6
07.	Nr. Gate No. 2	57.8	64.7	59.2	51.4	59.2	52.9
08.	Nr. Sinter Plant-1	62.5	67.2	63.2	55.7	61.4	57.4
09.	Nr. Sinter Plant-2	59.6	68.3	61.8	56.8	62.7	58.3
10.	Nr. Blast Furnace-1	58.5	62.8	59.3	53.7	60.5	55.2
11.	Nr. Blast Furnace-2	57.6	63.2	58.5	47.2	53.4	50.7
12.	Nr. Main Gate (Security Office)	45.4	54.4	47.3	41.6	46.8	43.2

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.:+91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 604/02/2015-16

Date : 02/03/2016

WORK ZONE NOISE LEVEL MEASUREMENT
BLAST FURNACE - 2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 21st February, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	59.3	64.8	60.7
02.	Nr. Stock House	66.7	71.4	68.3
03.	C/R Blower House	67.5	76.2	70.6

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Manoj
Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.:+91 281 2360595 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 605/02/2015-16

Date : 02/03/2016

WORK ZONE NOISE LEVEL MEASUREMENT

SINTER PLANT - 2 (29017)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 21st February, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	52.6	54.8	53.4
02.	Inside Operator Room	61.5	66.9	62.8
03.	Near Proportioning Bulding	65.2	67.8	66.7
04.	Near Crusher House	69.8	77.7	72.3

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)
Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB,
Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Environment Auditing & Co. Rajkot

manoj
Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360595 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 606/02/2015-16

Date : 02/03/2016

REPORT OF DOMESTIC WASTE WATER ANALYSIS

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Source of Sample Collection : Sewage Treatment Plant (Inlet & Outlet)

Date of Sampling : 26/02/2016

Test Method : As per IS Standards - 3024

Sr. No.	Parameters	Unit	GPCB limits for Treated Effluent	Raw Sewage	Treated Effluent
01.	pH	pH Unit	----	7.52	7.29
02.	BOD (3 Days at 27°C)	mg/l	<20	186	13
03	Total Dissolve Solid	mg/l	...	1693	1854
04	COD	mg/l	...	278	45
05	Total Suspended Solid	mg/l	<30	306	22
06	Oil & Grease	mg/l	...	ND	ND
07	Residual Chlorine	mg/l	Min. 0.5	----	0.60

ND=Not Detectable

Royal Environment Auditing & Consultancy Service

Royal Environment Auditing & Consultancy Service Rajkot

mamoj
Analyst

270

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 571/02/2016-16

Date : 02/03/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - FEBRUARY : 2016

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/6/10/23

Sr. No.	Particulars	Unit	Location No.1 : Security Main Gate (S)							
01.	No. of Week	----	01		02		03		04	
02.	Date & Time Starting of Monitoring	----	03/02/2016; 08.20	06/02/2016; 08.10	09/02/2016; 08.00	12/02/2016; 08.30	15/02/2016; 08.15	19/02/2016; 08.00	22/02/2016; 08.25	26/02/2016; 08.10
03.	Date & Time Ending of Monitoring	----	04/02/2016; 08.20	07/02/2016; 08.10	10/02/2016; 08.00	13/02/2016; 08.30	16/02/2016; 08.15	20/02/2016; 08.00	23/02/2016; 08.25	27/02/2016; 08.10
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	---	NNE	NE	NW	NE	NNW	NNE	NNE	NNW
06.	Average Wind Speed	Km/Hr.	1.5	3.0	1.7	2.7	2.7	2.7	2.2	2.1
07.	Average flow rate for Dust Monitoring PM10	m3/min.	1.21	1.19	1.20	1.22	1.18	1.20	1.19	1.21
08.	Average flow rate for Dust Monitoring PM2.5	m3/hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
09.	Average flow rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible limits for PM10*	µg/m3	100	100	100	100	100	100	100	100
11.	Measured Concentration of PM10	µg/m3	40	34	43	39	46	37	40	45
12.	Permissible limits for PM2.5*	µg/m3	60	60	60	60	60	60	60	60
13.	Measured Concentration of PM2.5	µg/m3	19	15	21	16	22	18	17	20
14.	Permissible limits for SO_2*	µg/m3	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO_2	µg/m3	4.8	4.1	3.8	3.4	4.2	3.9	4.8	4.3
16.	Permissible limits for NO_2*	µg/m3	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO_2	µg/m3	14.9	14.3	15.2	16.1	14.8	15.4	12.7	13.2
18.	Permissible limit for CO **	µg/m3	2000	2000	2000	2000	2000	2000	2000	2000
19.	Measured Concentration of CO	µg/m3	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

B.D.L.= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009.

Royal Environment Auditing & Consultancy Service

Rajkot

Manoj
Analyst

271

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 572/02/2015-16

Date : 02/03/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - FEBRUARY : 2016

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch.

Test Method : As per IS Standards - 5182_2/6/10/23

Sr. No.	Particulars	Unit	Location No.2 : Sinter plant - 1 (NNW)							
01.	No. of Week	----	01		02		03		04	
02.	Date & Time Starting of Monitoring	----	03/02/2016; 08.35	06/02/2016; 08.25	09/02/2016; 08.20	12/02/2016; 08.50	15/02/2016; 08.35	19/02/2016; 08.25	22/02/2016; 08.45	26/02/2016; 08.25
03.	Date & Time Ending of Monitoring	----	04/02/2016; 08.35	07/02/2016; 08.25	10/02/2016; 08.20	13/02/2016; 08.50	16/02/2016; 08.35	20/02/2016; 08.25	23/02/2016; 08.45	27/02/2016; 08.25
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	NNE	NE	NW	NE	NNW	NNE	NNE	NNW
06.	Average Wind Speed	Km/Hr.	1.5	3.0	1.7	2.7	2.7	2.7	2.2	2.1
07.	Average flow rate for Dust Monitoring PM_{10}	m3/min.	1.15	1.19	1.17	1.12	1.12	1.14	1.18	1.2
08.	Average flow rate for Dust Monitoring $PM_{2.5}$	m3/hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
09.	Average flow rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible limits for PM_{10}*	µg/m3	100	100	100	100	100	100	100	100
11.	Measured Concentration of PM_{10}	µg/m3	42	36	40	49	48	43	38	35
12.	Permissible limits for $PM_{2.5}$*	µg/m3	60	60	60	60	60	60	60	60
13.	Measured Concentration of $PM_{2.5}$	µg/m3	20	16	17	22	23	18	24	22
14.	Permissible limits for SO_2*	µg/m3	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO_2	µg/m3	7.1	6.5	6.1	4.8	3.2	3.7	3.8	4.2
16.	Permissible limits for NO_2*	µg/m3	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO_2	µg/m3	15.8	16.4	16.9	15.7	16.1	16.8	14.9	13.8
18.	Permissible limit for CO **	µg/m3	2000	2000	2000	2000	2000	2000	2000	2000
19.	Measured Concentration of CO	µg/m3	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

B.D.L= Below Detectable Limit

*Permissible Limits are as pat NAAQ Standard 16th November 2009.

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 573/02/2015-16

Date : 02/03/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - FEBRUARY : 2016

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/6/10/23

Sr. No.	Particulars	Unit	Location No.3 : Nr. Work Shop Spiral-II (W)							
01.	No. of Week	----	01		02		03		04	
02.	Date & Time Starting of Monitoring	---	03/02/2016; 08.55	06/02/2016; 08.40	09/02/2016; 08.35	12/02/2016; 09.10	15/02/2016; 08.50	19/02/2016; 08.45	22/02/2016; 09.00	26/02/2016; 08.40
03.	Date & Time Ending of Monitoring	---	04/02/2016; 08.55	07/02/2016; 08.40	10/02/2016; 08.35	13/02/2016; 09.10	16/02/2016; 08.50	20/02/2016; 08.45	23/02/2016; 09.00	27/02/2016; 08.40
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	NNE	NE	NW	NE	NNW	NNE	NNE	NNW
06.	Average Wind Speed	Km/Hr.	1.8	3.0	1.7	2.7	2.7	2.7	2.2	2.1
07.	Average flow rate for Dust Monitoring PM10	m3/min.	1.22	1.20	1.18	1.21	1.20	1.17	1.15	1.16
08.	Average flow rate for Dust Monitoring PM2.5	m3/hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
09.	Average flow rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible limits for PM10*	µg/m3	100	100	100	100	100	100	100	100
11.	Measured Concentration of PM10	µg/m3	34	31	38	33	30	40	42	39
12.	Permissible limits for PM2.5*	µg/m3	60	60	60	60	60	60	60	60
13.	Measured Concentration of PM2.5	µg/m3	12	16	13	15	18	22	14	16
14.	Permissible limits for SO_2*	µg/m3	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO_2	µg/m3	2.2	2.9	3.2	3.6	4.3	4.8	3.3	4.1
16.	Permissible limits for NO_2*	µg/m3	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO_2	µg/m3	13.9	12.3	13.8	14.9	13.7	14.3	11.7	11.4
18.	Permissible limit for CO **	µg/m3	2000	2000	2000	2000	2000	2000	2000	2000
19.	Measured Concentration of CO	µg/m3	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.

Instrument used : (1) 3 Nos. RDS (APM - 217 BL). (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

As Calibration due on : 25/05/2016

B.D.L= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009.

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.:+91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 574/02/2015-16

Date : 02/03/2016

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/6/10/23

Sr.No.	Particulars	Unit	AAQM - 1 (S)	AAQM - 2 (SSW)	AAQM - 3 (WSW)	AAQM - 4 (NW)
01.	Location of Ambient	----	Old Colony (Nr. Environment Laboratory)	Nr. Rain Water Harvesting	LPG Yard (Nr. Water Reservoir)	Between Sinter - 2 & Spiral - 2
02.	Date of sampling	----	11/02/2016	11/02/2016	12/02/2016	12/02/2016
03.	Time of sampling	----	8.30	8.50	8.45	9.05
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	NNW	NNW	NNE	NNE
06.	Average Wind Speed	Km/Hr.	1.7	1.7	2.3	2.3
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	µg/m3	100	100	100	100
10.	Measured Concentration of PM 10	µg/m3	29	43	48	36
11.	**Permissible limits for PM 2.5***	µg/m3	60	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	13	19	22	17
13.	**Permissible limits for SO_2***	µg/m3	80	80	80	80
14.	Measured Concentration of SO_2	µg/m3	1.8	2.6	3.4	3.1
15.	**Permissible limits for NO_2***	µg/m3	80	80	80	80
16.	Measured Concentration of NO_2	µg/m3	8.3	11.5	10.3	9.5
17.	**Permissible limit for CO ****	µg/m3	2000	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL	BDL

Instrument used : (1) Ecotech make 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampling Kit (APM 109), & 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009.

Royal Environment Auditing & Consultancy Service

Analyst

274

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2380695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 575/02/2015-16

Date : 02/03/2016

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/6/10/23

Sr. No.	Particulars	Unit	AAQM - 5 (NE)	AAQM - 6 (SE)	AAQM - 7 (ESE)	AAQM - 8 (E)
01.	Location of Ambient	----	Labour Colony	New Colony (Shopping Centre)	VIP Guest House	Weigh bridge
02.	Date of sampling	----	13/02/2016	13/02/2016	14/02/2016	14/02/2016
03.	Time of sampling	----	9.00	9.20	9.15	9.35
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	NNE	NNE	NE	NE
06.	Average Wind Speed	Km/Hr.	1.0	1.0	2.7	2.7
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	µg/m3	100	100	100	100
10.	Measured Concentration of PM 10	µg/m3	44	31	37	50
11.	**Permissible limits for PM 2.5***	µg/m3	60	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	21	18	16	24
13.	**Permissible limits for SO_2***	µg/m3	80	80	80	80
14.	Measured Concentration of SO_2	µg/m3	4.5	2.8	3.5	7.4
15.	**Permissible limits for NO_2***	µg/m3	80	80	80	80
16.	Measured Concentration of NO_2	µg/m3	10.9	11.4	14.5	16.9
17.	**Permissible limit for CO ****	µg/m3	2000	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL	BDL

Instrument used : (1) Ecotech make 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampling Kit (APM 109), & 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009.

Royal Environment Auditing & Consultancy Service

Manoj

275

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. :576/02/2016-16

Date : 02/03/2016

FUGITIVE EMISSION MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23/22

Sr. No.	Particulars	Unit	A - 1	A - 2	A - 3
01.	Location of Ambient	----	RMH Junction House	RMH Stock House	Sinter RMH Yard
02.	Date of sampling	----	17/02/2016	17/02/2016	18/02/2016
03.	Time of sampling	----	8.15	8.35	8.00
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	----	NNW	NNW	NNE
06.	Average Wind Speed	Km/Hr.	4.2	4.2	4.6
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m3	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m3	1381	1243	1108
11.	Permissible limits for SO2*	µg/m3	150	150	150
12.	Measured Concentration of SO2	µg/m3	12.9	11.8	13.7
13.	Permissible limits for NO2*	µg/m3	120	120	120
14.	Measured Concentration of NO2	µg/m3	25.8	26.3	24.9
15.	Permissible limit for CO**	µg/m3	2000	2000	2000
16.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL
17.	Permissible limit for Pb*	µg/m3	2	2	2
18.	Measured Concentration of Pb	µg/m3	ND	ND	ND

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampler (APM 109)
All Calibration due on : 25/05/2016

BDL= Below Detectable Limit
ND= Not Detectable

Royal Environment Auditing & Consultancy Service

Analyst

276

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. :577/02/2015-16

Date : 02/03/2016

FUGITIVE EMISSION MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23/22

Sr. No.	Particulars	Unit	A - 4	A - 5	A - 6
01.	Location of Ambient	----	Sinter 2 Ground Hopper	DISP "CCM" Area	BF CAST HOUSE
02.	Date of sampling	----	18/02/2016	19/02/2016	19/02/2016
03.	Time of sampling	----	8.20	8.10	8.30
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	----	NNE	NNE	NNE
06.	Average Wind Speed	Km/Hr.	4.6	4.6	4.6
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m3	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m3	746	513	950
11.	Permissible limits for SO2*	µg/m3	150	150	150
12.	Measured Concentration of SO2	µg/m3	10.7	14.8	11.4
13.	Permissible limits for NO2*	µg/m3	120	120	120
14.	Measured Concentration of NO2	µg/m3	21.6	27.6	25.2
15.	Permissible limit for CO **	µg/m3	2000	2000	2000
16.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL
17.	Permissible limit for Pb*	µg/m3	2	2	2
18.	Measured Concentration of Pb	µg/m3	ND	ND	ND

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampler (APM 109)
All Calibration due on : 25/05/2016

BDL = Below Detectable Limit
ND = Not Detectable

Royal Environment Auditing & Consultancy Service

manoj
Analyst

277

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref No : 621/03/2015-16

Date : 31/03/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - MARCH : 2016

Name of company : JINDAL SAW LIMITED
Village: Samaghoghe,
Tal. : Mundra, Dist. Kutch

Test Method As per IS Standards - 5182_2/6/10/23

Sr. No.	Particulars	Unit	Location No.1 : Security Main Gate (S)								
01.	No. of Week	---	01		02		03		04		05
02.	Date & Time Starting of Monitoring	---	01/03/2016; 08.00	04/03/2016; 08.15	07/03/2016; 08.10	11/03/2016; 08.20	14/03/2016; 08.05	18/03/2016; 08.15	21/03/2016; 08.20	25/03/2016; 08.30	28/03/2016; 08.25
03.	Date & Time Ending of Monitoring	---	02/03/2016; 08.00	05/03/2016; 08.15	08/03/2016; 08.10	12/03/2016; 08.20	15/03/2016; 08.05	19/03/2016; 08.15	22/03/2016; 08.20	26/03/2016; 08.30	29/03/2016; 08.25
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00
05	Dominant Wind Direction (From)	---	N	W	NNW	NW	NNW	NW	WNW	WNW	N
06.	Average Wind Speed	Km/Hr.	3.1	3.0	1.3	3.6	2.3	3.7	4.9	7.0	6.4
07	Average flow rate for Dust Monitoring PM10	m3/min	1.22	1.18	1.19	1.17	1.16	1.21	1.22	1.2	1.21
08	Average flow rate for Dust Monitoring PM2.5	m3/hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
09	Average flow rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible limits for PM10*	µg/m3	100	100	100	100	100	100	100	100	100
11.	Measured Concentration of PM10	µg/m3	46	40	48	44	51	42	45	50	35
12.	Permissible limits for PM2.5*	µg/m3	60	60	60	60	60	60	60	60	60
13	Measured Concentration of PM2.5	µg/m3	23	20	19	21	18	22	23	18	14
14	Permissible limits for SO_2*	µg/m3	80	80	80	80	80	80	80	80	80
15	Measured Concentration of SO_2	µg/m3	3.9	3.2	3.1	2.8	3.8	3.3	4.1	3.6	2.6
16.	Permissible limits for NO_2*	µg/m3	80	80	80	80	80	80	80	80	80
17	Measured Concentration of NO_2	µg/m3	13.8	13.2	14.1	14.9	13.7	14.3	11.6	12.1	11.1
18	Permissible limit for CO **	µg/m3	2000	2000	2000	2000	2000	2000	2000	2000	2000
19	Measured Concentration of CO	µg/m3	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.

Instrument used : (1) 3 Nos. RDS (APM - 217 Bll), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration dtd on : 25/06/2015

*Permissible Limits are as per NAAQ Standard 16th November 2009.

B.D.L.= Below Detectable Limit

Royal Environment Auditing & Consultancy Service

Analyst

278

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No : 522/03/2015-16

Date : 31/03/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - MARCH : 2016

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/5/10/23

Sr. No.	Particulars	Unit	Location No.2 : Sinter plant - 1 (NNW)								
01.	No. of Week	----	01		02		03		04		05
02	Date & Time Starting of Monitoring	---	01/03/2016; 08.20	04/03/2016; 08.35	07/03/2016; 08.30	11/03/2016; 08.40	14/03/2016; 08.25	18/03/2016; 08.35	21/03/2016; 08.45	25/03/2016; 08.50	28/03/2016; 08.45
03	Date & Time Ending of Monitoring	---	02/03/2016; 08.20	05/03/2016; 08.35	08/03/2016; 08.30	12/03/2016; 08.40	15/03/2016; 08.25	19/03/2016; 08.35	22/03/2016; 08.45	26/03/2016; 08.50	29/03/2016; 08.45
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00
05	Dominant Wind Direction (From)	---	N	W	NNW	NW	NNW	NW	WNW	WNW	N
06	Average Wind Speed	Km/Hr.	3.1	3.0	1.3	3.6	2.3	3.7	4.9	7.0	6.4
07.	Average flow rate for Dust Monitoring PM10	m3/min.	1.16	1.17	1.19	1.15	1.14	1.13	1.16	1.15	1.14
08.	Average flow rate for Dust Monitoring PM2.5	m3/hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
09.	Average flow rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10	**Permissible limits for PM10***	**µg/m3**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
11.	Measured Concentration of PM10	µg/m3	51	48	48	53	56	49	45	42	40
12	**Permissible limits for PM2.5***	**µg/m3**	**60**	**60**	**60**	**60**	**60**	**60**	**60**	**60**	**60**
13.	Measured Concentration of PM2.5	µg/m3	23	20	22	24	21	16	21	20	18
14	**Permissible limits for SO_2***	**µg/m3**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**
15.	Measured Concentration of SO_2	µg/m3	6.4	5.9	5.4	4.9	4.6	4.9	4.1	4.7	5.2
16.	**Permissible limits for NO_2***	**µg/m3**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**	**80**
17	Measured Concentration of NO_2	µg/m3	14.7	14.5	15.8	14.8	15.5	16.2	13.8	12.7	11.8
18	**Permissible limit for CO ** **	**µg/m3**	**2000**	**2000**	**2000**	**2000**	**2000**	**2000**	**2000**	**2000**	**2000**
19	Measured Concentration of CO	µg/m3	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.

Instrument used : (1) 3 Nos. RDS (APM - 217 DL), (2) 3 Nos. of Gaseous Sampler (AAS 108) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/03/2016

B.D.L= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009

Royal Environment Auditing & Consultancy Service

Analyst

279

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref No : 623/03/2015-16

Date : 31/03/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - MARCH : 2016

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/5/10/23

Sr. No.	Particulars	Unit	Location No.3 : Nr. Work Shop Spiral-II (W)								
01.	No. of Week	---	01		02		03		04		05
02	Date & Time Starting of Monitoring	---	01/03/2016; 08.40	04/03/2016; 08.55	07/03/2016; 08.50	11/03/2016; 09.00	14/03/2016; 08.45	16/03/2016; 08.55	21/03/2016; 09.05	25/03/2016; 09.10	28/03/2016; 09.05
03.	Date & Time Ending of Monitoring	---	02/03/2016; 08.40	05/03/2016; 08.55	08/03/2016; 08.50	12/03/2016; 09.00	16/03/2016; 08.45	19/03/2016; 08.55	22/03/2016; 09.05	26/03/2016; 09.10	29/03/2016; 09.05
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00
05	Dominant Wind Direction (From)	---	N	W	NNW	NW	NNW	NW	WNW	WNW	N
06	Average Wind Speed	Km/Hr.	3.1	3.0	1.3	3.6	2.3	3.7	4.9	7.0	6.4
07	Average flow rate for Dust Monitoring PM10	m3/min.	1.23	1.22	1.2	1.22	1.21	1.19	1.18	1.19	1.21
08.	Average flow rate for Dust Monitoring PM2.5	m3/hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
09.	Average flow rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10	**Permissible limits for PM10***	µg/m3	100	100	100	100	100	100	100	100	100
11	Measured Concentration of PM10	µg/m3	31	35	33	39	35	45	37	43	32
12	**Permissible limits for PM2.5***	µg/m3	60	60	60	60	60	60	60	60	60
13.	Measured Concentration of PM2.5	µg/m3	15	13	16	18	20	17	19	13	15
14	**Permissible limits for SO_2***	µg/m3	80	80	80	80	80	80	80	80	80
15	Measured Concentration of SO_2	µg/m3	2.6	3.2	2.1	2.8	3.4	3.9	2.5	3.7	2.7
16.	**Permissible limits for NO_2***	µg/m3	80	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO_2	µg/m3	12.6	11.2	12.7	13.8	12.8	13.2	10.6	10.3	9.7
18	**Permissible limit for CO ***	µg/m3	2000	2000	2000	2000	2000	2000	2000	2000	2000
19.	Measured Concentration of CO	µg/m3	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L	B.D.L

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 29/05/2016

B.D.L.= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 624/03/2015-16

Date : 31/03/2016

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/6/10/23

Sr.No.	Particulars	Unit	AAQM - 1 (S)	AAQM - 2 (SSW)	AAQM - 3 (WSW)	AAQM - 4 (NW)
01.	Location of Ambient	---	Old Colony (Nr. Environment Laboratory)	Nr. Rain Water Harvesting	LPG Yard (Nr. Water Reservoir)	Between Sinter - 2 & Spiral - 2
02.	Date of sampling	---	15/03/2016	15/03/2016	16/03/2016	16/03/2016
03.	Time of sampling	---	8.10	8.30	8.20	8.50
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	---	NNW	NNW	NW	NW
06.	Average Wind Speed	Km/Hr.	2.0	2.0	3.5	3.5
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**100**	**100**	**100**	**100**
10.	Measured Concentration of PM 10	µg/m3	24	37	48	40
11.	**Permissible limits for PM 2.5***	**µg/m3**	**60**	**60**	**60**	**60**
12.	Measured Concentration of PM 2.5	µg/m3	11	15	20	19
13.	**Permissible limits for SO_2***	**µg/m3**	**80**	**80**	**80**	**80**
14.	Measured Concentration of SO_2	µg/m3	1.2	2.2	2.9	2.5
15.	**Permissible limits for NO_2***	**µg/m3**	**80**	**80**	**80**	**80**
16.	Measured Concentration of NO_2	µg/m3	7.2	10.4	9.2	8.4
17.	**Permissible limit for CO ****	**µg/m3**	**2000**	**2000**	**2000**	**2000**
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL	BDL

Instrument used : (1) Ecotech make 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampling Kit (APM 109), & 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009.

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 • E-mail : royalenvironment@live.com • admin@royalconsultancy.com

Ref. No. : 625/03/2015-16

Date : 31/03/2016

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. ; Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_2/6/10/23

Sr. No.	Particulars	Unit	AAQM - 5 (NE)	AAQM - 6 (SE)	AAQM - 7 (ESE)	AAQM - 8 (E)
01.	**Location of Ambient**	---	**Labour Colony**	**New Colony (Shopping Centre)**	**VIP Guest House**	**Weigh bridge**
02.	Date of sampling	---	17/03/2016	17/03/2016	18/03/2016	18/03/2016
03.	Time of sampling	---	8.40	9.10	9.00	9.20
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	---	NW	NW	NW	NW
06.	Average Wind Speed	Km/Hr.	2.1	2.1	3.7	3.7
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**100**	**100**	**100**	**100**
10.	Measured Concentration of PM 10	µg/m3	39	35	42	55
11.	**Permissible limits for PM 2.5***	**µg/m3**	**60**	**60**	**60**	**60**
12.	Measured Concentration of PM 2.5	µg/m3	18	16	21	22
13.	**Permissible limits for SO_2***	**µg/m3**	**80**	**80**	**80**	**80**
14.	Measured Concentration of SO_2	µg/m3	3.8	2.4	2.8	8.5
15.	**Permissible limits for NO_2***	**µg/m3**	**80**	**80**	**80**	**80**
16.	Measured Concentration of NO_2	µg/m3	9.8	10.3	13.4	15.8
17.	**Permissible limit for CO ****	**µg/m3**	**2000**	**2000**	**2000**	**2000**
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL	BDL

Instrument used : (1) Ecotech make 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampling Kit (APM 109), & 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 25/05/2016

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009.

Royal Environment Auditing & Consultancy Service

Analyst

282

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. :626/03/2015-16

Date : 31/03/2016

FUGITIVE EMISSION MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23/22

Sr. No.	Particulars	Unit	A - 1	A - 2	A - 3
01.	**Location of Ambient**	----	**RMH Junction House**	**RMH Stock House**	**Sinter RMH Yard**
02.	Date of sampling	----	12/03/2016	12/03/2016	13/03/2016
03.	Time of sampling	---	8.30	8.50	8.10
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	----	NW	NW	NNW
06.	Average Wind Speed	Km/Hr.	2.4	2.4	0.8
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	**µg/m3**	**3000**	**3000**	**3000**
10.	Measured Concentration of PM 10	µg/m3	1457	1534	1211
11.	**Permissible limits for SO2***	**µg/m3**	**150**	**150**	**150**
12.	Measured Concentration of SO2	µg/m3	13.8	12.7	14.6
13.	**Permissible limits for NO2***	**µg/m3**	**120**	**120**	**120**
14.	Measured Concentration of NO2	µg/m3	26.7	27.2	25.6
15.	**Permissible limit for CO ****	µg/m3	**2000**	**2000**	**2000**
16.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL
17.	**Permissible limit for Pb***	µg/m3	**2**	**2**	**2**
18.	Measured Concentration of Pb	µg/m3	ND	ND	ND

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampler (APM 109)
All Calibration due on : 25/05/2016

BDL= Below Detectable Limit
ND= Not Detectable

Royal Environment Auditing & Consultancy Service

Analyst

283

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. :627/03/2015-16 Date : 31/03/2016

FUGITIVE EMISSION MONITORING REPORT

Name of company : JINDAL SAW LIMITED
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182_Part - 2/6/10/23/22

Sr. No.	Particulars	Unit	A - 4	A - 5	A - 6
01.	**Location of Ambient**	----	**Sinter 2 Ground Hopper**	**DISP "CCM" Area**	**BF CAST HOUSE**
02.	Date of sampling	---	13/03/2016	14/03/2016	14/03/2016
03.	Time of sampling	----	8.30	8.15	8.35
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	----	NNW	NNW	NNW
06.	Average Wind Speed	Km/Hr.	0.8	2.3	2.3
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	**Permissible limits for PM 10***	µg/m3	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m3	920	619	1347
11.	**Permissible limits for SO2***	µg/m3	150	150	150
12.	Measured Concentration of SO2	µg/m3	11.6	15.7	12.3
13.	**Permissible limits for NO2***	µg/m3	120	120	120
14.	Measured Concentration of NO2	µg/m3	22.5	28.4	26.1
15.	**Permissible limit for CO ****	µg/m3	2000	2000	2000
16.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL
17.	**Permissible limit for Pb***	µg/m3	2	2	2
18.	Measured Concentration of Pb	µg/m3	ND	ND	ND

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampler (APM 109)
All Calibration due on : 25/05/2016

BDL= Below Detectable Limit
ND= Not Detectable

Royal Environment Auditing & Consultancy Service

Analyst

284

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 628/03/2015-16

Date : 31/03/2016

Performance Evaluation of Air Pollution Control Equipments

Sinter Plant-1 (GPCB ID 35456)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 6
01	Date of Sampling	---	07/03/2016	Not in operation during visit	05/03/2016	05/03/2016
02	Attached to	---	Fuel & Flux crusher & screening building	Fuel & Flux crushing house	Sinter Furnace	Discharge end
03	Stack Height	Meter	32	27	50	32
04	Stack Diameter	Meter	1.4	1.4	2.0	1.3
05	Stack Temperature	°C	51	---	139	125
06	Ambient Temperature	°C	35	---	29	32
07	Average Velocity of Flue Gases	m/sec.	25.8	---	36.4	31.9
08	IsoKinetic Flowrate for Sampling	LPM	11	---	13	11
09	Inlet	mg/Nm³	2683	---	3984	3455
10	Outlet	mg/Nm³	28	---	53	34
11	Efficiency	%	98.96	---	98.67	99.02

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 28/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

285

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 629/03/2015-16

Date : 31/03/2016

Blast Furnace Plant-1(GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1
01	Date of Sampling	---	16/03/2016
02	**Attached to**	---	**De-dustingSystem**
03	Stack Height	Meter	35
04	Stack Duct Diameter	Meter	1.4
05	Stack Temperature	°C	54
06	Ambient Temperature	°C	29
07	Average Velocity of Flue Gases	m/sec.	15.3
08	IsoKinetic Flowrate for Sampling	LPM	26
09	Inlet	mg/Nm^3	867
10	Outlet	mg/Nm^3	3
11	Efficiency	%	99.65

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Environment Auditing & Consultancy Service Rajkot

286

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360595 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 630/03/2016-16

Date : 31/03/2016

Performance Evaluation of Air Pollution Control Equipments

Sinter Plant-2 (GPCB ID:29017)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist :Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 7	S - 9	S-10
01	Date of Sampling	---	Not in operation during visit	17/03/2016	17/03/2016	08/03/2016	08/03/2016	Not in operation during visit
02	Attached to	---	Fuel crushing de-duster system (Fuel)	Fuel crushing de-duster system (Flux)	Fuel screening deduster system (Flux screening)	Sinter Furnace	Discharging end of Sinter de-dusting System	Pulverised Coal Injection
03	Stack Height	Meter	30	30	30	50	50	32
04	Stack Diameter	Meter	0.7	0.7	0.7	2.0	1.3	1.0
05	Stack Temperature	°C	---	44	48	145	105	---
06	Ambient Temperature	°C	---	35	35	29	34	---
07	Average Velocity of Flue Gases	m/sec.	---	15.3	14.5	38.6	37.9	---
08	IsoKinetic Flowrate for Sampling	LPM	---	27	26	12	14	---
09	Inlet	mg/Nm^3	---	2511	2693	3996	3314	---
10	Outlet	mg/Nm^3	---	18	27	42	29	---
11	Efficiency	%	---	99.28	99.00	98.95	98.12	---

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2380695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 631/03/2015-16

Date : 31/03/2016

Performance Evaluation of Air Pollution Control Equipments
Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 7	S - 8	S - 12	S - 18	S - 22
01	Date of Sampling	---	09/03/2016	14/03/2016	09/03/2016	11/03/2016	14/03/2016
02	Attached to		Sand Reclamation	Common stack Mg Converter - I & II	Core Cleaning & Dusting - I	Core Cleaning & Dusting - II	Mg Converter - III
03	Stack Height	Meter	32	30	30	30	30
04	Stack Diameter	Meter	0.9	0.5	0.6	0.6	0.5
05	Stack Temperature	°C	119	58	56	59	58
06	Ambient Temperature	°C	34	34	29	33	31
07	Average Velocity of Flue Gases	m/sec.	38.4	17.5	16.2	16.7	16.2
08	IsoKinetic Flowrate for Sampling	LPM	14	29	27	28	24
09	Inlet	mg/Nm^3	4015	4423	3841	4031	4298
10	Outlet	mg/Nm^3	44	43	31	40	34
11	Efficiency	%	98.90	99.03	99.19	99.01	99.21

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360685 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 632/03/2015-16

Date : 31/03/2016

Performance Evaluation of Air Pollution Control Equipments
Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 9	S - 10	S - 15	S - 16	S - 20	S - 21	S - 23
01	Date of Sampling	---	10/03/2016	Not in operation during visit	10/03/2016	Not in operation during visit	14/03/2016	Not in operation during visit	14/03/2016
02	Attached to	---	Zinc Coating - I	Barrel Grinding-I	Zinc Coating - II	Barrel Grinding-II	Zinc Coating - III	Barrel Grinding-III	Zinc Coating - IV & V
03	Stack Height	Meter	30	30	30	30	30	30	30
04	Stack Duct Diameter	Meter	0.6	0.6	0.6	0.6	0.6	0.6	0.9
05	Stack Temperature	°C	48	...	50	...	49	...	45
06	Ambient Temperature	°C	29	...	31	...	29	...	34
07	Average Velocity of Flue Gases	m/sec.	15.6	...	16.3	...	27.5	...	12.4
08	IsoKinetic Flowrate for Sampling	LPM	27	...	28	...	12	...	23
09	Inlet	mg/Nm^3	1792	...	1922	...	1871	...	1451
10	Outlet	mg/Nm^3	14	...	16	...	15	...	11
11	Efficiency	%	99.22	...	99.06	...	99.20	...	99.24

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Royal Environment Auditing & Consultancy Service ★ Rajkot

289

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 633/03/2015-16 Date : 31/03/2016

Performance Evaluation of Air Pollution Control Equipments

Pipe Plant (SDP-2) (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 5	S - 6	S-8
01	Date of Sampling	---	18/03/2016	18/03/2016	18/03/2016	22/03/2016
02	Attached to	---	Mg Treatment	Zinc Coating	Tri-Grinding	Zinc Coating machine
03	Stack Height	Meter	30	30	30	30
04	Stack Duct Diameter	Meter	1.00	1.00	1.00	0.8
05	Stack Temperature	°C	60	45	41	39
06	Ambient Temperature	°C	30	34	34	32
07	Average Velocity of Flue Gases	m/sec.	13.2	12.9	12.1	8.7
08	IsoKinetic Flowrate for Sampling	LPM	22	23	21	16
09	Inlet	mg/Nm^3	3051	2949	2731	1479
10	Outlet	mg/Nm^3	31	35	12	20
11	Efficiency	%	98.98	98.81	99.56	98.65

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Rajkot

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 634/03/2015-16 Date : 31/03/2016

Performance Evaluation of Air Pollution Control Equipments

Blast Furnace Plant-2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 4	S - 5
01	Date of Sampling	---	17/03/2016	17/03/2016	17/03/2016
02	Attached to	---	Dedusting System	Coke fine building dust collecting system	Iron Ore fine & Dust Collecting System
03	Stack Height	Meter	40	30	30
04	Stack Duct Diameter	Meter	1.5	0.85	0.65
05	Stack Temperature	°C	62	68	43
06	Ambient Temperature	°C	29	30	34
07	Average Velocity of Flue Gases	m/sec.	38.4	16.1	15.8
08	IsoKinetic Flowrate for Sampling	LPM	16	26	28
09	Inlet	mg/Nm^3	4315	1642	1328
10	Outlet	mg/Nm^3	40	7	4
11	Efficiency	%	99.07	99.57	99.70

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref No. :635/03/2015-16 Date : 31/03/2016

STACK EMISSION MONITORING RESULTS

Sinter Plant - 1(GPCB ID:35456)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6
01	Date of Sampling	---	07/03/2016	Not in operation during visit	05/03/2016	Not Running During Visit	Not Running During Visit	05/03/2016
02	Time of sampling	---	14.45		9.20			11.00
03	Stack Attached to	---	Fuel & Flux Crushor and Screening building	Fuel & Flux Crushing House	Sinter Furnace	Primary Mixture House	Secondary Mixture House	Discharge End
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	ESP	.....	.....	ESP
05	Stack Height	Meter	32.0	27.00	50	19.75	36.06	32
06	Stack Diameter	Meter	1.40	1.40	2.0	1.25	1.25	1.30
07	Stack Temperature	°C	43	....	144	....	....	133
08	Ambient Temperature	°C	35	....	29	....	....	32
09	Average Velocity of Flue Gases	m/sec.	6.1	....	11.8	....	....	17.4
10	Isokinetic flow rate for P.M. Sampling	LPM	25	....	16	....	....	24
11	Gaseous Sampling Flow Rate	LPM	....	....	2.0	....	....	....
12	**Permissible limits for PM**	mg/Nm3	150	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	28	....	53	....	....	34
14	**Permissible limits for SO2**	ppm	NA	NA	100	NA	NA	NA
15	Measured Concentration of SO2	ppm	....	....	ND	....	....	....
16	**Permissible limits for NOx**	ppm	NA	NA	50	NA	NA	NA
17	Measured Concentration of NOx	ppm	....	....	5.4	....	....	....

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively. NA= Not Applicable
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360895 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No : 636/03/2016-16

Date : 31/03/2016

STACK EMISSION MONITORING RESULTS

Sinter Plant -2 (GPCB ID:29017)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255 Part - I/2007

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 7	S - 8	S - 9	S - 10
01	Date of Sampling	—	Not In Operation During The Visit	17/03/2016	17/03/2016	Not In Operation During The Visit	NA	NA	08/03/2016	09/03/2016	09/03/2016	Not In Operation During The Visit
02	Time of sampling	Hr.		16.40	16.50				9.15	10.40	10.50	
03	Stack Attached to	—	Fuel crushing de-dustor system (Flux)	Fuel crushing de-duster system(Fuel)	Fuel Screening deduster System (Flux Screening)	No.1 Transfer Station De-duster System	Primary Mixer De-dustor system	Secondary Mixer De-duster system	Sinter Furnace	Transfer station no. 4 & 5 dedusting system	Discharging End of sinter de-dusting system	Pulverized Coal Injection
04	Air Pollution Control Measures	—	Dust Collector	Dust Collector	Dust Collector	Dust Collector	Dust Collector	Dust Collector	ESP	Dust Collector	ESP	Bag Filter
05	Stack Height	Meter	30	30	30	30	20	30	50	30	60	32
06	Stack Diameter	Meter	0.7	0.7	0.7	0.7	—	—	2	0.7	1.3	1.00
07	Stack Temperature	°C	—	36	37	—	—	—	151	38	115	—
08	Ambient Temperature	°C	—	35	35	—	—	—	29	32	34	—
09	Average Velocity of Flue Gasss	m/sec.	—	10.9	8.2	—	—	—	13.1	6.8	39.6	—
10	Isokinetic flow rate for P.M. Sampling	LPM	—	20	15	—	—	—	17	28	12	—
11	Gaseous Sampling Flow Rate	LPM	—	—	—	—	—	—	2.0	—	—	—
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	—	18	27	—	—	—	42	15	29	—
14	Permissible limits for SO2	ppm	NA	NA	NA	NA	NA	NA	100	NA	NA	100 (ppm)
15	Measured Concentration of SO2	ppm	—	—	—	—	—	—	ND	—	—	—
16	Permissible limits for NOx	ppm	NA	NA	NA	NA	NA	NA	50	NA	NA	50 (ppm)
17	Measured Concentration of NOx	ppm	—	—	—	—	—	—	6.3	—	—	—

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Enotech make - ESS-100
Calibration due on : 25/05/2016

NA= Not Applicable

Royal Environment Auditing & Consultancy Service.

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. :837/03/2015-16

Date : 31/03/2016

STACK EMISSION MONITORING RESULTS

BLAST FURNACE - 2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Taf. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5
01	Date of Sampling	---	17/03/2016	15/03/2016	Monitoring Not Possible	17/03/2016	17/03/2016
02	Time of sampling	Hr.	9.00	8.10		10.40	12.10
03	Stack Attached to	---	Dedusting System	Stove Stack	Flare Stack	Coke fine building dust collecting system	Iron Ore fine & Dust Collecting System
04	Air Pollution Control Measures	---	Bag Filter	---	---	Bag Filter	Bag Filter
05	Stack Height	Meter	40.0	65.0	45	30.0	30.0
06	Stack Diameter	Meter	1.5	2.250	---	---	0.65
07	Stack Temperature	°C	49	223	---	53	38
08	Ambient Temperature	°C	29	27	---	30	34
09	Average Velocity of Flue Gases	m/sec.	32.5	2.9	---	13.2	11.1
10	Isokinetic flow rate for P.M. Sampling	LPM	14	7	---	23	20
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	40	2	---	7	6
14	Permissible limits for SO2	mg/Nm3	NA	NA	NA	NA	NA
15	Measured Concentration of SO2	mg/Nm3	---	---	---	---	---
16	Permissible limits for NOx	mg/Nm3	NA	NA	NA	NA	NA
17	Measured Concentration of Nox	mg/Nm3	---	---	---	---	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively. NA=Not Applicable
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No : 638/03/2015-16 Date : 31/03/2016

STACK EMISSION MONITORING RESULTS

BLAST FURNACE-1 (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5
01	Date of Sampling	---	16/03/2016	16/03/2016	21/03/2016	16/03/2016	Monitoring Not Possible
02	Time of sampling	Hr.	9.30	11.15	15.40	8.20	
03	**Stack Attached to**	---	**Dedusting System**	**Boiler - I**	**Boiler - II**	**Stove Stack**	**Flare Stack**
04	Air Pollution Control Measures	---	Bag Filter	---	---	---	---
05	Stack Height	Meter	35.0	45	45	50.0	30
06	Stack Diameter	Meter	1.5	1.4	1.4	2.25	---
07	Stack Temperature	°C	41	171	173	218	---
08	Ambient Temperature	°C	29	32	34	27	---
09	Average Velocity of Flue Gases	m/sec.	11.6	4.2	4.4	3.2	---
10	Isokinetic flow rate for P.M. Sampling	LPM	21	12	12	6	---
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	---
12	**Permissible limits for PM**	**mg/Nm3**	**150**	**150**	**150**	**150**	**150**
13	Measured Concentration of PM.	mg/Nm3	3	13	15	3	---
14	**Permissible limits for SO2**	**mg/Nm3**	**40**	**40**	**40**	**40**	**40**
15	Measured Concentration of SO2	mg/Nm3	ND	ND	ND	ND	---
16	**Permissible limits for NOx**	**mg/Nm3**	**25**	**25**	**25**	**25**	**25**
17	Measured Concentration of Nox	mg/Nm3	ND	ND	ND	ND	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively. N.D=Not Detectable
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 639/03/2015-16

Date : 31/03/2016

STACK EMISSION MONITORING RESULTS

Captive Power Plant (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4
01	Date of Sampling	---	12/03/2016	12/03/2016	12/03/2016	Not In Operation During The Visit
02	Time of sampling	Hr.	14.00	10.35	11.50	
03	Stack Attached to	---	6000 KVA D.G.	3240 KVA D.G.	3240 KVA D.G.	1180 KVA D.G.
04	Air Pollution Control Measures	---	---	---	---	---
05	Stack Height	Meter	57.0	35	35	35
06	Stack Diameter	Meter	1.984	1.484	1.484	0.980
07	Stack Temperature	°C	273	246	239	---
08	Ambient Temperature	°C	34	31	32	---
09	Average Velocity of Flue Gases	m/sec.	35.4	30.5	32.6	---
10	Isokinetic flow rate for P.M. Sampling	LPM	9	8	9	---
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	58	62	69	---
14	Permissible limits for SO2	ppm	100	100	100	100
15	Measured Concentration of SO2	ppm	33.4	30.5	29.7	---
16	Permissible limits for Nox	ppm	50	50	50	50
17	Measured Concentration of Nox	ppm	26.1	24.2	22.8	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100

Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360002.
Ph.: +91 281 2360695 ■ E-mail : royalenvironment@live.com ◆ admin@royalconsultancy.com

Ref. No. : 640/03/2015-16

Date : 31/03/2016

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255 Part - 1/2/3/7

Sr. No.	Particulars	Unit	S - 11	S - 17	S - 25	S - 26	S - 27
01	Date of Sampling	---	Not In Operation During The Visit	15/03/2016	25/03/2016	25/03/2016	25/03/2016
02	Time of sampling	Hr.		15.15	14.10	15.20	16.35
03	Stack Attached to	---	Bitumin Drying Oven - I	Common stack Bitumin Drying Oven - II & Boiler	Shot Blasing - I	Shot Blasing - II	Shot Blasing - III
04	Air Pollution Control Measures	---	---	---	Bag Filter	Bag Filter	Bag Filter
05	Stack Height	Meter	32.8	32.8	10.0	10.0	10.0
06	Stack Diameter	Meter	1.375	1.375	0.41	0.41	1.125
07	Stack Temperature	°C	---	155	38	38	37
08	Ambient Temperature	°C	---	34	35	35	35
09	Average Velocity of Flue Gases	m/sec.	---	4.8	12.8	12.3	13.6
10	Isokinetic flow rate for P.M. Sampling	LPM	---	14	23	22	24
11	Gaseous Sampling Flow Rate	LPM	---	2.0	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	---	61	26	23	20
14	Permissible limits for SO2	mg/Nm3	100 ppm	100 ppm	40	40	40
15	Measured Concentration of SO2	mg/Nm3	---	27.5	ND	ND	ND
16	Permissible limits for Nox	mg/Nm3	50 ppm	50 ppm	25	25	25
17	Measured Concentration of Nox	mg/Nm3	---	25.8	ND	ND	ND

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively. N.D= Not Detectable
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 641/03/2015-16

Date : 31/03/2016

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Taf. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 8	S - 9	S - 15	S - 20	S - 22	S - 23
01	Date of Sampling	---	14/03/2016	10/03/2016	10/03/2016	14/03/2016	12/03/2016	14/03/2016
02	Time of sampling	Hr.	16.20	9.30	11.50	9.30	10.30	14.10
03	Stack Attached to	---	Common stack Mg Converter-I&II	Zn Coating - I	Zn Coating - II	Zn Coating - III	Mg Converter - III	Zn Coating - IV & V
04	Air Pollution Control Measures	---	Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Separator & Bag Filter	Bag Filter	Cyclone Separator & Bag Filter
05	Stack Height	Meter	30	30	30	30	30	30
06	Stack Diameter	Meter	0.6	0.6	0.6	0.6	0.5	0.9
07	Stack Temperature	°C	48	43	41	44	58	39
08	Ambient Temperature	°C	34	29	31	29	31	34
09	Average Velocity of Flue Gases	m/sec	27.6	13.9	14.6	13.9	10.5	4.6
10	Isokinetic flow rate for P.M. Sampling	LPM	13	25	26	24	18	19
11	Gaseous Sampling Flow Rate	LPM	2.0	---	---	---	2.0	---
12	Permissible limits for PM	mg/Nm3	150	20 (Zn)	20 (Zn)	20 (Zn)	150	20 (Zn)
13	Measured Concentration of PM	mg/Nm3	43	14 (Zn)	18 (Zn)	15 (Zn)	34	11 (Zn)
14	Permissible limits for SO2	mg/Nm3	40	NA	NA	NA	40	NA
15	Measured Concentration of SO2	mg/Nm3	ND	---	---	---	ND	---
16	Permissible limits for Nox	mg/Nm3	25	NA	NA	NA	25	NA
17	Measured Concentration of Nox	mg/Nm3	1.9	---	---	---	1.4	---

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

N A=Not Applicable

Royal Environment Auditing & Consultancy Service

Analyst

298

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360635 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 642/03/2016-16

Date : 31/03/2016

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 12	S - 18
01	Date of Sampling	—	07/03/2016	07/03/2016	07/03/2016	07/03/2016	07/03/2016	07/03/2016	09/03/2016	11/03/2016
02	Time of sampling	Hrs	8.30	9.15	10.00	10.45	15.10	16.00	9.10	15.05
03	Stack Attached to	—	Core Shop-I	Core Shop-II	Core Shop-III	Core Shop-IV	Core Shop-V	Core Shop-VI	Core Cleaning & Dusting-I	Core Cleaning & Dusting-II
04	Air Pollution Control Measures	—	—	—	—	—	—	—	Bag Filter	Bag Filter
05	Stack Height	Meter	30	30	30	30	30	30	30	30
06	Stack Diameter	Meter	0.584	0.584	0.584	0.584	0.584	0.584	0.6	0.6
07	Stack Temperature	°C	35	36	37	39	39	41	44	46
08	Ambient Temperature	°C	27	28	29	29	34	34	29	33
09	Average Velocity of Flue Gases	m/sec.	4.2	4.5	4.5	5.3	5.6	5.1	13.5	14.2
10	Isokinetic flow rate for P.M. Sampling	LPM	17	18	18	22	23	21	24	25
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	19	21	27	31	46	35	31	40
14	Permissible limits for SO2	mg/Nm3	40	40	40	40	40	40	40	40
15	Measured Concentration of SO2	mg/Nm3	1.6	2.2	2.4	2.9	1.5	2.7	ND	ND
16	Permissible limits for Nox	mg/Nm3	25	25	25	25	25	25	25	25
17	Measured Concentration of Nox	mg/Nm3	3.6	3.8	2.5	3.7	3.2	2.9	4.2	3.9

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively. N.D= Not Detectable

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100

Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref No : 643/03/2015-16

Date : 31/03/2016

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 7	S - 10	S - 13	S - 14	S - 16	S - 18	S - 21	S - 24
01	Date of Sampling	—	09/03/2016	Not in operation during visit	11/03/2016	11/03/2016	Not in operation during visit	11/03/2016	Not in operation during visit	Not in operation during visit
02	Time of sampling	Hr.	15.15		9.30	10.45		14.00		
03	Stack Attached to	—	Sand Reclamation	Barrel Grinding - I	Annealing Furnace - I	Annealing Furnace - II	Barrel Grinding - II	Annealing Furnace - III	Barrel Grinding-III	Barrel Grinding -IV&V
04	Air Pollution Control Measures	—	Bag Filter	Bag Filter	---	---	Bag Filter	---	Bag Filter	Bag Filter
05	Stack Height	Meter	30	30	32	32	30	32	30	30
06	Stack Diameter	Meter	0.9	0.6	1.375	1.375	0.6	1.375	0.6	0.6
07	Stack Temperature	°C	64	...	160	163	...	165	...	...
08	Ambient Temperature	°C	34	...	29	32	...	34	...	...
09	Average Velocity of Flue Gases	m/sec.	14.8	...	4.8	6.1	...	5.5	...	...
10	Isokinetic flow rate for P.M. Sampling	LPM	24	...	14	15	...	16	...	...
11	Gaseous Sampling Flow Rate	LPM	2.0	...	2.0	2.0	...	2.0	...	...
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	44	...	18	14	...	20	...	...
14	Permissible limits for SO2	mg/Nm3	40	40	100 (PPM)	100 (PPM)	40	100 (ppm)	40	40
15	Measured Concentration of SO2	mg/Nm3	8.3	...	3.2	3.7	...	4.1	...	...
16	Permissible limits for Nox	mg/Nm3	25	25	50 (PPM)	50 (PPM)	25	50 (PPM)	25	25
17	Measured Concentration of Nox	mg/Nm3	15.4	...	7.5 (PPM)	8.1 (PPM)	...	9.5 (PPM)	...	...

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively. N Da Not Detectable
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

300

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No : 644/03/2016-16

Date : 31/03/2016

STACK EMISSION MONITORING RESULTS
Pipe Plant (SDP-2) (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 7	S - 8
01	Date of Sampling	---	18/03/2016	18/03/2016	19/03/2016	19/03/2016	18/03/2016	18/03/2016	Not in operation during visit	22/03/2016
02	Time of sampling	Hr.	9.45	9.30	10.45	14.50	12.30	15.40		10.50
03	Stack Attached to	—	Magnesium Treatment	Socket Cleaning	Annealing Furnace - I	Annealing Furnace - II	Zinc Coating	Trf- Grinding Section	Pre & Post Slitting	Zinc Coating Machine
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	—	—	Bag Filter	Bag Filter	—	—
05	Stack Height	Meter	30	30	45	45	30	30	30	30
06	Stack Diameter	Meter	1.00	0.60	0.85	0.85	1.00	1.00	0.85	1.20
07	Stack Temperature	°C	42	36	138	135	37	35	—	37
08	Ambient Temperature	°C	30	29	32	34	34	34	—	32
09	Average Velocity of Flue Gases	m/sec	3.9	3.4	4.2	3.9	3.5	2.9	—	4.2
10	Isokinetic flow rate for PM Sampling	LPM	16	14	13	12	14	12	—	17
11	Gaseous Sampling Flow Rate	LPM	—	—	2.0	2.0	—	—	—	—
12	Permissible limits for PM	mg/Nm³	50	50	50	50	50	50	50	50
13	Measured Concentration of PM	mg/Nm³	31	18	15	17	35 (Zn)	12	—	20
14	Permissible limits for SO2	PPM	NA	NA	100	100	NA	NA	NA	NA
15	Measured Concentration of SO2	PPM	—	—	3.3	3.7	—	—	—	—
16	Permissible limits for NOx	PPM	NA	NA	50	50	NA	NA	NA	NA
17	Measured Concentration of NOx	PPM	—	—	4.9	5.5	—	—	—	—

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Ecotech make - EBS 100
Calibration due on 25/09/2016

ND= Not Detectable
NA= Not Applicable

Royal Environment Auditing & Consultancy Service

Analyst

301

Ref. No. : 645/03/2015-16

Date : 31/03/2016

Form No. 37

(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant.: **Sinter Plant-2 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID:29017)**

2 Raw materials, by products and finished products involved in the process. **TOTAL DUST**

3 Particulars of sampling

Date of Sampling : 17th March, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remarks	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Sinter Plant At First Floor	Total Dust	Personal Respirable Dust sampler IAS 001	02	4-6	5.0	10	Gravimetric	5	—	Manoj	Mr. MANOJ SONRAT

Instruments used : Envirotech make personal sampler, Model No. IAS 001

Calibration Due on. : 02/11/2016

For. Royal Environment Auditing & Consultancy Service

Authorized Sign

302

Ref. No. : 646/03/2016-16

Date : 31/03/2016

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant : **Sinter Plant-1 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID: 35455)**

2 Raw materials, by products and finished products involved in the process. **TOTAL DUST**

3 Particulars of sampling

Date of Sampling : 17th March, 2016

Sr. No	Location Operation monitored	Identified Contaminats	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Sinter Plant At First Floor	Total Dust	Personal Respirable Dust sampler IAS 001	02	4-5	4.5	10	Gravimetric	4	---		Mr. MANOJ SONRAT

Instruments used : Envirotech make personal sampler, Model No. IAS 001

Calibration Due on. : 02/11/2016

For. Royal Environment Auditing & Consultancy Service

Authorized Sign

303

Ref. No : 647/03/2015-16

Date : 31/03/2016

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant.: **BF Plant-1 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID: 18037)**

2 Raw materials, by products and finished products involved in the process. **TOTAL DUST & CO.**

3 Particulars of sampling

Date of Sampling : 17th March, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	BF Plant (Cast House)	CO	Personal Respirable Dust sampler IAS 001	02	16-19	18.5	55	Gravimetric	5	---		Mr. MANOJ SONRAT
		Total Dust			4-7	5.5	10					

Instruments used : Envirotech make personal sampler, Model No. IAS 001

Calibration Due on. : 02/11/2016

For. Royal Environment Auditing & Consultancy Service

Authorized Sign

304

Ref No. : 848/03/2015-16

Date : 31/03/2016

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant.: BF Plant-2 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID: 29026)

2 Raw materials, by products and finished products involved in the process. TOTAL DUST & CO,

3 Particulars of sampling

Date of Sampling : 17th March, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Refrance Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	BF Plant (Cast House)	CO	Personal Respirable Dust sampler IAS 001	02	17-18	17.5	55	Gravimetric	4	---		Mr. MANOJ SONRAT
		Total Dust			3-5	4.0	10					

Instruments used : Envirotech make personal sampler, Model No. IAS 001

Calibration Due on. : 02/11/2016

For. Royal Environment Auditing & Consultancy Service

Authorized Sign

Royal Environment Auditing & Consultancy Service Rajkot

305

Ref. No. : 849/03/2015-16

Date : 31/03/2016

Form No. 37
(Prescribed under Rule 12-B)

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

1 Name of the Department/Plant.: DISP,JCO & Coating Units at JINDAL SAW LIMITED, Samaghogha.(GPCB ID: 18038)

2 Raw materials, by products and finished products involved in the process. TOTAL DUST

3 Particulars of sampling

Date of Sampling : 18th & 19th March, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Spiral Plant (Nr. ID/OD)	Total Dust	Personal Respirable Dust sampler tAS 001	02	1-4	2.5	10	Gravimetric	3	—		Mr. MANOJ SONRAT
2	JCO Plant (Nr. JCO Press)	Total Dust		02	3-6	4.5	10	Gravimetric	3	—		
3	Coating Plant-1 (Shot Blasting Area)	Total Dust		02	5-6	5.5	10	Gravimetric	4	—		
4	CCM Area (SDP / DISP)	Total Dust		02	5-7	6.0	10	Gravimetric	4	—		
5	Coating Plant-2 (Shot Blasting Area)	Total Dust		02	5-6	5.5	10	Gravimetric	5	—		
6	CCM Area (SDP-2)	Total Dust		02	6-8	7.0	10	Gravimetric	4	—		

Instruments used : Envirotech make personal sampler, Model No. tAS 001

Calibration Due on. : 02/11/2016

For. Royal Environment Auditing & Consultancy Service

Authorised Sign

306

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Baf Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 650/03/2015-16

Date : 31/03/2016

WORK ZONE NOISE LEVEL MEASUREMENT

SINTER PLANT- 1 (GPCB ID:35456)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 16th March, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
1	Inside Control Room	41.8	47.5	43.8
2	Inside Mechanical Room	47.9	53.8	49.7
3	Inside Electrical Room	46.6	52.2	48.2
4	Inside Plant Office	50.9	58.7	53.1

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

307

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 651/03/2015-16

Date : 31/03/2016

WORK ZONE NOISE LEVEL MEASUREMENT
BLAST FURNACE- 1 (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 16th March, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Nr. Stock House	63.9	74.6	66.9
02.	Inside Control Room	45.4	54.9	47.6
03.	Inside Control room of Cast House	46.6	51.3	48.3
04.	Inside Laboratory	42.8	47.9	43.9
05.	Inside Control Room of Blower House	56.1	62.6	59.1
06.	Inside Control Room of CPP	52.8	61.8	54.6

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 652/03/2015-16

Date : 31/03/2016

WORK ZONE NOISE LEVEL MEASUREMENT
PIPE PLANT (GPCB ID:18036)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 16th March, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room of Annealing Furnace of DISP / SDP	48.7	53.5	51.3
02	Inside Control Room – Mill Area of Spiral Plant	60.2	64.1	61.4
03	Nr. Pipe Cutting Area of Spiral Plant	67.4	77.2	72.2
04	Inside JCO Plant	64.6	75.7	67.1
05	Inside DISP / SDP Plant	68.8	79.3	73.2
06	Inside Coating Plant	65.3	74.1	70.1
07	Nr. CCM SDP-2	64.1	72.4	66.8
08	Inside Control Room of Annealing Furnace of SDP-2	50.4	54.2	51.6
09	Nr. Zinc Coating SDP-2	66.6	77.7	72.5
10	Near Mould Shop	76.2	87.5	78.4

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

309

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 653/03/2015-16

Date : 31/03/2016

AMBIENT NOISE LEVEL MEASUREMENT

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 15th March, 2016

Sr. No.	Location of Sampling	Value in dB(A) Day Time			Value in dB(A) Night Time		
		Min.	Max.	Leq	Min.	Max.	Leq
01.	Admin. Building	42.5	50.2	43.5	37.6	43.5	39.4
02.	Old Colony	36.6	41.3	38.2	33.4	39.1	34.3
03.	Nr. LPG Yard	52.4	60.7	53.6	48.7	54.6	50.1
04.	New Colony (School)	37.4	43.8	39.1	34.2	38.7	35.1
05.	Nr. SDP-2	56.7	64.2	57.6	53.3	59.5	55.2
06.	Nr. Coating Plant	54.2	63.3	58.5	51.6	61.2	54.5
07.	Nr. Gate No. 2	55.7	62.6	57.1	49.3	57.1	50.8
08.	Nr. Sinter Plant-1	60.4	65.1	61.1	53.6	59.3	55.3
09.	Nr. Sinter Plant-2	57.5	66.2	59.7	54.7	60.6	56.2
10.	Nr. Blast Furnace-1	56.4	60.7	57.2	51.6	58.4	53.1
11.	Nr. Blast Furnace-2	55.5	61.1	56.4	45.1	51.3	48.6
12.	Nr. Main Gate (Security Office)	43.3	52.3	45.2	39.5	44.7	41.1

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

310

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Baf Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360895 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 654/03/2015-16

Date : 31/03/2016

WORK ZONE NOISE LEVEL MEASUREMENT
BLAST FURNACE - 2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 16th March, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	57.2	62.7	58.6
02.	Nr. Stock House	64.6	69.3	66.2
03.	C/R Blower House	65.4	74.1	68.5

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)
Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.
Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 655/03/2015-16

Date : 31/03/2016

WORK ZONE NOISE LEVEL MEASUREMENT

SINTER PLANT - 2 (29017)

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Date of sampling : 16th March, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	50.5	52.7	51.3
02.	Inside Operator Room	59.4	64.8	60.7
03.	Near Proportioning Bulding	63.1	65.7	65.6
04.	Near Crusher House	67.7	75.6	70.2

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)
Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.
Recalibretion is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Royal
Environment Auditing & Consultancy Service
303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.
Ph.: +91 281 2360695 ▪ E-mail : royalenvironment@live.com ▪ admin@royalconsultancy.com

Ref. No. : 656/03/2015-16

Date : 31/03/2016

REPORT OF DOMESTIC WASTE WATER ANALYSIS

Name of company : JINDAL SAW LIMITED,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

Source of Sample Collection : Sewage Treatment Plant (Inlet & Outlet)

Date of Sampling : 28/03/2016

Test Method : As per IS Standards - 3024

Sr. No.	Parameters	Unit	GPCB limits for Treated Effluent	Raw Sewage	Treated Effluent
01.	pH	pH Unit	----	7.48	7.25
02.	BOD (3 Days at 27°C)	mg/l	<20	172	11
03.	Total Dissolve Solid	mg/l	...	1539	1745
04.	COD	mg/l	...	249	30
05.	Total Suspended Solid	mg/l	<30	271	20
06.	Oil & Grease	mg/l	...	ND	ND
07.	Residual Chlorine	mg/l	Min. 0.5	---	0.65

ND=Not Detectable

Royal Environment Auditing & Consultancy Service

Analyst

313