



Royal

Environment Auditing & Consultancy Service

303-304, Shivalik-7, B/s. Bai Adaiat, Gondal Road, RAJKOT - 360 002.

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

Ref. No. : 0130/06/2016-17

Date : 02/07/2016

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	16/06/2016	08/06/2016	08/06/2016	Not In Operation During The Visit
02	Time of sampling	Hr.		14:20	11:45	12:50	
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	---	151	37	39	---
08	Ambient Temperature	°C	---	35	34	35	---
09	Average Velocity of Flue Gases	m/sec.	---	4.2	12.3	11.4	---
10	Isokinetic flow rate for P.M. Sampling	LPM	---	13	22	20	---
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	---	67	32	26	---
14	Permissible limits for SO2	mg/Nm3	100 ppm	100 ppm	40	40	40
15	Measured Concentration of SO2	mg/Nm3	---	22.1	ND	ND	---
16	Permissible limits for Nox	mg/Nm3	50 ppm	50 ppm	25	25	25
17	Measured Concentration of Nox	mg/Nm3	---	20.5	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

[Signature]
Analyst



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Date : 02/07/2016

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	---	11/06/2016	14/06/2016	14/06/2016	15/06/2016	11/06/2016	21/06/2016
02	Time of sampling	Hr.	10.00	11.15	15.30	11.25	11.30	14.50
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 Separator & Bag Filter	Cyclone Separator & 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	46	45	44	41	55	39
08	Ambient Temperature	°C	34	35	35	34	35	34
09	Average Velocity of Flue Gases	m/sec	26.7	13.2	13.9	14.1	10.6	5.6
10	isokinetic flow rate for P.M. Sampling	LPM	12	23	24	25	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	49	12 (Zn)	15 (Zn)	18 (Zn)	43	14 (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	1.5	---	---	---	1.3	---

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

M. J. J. J.
Analyst



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Ref. No. : 0132/06/2016-17

Date : 02/07/2016

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	---	09/06/2016	09/06/2016	09/06/2016	09/06/2016	09/06/2016	09/06/2016	10/06/2016	10/06/2016
02	Time of sampling	Hr.	9.00	9.45	10.30	11.15	15.00	16.15	11.10	15.25
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	35	37	39	40	33	43	46
08	Ambient Temperature	°C	33	34	34	34	35	35	34	35
09	Average Velocity of Flue Gases	m/sec	3.9	3.8	3.7	4.6	4.8	5.0	11.8	13.7
10	Isokinetic flow rate for P.M. Sampling	LPM	16	16	15	19	19	20	21	24
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	16	39	31	20	22	34	30	53
14	Permissible limits for SO2	mg/Nm3	40	40	40	40	40	40	40	40
15	Measured Concentration of SO2	mg/Nm3	1.5	2.1	1.6	1.9	2.3	2.5	ND	ND
16	Permissible limits for Nox	mg/Nm3	25	25	25	25	25	25	25	25
17	Measured Concentration of Nox	mg/Nm3	4.3	3.4	4.7	4.2	3.7	3.9	4.6	4.1

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



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Ref. No. 0133/06/2016-17

Date 02/07/2016

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

Name of company JINDAL SAW LIMITED
Village Samaghogha.
Ta. 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	---	21/06/2016	Not in operation during visit	15/06/2016	15/06/2016	Not in operation during visit	15/06/2016	Not in operation during visit	Not in operation during visit
02	Time of sampling	Hr	11:55		14:45	15:50		12:30		
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	82		162	166		160		
08	Ambient Temperature	°C	34		35	35		35		
09	Average Velocity of Flue Gases	m/sec.	14.2	---	4.1	4.3	---	4.5		
10	Isokinetic flow rate for P.M. Sampling	LPM	23	---	12	12	---	13		
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		10	13		16		
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	5.9	---	2.9	3.4	---	2.4		
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	11.2		5.2 (PPM)	5.8 (PPM)		6.7 (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 - Ecotech make - ESS 100

Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

[Signature]

[Signature]
Analyst



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Ref. No. : 0134-06-2016-17

Date : 02/07/2016

STACK EMISSION MONITORING RESULTS

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

Name of company : JINDAL SAW LIMITED

Village : Samaghogha,

Tal : Mundra (Dis : 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	---	17/06/2016	18/06/2016	18/06/2016	18/06/2016	17/06/2016	17/06/2016	Not in operation during visit	22/06/2016
02	Time of sampling	Hr.	9.10	11.05	12.10	15.25	11.20	14.45		11.35
03	Stack Attached to	---	Magnesium Treatment	Socket Cleaning	Annealing Furnace - I	Annealing Furnace - II	Zinc Coating	Trn- 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	40	35	126	122	37	35	---	36
08	Ambient Temperature	°C	29	30	32	33	30	34	---	33
09	Average Velocity of Flue Gases	m/sec	5.2	3.1	5.2	5.6	4.7	3.2	---	4.6
10	Isokinetic flow rate for PM Sampling	LPM	21	13	17	18	19	13	---	16
11	Gaseous Sampling Flow Rate	LPM	---	---	2.0	2.0	---	---	---	---
12	Permissible limits for PM	mg/Nm ³	50	50	50	50	50	50	50	50
13	Measured Concentration of PM	mg/Nm ³	37	23	14	20	33 (Zn)	19	---	20 (Zn)
14	Permissible limits for SO ₂	PPM	NA	NA	100	100	NA	NA	NA	NA
15	Measured Concentration of SO ₂	PPM	---	---	2.2	2.3	---	---	---	---
16	Permissible limits for NO _x	PPM	NA	NA	50	50	NA	NA	NA	NA
17	Measured Concentration of NO _x	PPM	---	---	3.1	3.8	---	---	---	---

Note: Minimum Detectable Limit of SO₂ & NO_x 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 Detected

NA= Not applicable

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Ref. No. 0121/06/2016-17

Date 02/07/2016

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	---	21/06/2016	11/06/2016	10/06/2016	10/06/2016	11/06/2016
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	117	54	49	55	91
06	Ambient Temperature	°C	34	34	34	35	35
07	Average Velocity of Flue Gases	m/sec	26.7	16.2	12.9	15.1	6.2
08	IsoKinetic Flowrate for Sampling	LPM	10	28	22	26	22
09	Inlet	mg/Nm ³	4579	4718	3646	4361	4013
10	Outlet	mg/Nm ³	44	49	30	53	43
11	Efficiency	%	99.04	98.96	99.18	98.78	98.93

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

Calibration due on 25/09/2016

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Analyst



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Ref No. 0122/06/2016-17

Date 02/07/2016

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	---	14/06/2016	Not in operation during visit	14/06/2016	Not in operation during visit	15/06/2016	Not in operation during visit	21/06/2016
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	0.5	0.9
05	Stack Temperature	°C	54	...	51	...	49	...	48
06	Ambient Temperature	°C	35	...	35	...	34	...	34
07	Average Velocity of Flue Gases	m/sec.	14.5	...	15.1	...	24.3	...	11.9
08	isokinetic Flowrate for Sampling	LPM	25	...	26	...	11	...	21
09	Inlet	mg/Nm ³	1731	...	1946	...	1855	...	1567
10	Outlet	mg/Nm ³	12	...	15	...	18	...	14
11	Efficiency	%	99.31	...	95.23	...	99.03	...	99.11

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

Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service



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Ref. No. : 0123/06/2016-17

Date : 02/07/2016

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	---	17/06/2016	17/06/2016	17/06/2016	22/06/2016
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	50	43	40	44
06	Ambient Temperature	°C	29	30	34	33
07	Average Velocity of Flue Gases	m/sec	9.4	10.2	4.6	5.7
08	IsoKinetic Flowrate for Sampling	LPM	16	18	19	23
09	Inlet	mg/Nm ³	3326	3561	2649	1753
10	Outlet	mg/Nm ³	37	32	19	20
11	Efficiency	%	98.89	99.10	99.28	98.86

Instrument Used - Stack Monitoring Kit - Ecotech make - ESS 100

Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

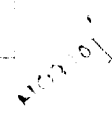
Form No. 37 (Prescribed under Rule 12-B)

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

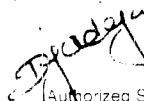
Date of Sampling : 16th & 17th June, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentra- tion (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 IAS 001	02	2-4	3.0	10	Gravimetric	3	----		Mr. MANOJ SONRAT
2	JCO Plant (Nr JCO Press)	Total Dust		02	4-5	4.5	10	Gravimetric	5	----		
3	Coating Plant-1 (Shot Blasting Area)	Total Dust		02	5-6	5.5	10	Gravimetric	3	----		
4	CCM Area (SDP- ID:SP)	Total Dust		02	5-7	6.0	10	Gravimetric	5	----		
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	5-8	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



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Ref. No. : 0142/06/2016-17

Date : 02/07/2016

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 : 17th June, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room of Annealing Furnace of DISP / SDP	50.4	55.1	52.9
02	Inside Control Room – Mill Area of Spiral Plant	62.1	65.9	63.1
03	Nr. Pipe Cutting Area of Spiral Plant	69.1	79.2	74.2
04	Inside JCO Plant	66.5	77.4	69.1
05	Inside DISP / SDP Plant	70.5	80.9	75.3
06	Inside Coating Plant	66.9	76.2	71.9
07	Nr. CCM SDP-2	65.1	74.1	68.5
08	Inside Control Room of Annealing Furnace of SDP-2	52.1	56.3	53.2
09	Nr. Zinc Coating SDP-2	68.3	79.4	74.2
10	Near Mould Shop	78.6	89.2	80.1

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

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Analyst



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Ref. No. : 0119/06/2016-17

Date : 02/07/2016

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	---	20/06/2016
02	Attached to	---	De-dustingSystem
03	Stack Height	Meter	35
04	Stack Duct Diameter	Meter	1.4
05	Stack Temperature	°C	50
06	Ambient Temperature	°C	33
07	Average Velocity of Flue Gases	m/sec.	14.5
08	IsoKinetic Flowrate for Sampling	LPM	25
09	Inlet	mg/Nm ³	613
10	Outlet	mg/Nm ³	5
11	Efficiency	%	99.18

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

Calibration due on 25/09/2016

Ref No: 013//06/2016-17

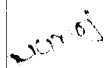
Date: 02/07/2016

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

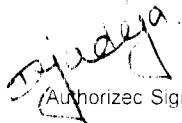
Date of Sampling: 15th June, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concent ration (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	16-20	18.0	55	Grav metric	5	---		Mr. MANOJ SONRAT
		Total Dust			4-5	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



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Ref. No. : 0141/06/2016-17

Date : 02/07/2016

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 : 17th June, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Nr. Stock House	65.6	76.3	68.6
02	Inside Control Room	47.1	56.6	49.3
03.	Inside Control room of Cast House	48.3	52.9	50.2
04.	Inside Laboratory	44.5	49.6	45.6
05	Inside Control Room of Blower House	58.2	64.3	60.9
06	Inside Control Room of CPP	54.5	63.5	56.2

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



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Ref. No. : 0146/06/2016-17

Date : 02/07/2016

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)

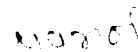
Date of Sampling : 28/06/2016

Test Method : As per IS Standards - 3024

Sr. No.	Parameters	Unit	GPCB limits for Treated Effluent	Raw Sewage	Treated Effluent
01.	pH	pH Unit	----	7.60	7.31
02.	BOD (3 Days at 27°C)	mg/l	<20	167	10
03.	Total Dissolve Solid	mg/l	...	1266	1457
04.	COD	mg/l	...	229	27
05.	Total Suspended Solid	mg/l	<30	238	16
06.	Oil & Grease	mg/l	...	ND	ND
07.	Residual Chlorine	mg/l	Min. 0.5	----	0.65

ND=Not Detectable

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Ref No. :0127/06/2016-17

Date :02/07/2016

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	---	16/06/2016	16/06/2016	Monitoring Not Possible	16/06/2016	15/06/2016
02	Time of sampling	Hr.	10.00	8.20		12.40	15.10
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	---	---	0.85
07	Stack Temperature	°C	45	218	---	54	35
08	Ambient Temperature	°C	31	28	---	33	33
09	Average Velocity of Flue Gases	m/sec.	28.4	2.8	---	10.7	8.3
10	Isokinetic flow rate for P.M. Sampling	LPM	13	7	---	18	15
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	---
12	Permissible limits for PM	mg/Nm ³	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm ³	43	2	---	8	5
14	Permissible limits for SO ₂	mg/Nm ³	NA	NA	NA	NA	NA
15	Measured Concentration of SO ₂	mg/Nm ³	---	---	---	---	---
16	Permissible limits for NO _x	mg/Nm ³	NA	NA	NA	NA	NA
17	Measured Concentration of NO _x	mg/Nm ³	---	---	---	---	---

Note : Minimum Detectable Limit of SO₂ & NO_x 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

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Ref. No 0124/06/2016-17

Date 02/07/2016

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	---	16/06/2016	16/06/2016	16/06/2016
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	55	60	41
06	Ambient Temperature	°C	31	33	33
07	Average Velocity of Flue Gases	m/sec.	31.4	12.6	11.2
08	IsoKinetic Flowrate for Sampling	LPM	14	21	20
09	Inlet	mg/Nm ³	4408	1264	914
10	Outlet	mg/Nm ³	43	8	5
11	Efficiency	%	99.02	99.37	99.45

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

Calibration due on 25/09/2016

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

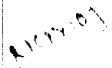
Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

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

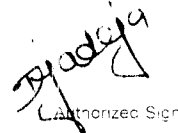
Date of Sampling: 15th June, 2016

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)	CC	Personal Respirable Dust sampler IAS 001	02	18-19	18.5	55	Gravimetric	4	---		Mr. MANOJ SONRAT
		Total Dust			5-7	6.0	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

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Ref. No. : 0144/06/2016-17

Date : 02/07/2016

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 : 17th June, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	59.2	64.3	60.3
02.	Nr. Stock House	66.3	70.9	68.1
03.	C/R Blower House	67.1	76.2	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.

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst



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Ref No : 0128/06/2016-17

Date : 02/07/2016

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	---	20/06/2016	20/06/2016	20/06/2016	20/06/2016	Monitoring Not Possible
02	Time of sampling	Hr.	10.50	14.15	15.45	8.10	
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	41	173	180	212	---
08	Ambient Temperature	°C	33	35	35	28	---
09	Average Velocity of Flue Gases	m/sec	11.1	4.6	4.7	3.5	---
10	Isokinetic flow rate for P.M. Sampling	LPM	20	13	13	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	11	13	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

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

Calibration due on 25/09/2016

ND=Not Detectable

Royal Environment Auditing & Consultancy Service

Analyst



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Ref. No : 0129/06/2016-17

Date : 02/07/2016

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	14/06/2016	14/06/2016	Not In Operation During The Visit
02	Time of sampling	Hr.		13.50	14.40	
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	---	241	238	---
08	Ambient Temperature	°C	---	35	35	---
09	Average Velocity of Flue Gases	m/sec	---	31.6	30.5	---
10	Isokinetic flow rate for P.M. Sampling	LPM	---	9	8	---
11	Gaseous Sampling Flow Rate	LPM	---	2.0	2.0	---
12	Permissible limits for PM	mg/Nm ³	150	150	150	150
13	Measured Concentration of PM.	mg/Nm ³	---	62	50	---
14	Permissible limits for SO ₂	ppm	100	100	100	100
15	Measured Concentration of SO ₂	ppm	---	26.4	23.8	---
16	Permissible limits for Nox	ppm	50	50	50	50
17	Measured Concentration of Nox	ppm	---	21.7	22.9	---

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



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Ref No : 0125/06/2016-17

Date : 02/07/2016

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	---	13/06/2016	Not in operation during visit	13/06/2016	NA	NA	13/06/2016
02	Time of sampling	---	12.10		9.30			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	...	144	...	...	139
08	Ambient Temperature	°C	37	...	32	...	...	35
09	Average Velocity of Flue Gases	m/sec.	4.6	...	6.2	...	...	16.6
10	Isokinetic flow rate for P.M. Sampling	LPM	19	...	19	...	...	23
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	30	...	60	...	...	37
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	...	...	4.2	...	...	...

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



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Ref. No : 0118/06/2016-17

Date : 02/07/2016

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	---	13/06/2016	Not in operation during visit	13/06/2016	13/06/2016
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	53		150	142
06	Ambient Temperature	°C	37	---	32	35
07	Average Velocity of Flue Gases	m/sec.	11.7	.	32.1	33.8
08	IsoKinetic Flowrate for Sampling	LPM	20		11	12
09	Inlet	mg/Nm ³	2754	---	4031	3742
10	Outlet	mg/Nm ³	30		60	37
11	Efficiency	%	98.91	---	98.51	99.01

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

Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Signature

Signature
Analyst

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

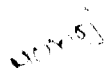
Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

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

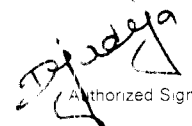
Date of Sampling: 15th June, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concent ration (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	5-5	5.5	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



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Ref. No. : 0140/06/2016-17

Date : 02/07/2016

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 : 17th June, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
1	Inside Control Room	43.7	49.2	45.4
2	Inside Mechanical Room	50.1	55.5	51.4
3	Inside Electrical Room	48.6	54.1	50.2
4	Inside Plant Office	53.4	60.4	55.3

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



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Ref. No. 0126/06/2016-17

Date: 02/07/2016

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	07/06/2016	07/06/2016	Not In Operation During The Visit	NA	NA	08/06/2016	Not In Operation During The Visit	07/06/2016	08/06/2016
02	Time of sampling	Hr.		13.30	15.45				9.20		11.00	12.15
03	Stack Attached to	---	Fuel crushing de-duster system (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 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	---	1.3	1.00
07	Stack Temperature	°C	---	37	40	---	---	---	151	---	113	123
08	Ambient Temperature	°C	---	36	36	---	---	---	32	---	35	35
09	Average velocity of Flue Gases	m/sec	---	10.1	5.6	---	---	---	13.6	---	26.7	10.6
10	Isokinetic flow rate for P.M. Sampling	LPM	---	18	23	---	---	---	18	---	10	15
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	---	---	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	---	21	32	---	---	---	48	---	14	15
14	Permissible limits for SO2	ppm	NA	NA	NA	NA	NA	NA	100	NA	NA	100 (ppm)
15	Measured Concentration of SO2	ppm	---	---	---	---	---	---	ND	---	---	120
16	Permissible limits for NOx	ppm	NA	NA	NA	NA	NA	NA	50	NA	NA	50 (ppm)
17	Measured Concentration of NOx	ppm	---	---	---	---	---	---	5.1	---	---	0.76

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

NA = Not Applicable

Royal Environment Auditing & Consultancy Service

Mundra
Analyst



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Ref. No. 0120/06/2016-17

Date : 02/07/2016

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	---	07/06/2016	Not in operation during visit	07/06/2016	08/06/2016	07/06/2016	08/06/2016
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	43		48	156	118	135
06	Ambient Temperature	°C	36		36	32	35	35
07	Average Velocity of Flue Gases	m/sec	13.1		10.8	34.2	35.9	12.6
08	IsoKinetic Flowrate for Sampling	LPM	23	...	19	11	13	17
09	Inlet	mg/Nm ³	2413		2941	4511	3257	2248
10	Outlet	mg/Nm ³	21		32	48	24	15
11	Efficiency	%	99.13	...	98.91	98.94	99.27	99.33

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

Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service

Analyst

Ref No. : 0135/06/2016-17

Date : 02/07/2016

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

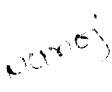
Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).

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

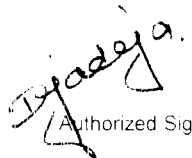
Date of Sampling : 15th June, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concent ration (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	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)



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Ref. No. 0145/06/2016-17

Date : 02/07/2016

WORK ZONE NOISE LEVEL MEASUREMENT

SINTER PLANT - 2 (29017)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 17th June, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	52.2	54.4	53.1
02.	Inside Operator Room	61.3	66.5	62.4
03.	Near Proportioning Bulding	65.5	67.4	67.3
04.	Near Crusher House	69.4	77.3	72.5

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



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Ref. No : 0111/06/2016-17

Date : 02/07/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - JUNE : 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 : Weigh Bridge (Nr.Gate No-2) (E)							
01.	No. of Week	----	01	02	03	04	05	06	07	08
02.	Date & Time Starting of Monitoring	----	03/06/2016; 08.15	06/06/2016; 08.00	10/06/2016; 08.30	13/06/2016; 08.25	17/06/2016; 08.00	20/06/2016; 08.20	24/06/2016; 08.10	27/06/2016; 08.15
03.	Date & Time Ending of Monitoring	----	04/06/2016; 08.15	07/06/2016; 08.00	11/06/2016; 08.30	14/06/2016; 08.25	18/06/2016; 08.00	21/06/2016; 08.20	25/06/2016; 08.10	28/06/2016; 08.15
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)	----	W	W	WSW	WSW	W	WNW	W	SW
06.	Average Wind Speed	Km/Hr.	9.3	10.9	17.0	17.2	14.1	12.4	3.9	4.0
07.	Average flow rate for Dust Monitoring PM ₁₀	m3/min	1.15	1.16	1.18	1.20	1.21	1.19	1.18	1.17
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	48	53	57	47	50	40	43	52
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	18	22	25	20	23	16	15	19
14.	Permissible limits for SO ₂ *	µg/m3	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO ₂	µg/m3	4.1	5.2	4.6	3.9	4.2	3.5	3.1	5.4
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	16.6	17.2	15.5	16.2	11.8	12.4	11.9
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. RCS (AQM-217/BL) (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on: 15/05/2017

B.D.L. Below Detectable Limit

*Permissible limits are as per NAAQ Standard 16th November 2009.

Royal Environment Auditing & Consultancy Service

Analyst



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Ref. No. : 0112/06/2016-17

Date : 02/07/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - JUNE : 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	05	06	07	08
02.	Date & Time Starting of Monitoring	----	03/06/2016: 08.30	06/06/2016: 08.20	10/06/2016: 08.45	13/06/2016: 08.40	17/06/2016: 08.15	20/06/2016: 08.35	24/06/2016: 08.25	27/06/2016: 08.30
03.	Date & Time Ending of Monitoring	----	04/06/2016: 08.30	07/06/2016: 08.20	11/06/2016: 08.45	14/06/2016: 08.40	18/06/2016: 08.15	21/06/2016: 08.35	25/06/2016: 08.25	28/06/2016: 08.30
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)	----	W	W	WSW	WSW	W	WNW	W	SW
06.	Average Wind Speed	Km/Hr.	9.3	10.9	17.0	17.2	14.1	12.4	3.9	4.0
07.	Average flow rate for Dust Monitoring PM ₁₀	m3/min.	1.16	1.17	1.15	1.18	1.20	1.19	1.21	1.17
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	56	50	49	57	48	53	51	59
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	23	22	19	21	24	20	16	19
14.	Permissible limits for SO ₂ *	µg/m3	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO ₂	µg/m3	2.9	3.3	2.7	3.7	4.3	4.9	5.1	3.5
16.	Permissible limits for NO ₂ *	µg/m3	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO ₂	µg/m3	12.8	15.5	16.3	15.6	15.5	17.5	14.8	13.7
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 (AQM - 217 B.L.); (2) 3 Nos. of Gaseous Sampler (AAS 109); (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration done on : 15.05.2017

*Permissible limits are as per NAAQ Standard 16th November 2009

B.D.L = Below Detectable Limit

Royal Environment Auditing & Consultancy Service

[Signature]

[Signature]
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Ref. No. : 0113/06/2016 17

Date : 02/07/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - JUNE : 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	02	03	04	05	06	07	08
01	No. of Week	----	01	02	03	04	05	06	07	08
02	Date & Time Starting of Monitoring	----	03/06/2016: 08.50	06/06/2016: 08.45	10/06/2016: 09.00	13/06/2016: 08.55	17/06/2016: 08.35	20/06/2016: 08.55	24/06/2016: 08.40	27/06/2016: 08.50
03	Date & Time Ending of Monitoring	----	04/06/2016: 08.50	07/06/2016: 08.45	11/06/2016: 09.00	14/06/2016: 08.55	18/06/2016: 08.35	21/06/2016: 08.55	25/06/2016: 08.40	28/06/2016: 08.50
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)	----	W	W	WSW	WSW	W	WNW	W	SW
06	Average Wind Speed	Km/Hr	9.3	10.9	17.0	17.2	14.1	12.4	3.9	4.0
07	Average flow rate for Dust Monitoring PM ₁₀	m ³ /min.	1.20	1.21	1.23	1.19	1.21	1.20	1.19	1.22
08	Average flow rate for Dust Monitoring PM _{2.5}	m ³ /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/m ³	100	100	100	100	100	100	100	100
11	Measured Concentration of PM ₁₀	µg/m ³	36	32	40	43	37	31	35	45
12	Permissible limits for PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60
13	Measured Concentration of PM _{2.5}	µg/m ³	17	15	18	20	19	14	16	21
14	Permissible limits for SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80
15	Measured Concentration of SO ₂	µg/m ³	2.9	2.5	3.1	3.7	4.1	3.3	2.2	2.9
16	Permissible limits for NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80
17	Measured Concentration of NO ₂	µg/m ³	10.5	12.2	13.5	14.6	13.4	14.3	11.4	10.5
18	Permissible limit for CO **	µg/m ³	2000	2000	2000	2000	2000	2000	2000	2000
19	Measured Concentration of CO	µg/m ³	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)

Re Calculation due on : 15.05.2017

*Permissible limits are as per NAAQ Standard 16th November 2009

B.D.L. = Below Detectable Limit

Royal Environment Auditing & Consultancy Service

[Signature]

[Signature]
Analyst



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Ref No : 0114/06/2016-17

Date : 02/07/2016

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 Pond	LPG Yard (Nr. Water Reservoir)	Between Sinter - 2 & Spiral - 2
02.	Date of sampling	----	11/06/2016	11/06/2016	12/06/2016	12/06/2016
03.	Time of sampling	----	8.00	8.20	8.40	9.00
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	WSW	WSW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	19.2	19.2	17.2	17.2
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	31	42	50	48
11.	Permissible limits for PM 2.5*	µg/m3	60	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	15	14	18	20
13.	Permissible limits for SO ₂ *	µg/m3	80	80	80	80
14.	Measured Concentration of SO ₂	µg/m3	1.9	2.8	3.4	3.1
15.	Permissible limits for NO ₂ *	µg/m3	80	80	80	80
16.	Measured Concentration of NO ₂	µg/m3	8.5	11.2	12.7	11.6
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 : 15/05/2017

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009.

Royal Environment Auditing & Consultancy Service

Analyst



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Ref. No. : 0115/06/2016-17

Date : 02/07/2016

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	---	Vikashpuram Colony	Savitri Vihar Colony (Shopping Centre)	VIP Guest House	Main Gate
02.	Date of sampling	----	13/06/2016	13/06/2016	14/06/2016	14/06/2016
03.	Time of sampling	----	8.35	9.05	9.00	9.20
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	WSW	WSW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	17.2	17.2	17.3	17.3
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	34	40	57	38
11.	Permissible limits for PM 2.5*	µg/m3	60	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	22	19	25	17
13.	Permissible limits for SO ₂ *	µg/m3	80	80	80	80
14.	Measured Concentration of SO ₂	µg/m3	4.2	5.5	4.6	5.3
15.	Permissible limits for NO ₂ *	µg/m3	80	80	80	80
16.	Measured Concentration of NO ₂	µg/m3	10.7	12.1	14.6	13.1
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 : 15/05/2017

BDL= Below Detectable Limit

*Permissible Limits are as per NAAQ Standard 16th November 2009.

Royal Environment Auditing & Consultancy Service

Analyst



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Ref No. : 0116/06/2016-17

Date : 02/07/2016

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	----	21/06/2016	21/06/2016	22/06/2016
03.	Time of sampling	----	8.20	8.50	8.00
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	----	W	W	NNW
06.	Average Wind Speed	Km/Hr.	10.2	10.2	7.5
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	1822	1905	1637
11.	Permissible limits for SO2*	µg/m3	150	150	150
12.	Measured Concentration of SO2	µg/m3	17.7	16.6	18.5
13.	Permissible limits for NO2*	µg/m3	120	120	120
14.	Measured Concentration of NO2	µg/m3	24.2	25.4	23.6
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 : 15/05/2017

BDL= Below Detectable Limit

ND= Not Detectable

Royal Environment Auditing & Consultancy Service

Analyst



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Ref. No. :0117/06/2016-17

Date : 02/07/2016

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	----	22/06/2016	23/06/2016	23/06/2016
03.	Time of sampling	----	8.25	8.15	8.45
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	----	NNW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	7.5	3.2	3.2
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	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m3	1055	497	1734
11.	Permissible limits for SO2*	µg/m3	150	150	150
12.	Measured Concentration of SO2	µg/m3	15.5	19.6	16.2
13.	Permissible limits for NO2*	µg/m3	120	120	120
14.	Measured Concentration of NO2	µg/m3	20.4	26.3	24.3
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 : 15/05/2017

BDL= Below Detectable Limit

ND= Not Detectable

Royal Environment Auditing & Consultancy Service

Analyst



Royal

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Ref. No. : 0143/06/2016-17

Date : 02/07/2016

AMBIENT NOISE LEVEL MEASUREMENT

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 18th June, 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	44.2	52.1	45.2	39.3	45.2	41.1
02	Old Colony	38.3	42.9	40.2	35.1	41.3	35.9
03	Nr. LPG Yard	54.1	62.4	55.3	50.4	56.3	52.1
04	New Colony (School)	39.1	45.5	41.2	36.1	40.4	37.2
05	Nr. SDP-2	58.4	66.3	59.3	54.8	61.2	57.1
06	Nr. Coating Plant	56.2	64.9	60.2	53.2	63.4	56.1
07	Nr. Gate No. 2	57.4	64.3	59.8	50.9	59.3	52.5
08	Nr. Sinter Plant-1	62.1	66.9	63.2	55.3	60.9	57.6
09	Nr. Sinter Plant-2	59.2	68.3	61.4	56.4	62.3	58.2
10	Nr. Blast Furnace-1	58.1	62.4	58.9	53.3	60.1	55.1
11	Nr. Blast Furnace-2	57.2	63.1	58.1	47.1	52.9	50.3
12	Nr. Main Gate (Security Office)	44.9	53.8	47.2	41.2	46.4	43.1

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

permd
Analyst