



# Royal

## Environment Auditing & Consultancy Service

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

Ref. No. 303/11/2013-14

Date: 04/12/2013

### AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_2/4/6

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	----	06/11/2013	06/11/2013	06/11/2013
03.	Time of sampling	----	9.00	9.20	9.35
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	W	W	W
06.	Average Wind Speed	Km/Hr.	2 to 12	2 to 12	2 to 12
07.	Average flow rate during sampling	m <sup>3</sup> /Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	<b>Permissible limits for PM 10</b>	<b>µg/m<sup>3</sup></b>	<b>100</b>	<b>100</b>	<b>100</b>
10.	Measured Concentration of PM 10	µg/m <sup>3</sup>	41	48	39
11.	<b>Permissible limits for PM 2.5</b>	<b>µg/m<sup>3</sup></b>	<b>60</b>	<b>60</b>	<b>60</b>
12.	Measured Concentration of PM 2.5	µg/m <sup>3</sup>	22	35	24
13.	<b>Permissible limits for SO<sub>2</sub></b>	<b>µg/m<sup>3</sup></b>	<b>80</b>	<b>80</b>	<b>80</b>
14.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	11.9	12.2	11.4
15.	<b>Permissible limits for NO<sub>2</sub></b>	<b>µg/m<sup>3</sup></b>	<b>80</b>	<b>80</b>	<b>80</b>
16.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	21.7	22.1	20.8
17.	<b>Permissible limit for CO **</b>	<b>µg/m<sup>3</sup></b>	<b>2000</b>	<b>2000</b>	<b>2000</b>
18.	Measured Concentration of CO	µg/m <sup>3</sup>	281	314	237

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attachment of 1 No. of PM 2.5 Sampler (AAS 127) (4) Ecotech make 2 Nos. of RDS (AAS 217 BL) (5) Gaseous sampling attachment (AAS 109) (6) Ecotech make 2 Nos. of PM 2.5 sampler (AAS 127)

Calibration due on: (1) 05/05/2014 (2) 05/05/2014 (3) 04/05/2014 (4) 06/05/2014 (5) 05/05/2014 (6) 06/05/2014

Royal Environment Auditing & Consultancy Service



Analyst



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Ref. No. 304/11/2013-14

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Tal. : Mundra, Dist. Kutch

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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	----	07/11/2013	07/11/2013	07/11/2013
03.	Time of sampling	----	9.10	9.30	9.45
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	-----	W	W	W
06.	Average Wind Speed	Km/Hr.	3 to 10	3 to 10	3 to 10
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	46	37
11.	Permissible limits for PM 2.5	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	24	33	21
13.	Permissible limits for SO2	µg/m3	80	80	80
14.	Measured Concentration of SO2	µg/m3	12.3	12.8	11.9
15.	Permissible limits for NO2	µg/m3	80	80	80
16.	Measured Concentration of NO2	µg/m3	22.1	22.6	21.2
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	244	331	210

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attachment of 1 No. of PM 2.5 Sampler (AAS 127) (4) Ecotech make 2 Nos. of RDS (AAS 217 BL) (5) Gaseous sampling attachment (AAS 109) (6) Ecotech make 2 Nos. of PM 2.5 sampler (AAS 127)

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Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_2/4/6

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	----	13/11/2013	13/11/2013	13/11/2013
03.	Time of sampling	----	9.15	9.35	9.50
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.	4 to 12	4 to 12	4 to 12
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.	<b>Permissible limits for PM 10</b>	<b>µg/m3</b>	<b>100</b>	<b>100</b>	<b>100</b>
10.	Measured Concentration of PM 10	µg/m3	46	51	32
11.	<b>Permissible limits for PM 2.5</b>	<b>µg/m3</b>	<b>60</b>	<b>60</b>	<b>60</b>
12.	Measured Concentration of PM 2.5	µg/m3	24	36	21
13.	<b>Permissible limits for SO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>
14.	Measured Concentration of SO2	µg/m3	12.6	13.9	11.4
15.	<b>Permissible limits for NO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>
16.	Measured Concentration of NO2	µg/m3	22.6	24.4	21.8
17.	<b>Permissible limit for CO **</b>	<b>µg/m3</b>	<b>2000</b>	<b>2000</b>	<b>2000</b>
18.	Measured Concentration of CO	µg/m3	297	343	257

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attachment of 1 No. of PM 2.5 Sampler (AAS 127) (4) Ecotech make 2 Nos. of RDS (AAS 217 BL) (5) Gaseous sampling attachment (AAS 109)

(6) Ecotech make 2 Nos. of PM 2.5 sampler (AAS 127)

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Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_2/4/6

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	----	14/11/2013	14/11/2013	14/11/2013
03.	Time of sampling	----	9.20	9.45	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.	3 to 15	3 to 15	3 to 15
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.	<b>Permissible limits for PM 10</b>	<b>µg/m3</b>	<b>100</b>	<b>100</b>	<b>100</b>
10.	Measured Concentration of PM 10	µg/m3	48	49	35
11.	<b>Permissible limits for PM 2.5</b>	<b>µg/m3</b>	<b>60</b>	<b>60</b>	<b>60</b>
12.	Measured Concentration of PM 2.5	µg/m3	29	39	26
13.	<b>Permissible limits for SO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>
14.	Measured Concentration of SO2	µg/m3	12.1	13.4	11.8
15.	<b>Permissible limits for NO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>
16.	Measured Concentration of NO2	µg/m3	23.2	24.8	22.7
17.	<b>Permissible limit for CO **</b>	<b>µg/m3</b>	<b>2000</b>	<b>2000</b>	<b>2000</b>
18.	Measured Concentration of CO	µg/m3	271	312	229

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attachment of 1 No. of PM 2.5 Sampler (AAS 127) (4) Ecotech make 2 Nos. of RDS (AAS 217 BL) (5) Gaseous sampling attachment (AAS 109)

(6) Ecotech make 2 Nos. of PM 2.5 sampler (AAS 127)

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Ref. No. 307/11/2013-14

Date: 04/12/2013

### AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_2/4/6

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	----	18/11/2013	18/11/2013	18/11/2013
03.	Time of sampling	----	9.10	9.30	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.	4 to 12	4 to 12	4 to 12
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	54	38
11.	Permissible limits for PM 2.5	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	28	33	24
13.	Permissible limits for SO2	µg/m3	80	80	80
14.	Measured Concentration of SO2	µg/m3	12.6	13.4	11.7
15.	Permissible limits for NO2	µg/m3	80	80	80
16.	Measured Concentration of NO2	µg/m3	24.3	23.8	22.4
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	362	267	238

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attachment 1 No. of PM 2.5 Sampler (AAS 127) (4) Ecotech make 2 Nos. of RDS (AAS 217 BL) (5) Gaseous sampling attachment (AAS 109) (6) Ecotech make 2 Nos. of PM 2.5 sampler (AAS 127)

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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	----	19/11/2013	19/11/2013	19/11/2013
03.	Time of sampling	----	9.15	9.35	9.55
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	ENE	ENE	ENE
06.	Average Wind Speed	Km/Hr.	3 to14	3 to14	3 to14
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	57	40
11.	Permissible limits for PM 2.5	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	33	38	26
13.	Permissible limits for SO2	µg/m3	80	80	80
14.	Measured Concentration of SO2	µg/m3	12.8	13.1	12.3
15.	Permissible limits for NO2	µg/m3	80	80	80
16.	Measured Concentration of NO2	µg/m3	23.7	23.1	21.5
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	308	246	256

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attachment 1 No. of PM 2.5 Sampler (AAS 127) (4) Ecotech make 2 Nos. of RDS (AAS 217 BL) (5) Gaseous sampling attachment (AAS 109) (6) Ecotech make 2 Nos. of PM 2.5 sampler (AAS 127)

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Sr. No.	Particulars	Unit	NAAQMS - 1	NAAQMS - 2	NAAQMS - 3
01.	<b>Location of Ambient</b>	----	<b>Main Gate (S)</b>	<b>Sinter Plant - 1 (NNW)</b>	<b>Nr. Workshop Spiral - II (W)</b>
02.	Date of sampling	----	25/11/2013	25/11/2013	25/11/2013
03.	Time of sampling	----	9.10	9.25	9.45
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.	3 to 12	3 to 12	3 to 12
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.	<b>Permissible limits for PM 10</b>	<b>µg/m3</b>	<b>100</b>	<b>100</b>	<b>100</b>
10.	Measured Concentration of PM 10	µg/m3	42	58	40
11.	<b>Permissible limits for PM 2.5</b>	<b>µg/m3</b>	<b>60</b>	<b>60</b>	<b>60</b>
12.	Measured Concentration of PM 2.5	µg/m3	32	37	28
13.	<b>Permissible limits for SO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>
14.	Measured Concentration of SO2	µg/m3	13.1	12.7	11.9
15.	<b>Permissible limits for NO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>
16.	Measured Concentration of NO2	µg/m3	22.8	22.3	20.6
17.	<b>Permissible limit for CO **</b>	<b>µg/m3</b>	<b>2000</b>	<b>2000</b>	<b>2000</b>
18.	Measured Concentration of CO	µg/m3	293	311	252

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attachment of 1 No. of PM 2.5 Sampler (AAS 127) (4) Ecotech make 2 Nos. of RDS (AAS 217 BL) (5) Gaseous sampling attachment (AAS 109) (6) Ecotech make 2 Nos. of PM 2.5 sampler (AAS 127)

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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	----	26/11/2013	26/11/2013	26/11/2013
03.	Time of sampling	----	9.15	9.35	9.50
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.	4 to 14	4 to 14	4 to 14
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.	<b>Permissible limits for PM 10</b>	<b>µg/m3</b>	<b>100</b>	<b>100</b>	<b>100</b>
10.	Measured Concentration of PM 10	µg/m3	44	55	38
11.	<b>Permissible limits for PM 2.5</b>	<b>µg/m3</b>	<b>60</b>	<b>60</b>	<b>60</b>
12.	Measured Concentration of PM 2.5	µg/m3	29	34	30
13.	<b>Permissible limits for SO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>
14.	Measured Concentration of SO2	µg/m3	13.3	12.4	11.4
15.	<b>Permissible limits for NO2</b>	<b>µg/m3</b>	<b>80</b>	<b>80</b>	<b>80</b>
16.	Measured Concentration of NO2	µg/m3	23.2	22.8	20.9
17.	<b>Permissible limit for CO **</b>	<b>µg/m3</b>	<b>2000</b>	<b>2000</b>	<b>2000</b>
18.	Measured Concentration of CO	µg/m3	281	323	244

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Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_2/4/6

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	----	09/11/2013	10/11/2013	23/11/2013	24/11/2013
03.	Time of sampling	----	9.30	10.45	10.00	10.20
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	N	W	N	W
06.	Average Wind Speed	Km/Hr.	2 to 12	3 to 14	2 to 12	3 to 14
07.	Average flow rate during sampling	m <sup>3</sup> /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.	<b>Permissible limits for PM 10</b>	µg/m <sup>3</sup>	100	100	100	100
10.	Measured Concentration of PM 10	µg/m <sup>3</sup>	48	51	59	55
11.	<b>Permissible limits for PM 2.5</b>	µg/m <sup>3</sup>	60	60	60	60
12.	Measured Concentration of PM 2.5	µg/m <sup>3</sup>	20	23	33	35
13.	<b>Permissible limits for SO<sub>2</sub></b>	µg/m <sup>3</sup>	80	80	80	80
14.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	12.5	13.2	12.4	13.9
15.	<b>Permissible limits for NO<sub>2</sub></b>	µg/m <sup>3</sup>	80	80	80	80
16.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	17.3	18.0	20.5	20.1
17.	<b>Permissible limit for CO **</b>	µg/m <sup>3</sup>	2000	2000	2000	2000
18.	Measured Concentration of CO	µg/m <sup>3</sup>	206	221	238	257

Instrument used : (1) Envirotech make 2 Nos. RDS (APM - 460 BL) (2) 2 Nos. Gaseous Sampling Kit (APM 411)

(3) Ecotech make Attachment of 2 Nos. PM 2.5 Sampler (AAS 127)

Calibration due on: (1) 05/05/2014 (2) 05/05/2014 (3) 04/05/2014





# Royal

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Ref. No. 312/11/2013-14

Date: 04/12/2013

### AMBIENT AIR QUALITY MONITORING REPORT

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_2/4/6

Sr. No.	Particulars	Unit	AAQM - 5 (NE)	AAQM - 6 (SE)	AAQM - 7 (SSE)	AAQM - 8 (E)
01.	Location of Ambient	----	Labour Colony	New Colony (Shopping Centre )	Admin Building	Weigh bridge
02.	Date of sampling	----	09/11/2013	10/11/2013	23/11/2013	24/11/2013
03.	Time of sampling	----	11.15	12.10	10.30	11.00
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	N	W	N	W
06.	Average Wind Speed	Km/Hr.	2 to 12	3 to 14	2 to 12	3 to 14
07.	Average flow rate during sampling	m <sup>3</sup> /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/m <sup>3</sup>	100	100	100	100
12.	Measured Concentration of PM 10	µg/m <sup>3</sup>	54	51	47	61
11.	Permissible limits for PM 2.5	µg/m <sup>3</sup>	60	60	60	60
10.	Measured Concentration of PM 2.5	µg/m <sup>3</sup>	29	24	33	39
13.	Permissible limits for SO <sub>x</sub>	µg/m <sup>3</sup>	80	80	80	80
14.	Measured Concentration of SO <sub>x</sub>	µg/m <sup>3</sup>	12.6	13.1	12.2	13.4
15.	Permissible limits for No <sub>x</sub>	µg/m <sup>3</sup>	80	80	80	80
16.	Measured Concentration of NO <sub>x</sub>	µg/m <sup>3</sup>	19.5	19.8	20.1	21.7
17.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000	2000
18.	Measured Concentration of	µg/m <sup>3</sup>	288	223	337	298

Instrument used : (1) Envirotech make 2 Nos. RDS (APM - 460 BL) (2) 2 Nos. Gaseous Sampling Kit (APM 411)

(3) Ecotech make Atteachment of 2 Nos. PM 2.5 Sampler (AAS 127)

Calibration due on: (1) 05/05/2014 (2) 05/05/2014 (3) 04/05/2014





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Ref. No. 313/11/2013-14

Date: 04/12/2013

### FUGITIVE EMISSION MONITORING REPORT

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_2/4/6

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	----	11/11/2013	11/11/2013	12/11/2013
03.	Time of sampling	----	9.45	10.15	9.40
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	-----	N	N	N
06.	Average wind Speed	Km/Hr.	5 to 15	5 to 15	4 to 12
07.	Average flow rate during sampling	m <sup>3</sup> /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/m <sup>3</sup>	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m <sup>3</sup>	2287	2345	2040
11.	Permissible limits for SO <sub>2</sub>	µg/m <sup>3</sup>	150	150	150
12.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	12.4	13.9	13.4
13.	Permissible limits for NO <sub>2</sub>	µg/m <sup>3</sup>	120	120	120
14.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	20.9	22.3	21.2
15.	Permissible limit for CO **	µg/m <sup>3</sup>	5000	5000	5000
16.	Measured Concentration of CO	µg/m <sup>3</sup>	257	366	242

Instrument used : (1) Envirotech make 2 Nos. RDS (APM - 460 BL) (2) 2 Nos. Gaseous Sampling Kit (APM 411)

(3) Ecotech make Attachment of 2 Nos. PM 2.5 Sampler (AAS 127)

Calibration due on: (1) 05/05/2014 (2) 05/05/2014 (3) 04/05/2014

Royal Environment Auditing & Consultancy Service



Analyst

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Ref. No. 314/11/2013-14

Date: 04/12/2013

### FUGITIVE EMISSION MONITORING REPORT

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_2/4/6

Sr. No.	Particulars	Unit	A - 4	A - 5	A - 6
01.	Location of Ambient	----	Sinter 2 Ground Hopper	DISP	Sinter 1 Main to PMD
02.	Date of sampling	----	12/11/2013	22/11/2013	22/11/2013
03.	Time of sampling	----	9.55	10.15	10.35
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	----	N	N	N
06.	Average Wind Speed	Km/Hr.	4 to 12	4 to 16	4 to 16
07.	Average flow rate during sampling	m <sup>3</sup> /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/m <sup>3</sup>	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m <sup>3</sup>	1457	1224	1914
11.	Permissible limits for SO <sub>2</sub>	µg/m <sup>3</sup>	150	150	150
12.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	12.7	13.2	13.0
13.	Permissible limits for NO <sub>2</sub>	µg/m <sup>3</sup>	120	120	120
14.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	20.2	22.4	21.1
15.	Permissible limit for CO **	µg/m <sup>3</sup>	5000	5000	5000
16.	Measured Concentration of CO	µg/m <sup>3</sup>	219	312	247

Instrument used : (1) Envirotech make 2 Nos. RDS (APM - 460 BL) (2) 2 Nos. Gaseous Sampling Kit (APM: 411)

(3) Ecotech make Attachment of 2 Nos. PM 2.5 Sampler (AAS 127)

Calibration due on: (1) 05/05/2014 (2) 05/05/2014 (3) 04/05/2014

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Ref. No. : 315/11/2013-14

Date: 04/12/2013

### Bag Filter Efficiency Report

#### APCM Inlet

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	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5	Stack No. 6
01	Date of Sampling	---	13/11/2013	12/11/2013	22/11/2013	13/11/2013	12/11/2013	14/11/2013
02	Attached to		Zinc Coating -I	Common stack Mg Converter- I &II	Core Cleaning & Dusting-I	Barrel Grinding - I	Barrel Grinding - II	Sand Reclamation
03	Stack Height	Meter	30	30	30	30	30	32
04	Stack Diameter	Meter	0.488	0.584	0.588	0.584	0.584	---
05	Stack Temperature	°C	48	72	41	47	42	90
06	Ambient Temperature	°C	31	31	33	32	32	31
07	Average Velocity of Flue Gases	M/Sec.	14.2	17.6	13.5	13.1	12.4	11.7
08	IsoKinetic Flowrate for Sampling	LPM	25	28	24	23	22	18
09	Inlet	mg	1942	1732	1654	1849	1710	1479
10	Outlet	mg	19	53	33	31	48	29
11	Efficiency	%	99.02	96.94	98.00	98.32	97.19	98.04

Note : Minimum Detectable Limit of SO<sub>2</sub> & Nox is 0.1 and 0.01 ppm respectively.

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

Both Stack kit have calibration Due on : 05/05/2014

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Ref. No. : 316/11/2013-14

Date: 04/12/2013

### Bag Filter Efficiency Report

#### APCM Inlet

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	Stack No. 7	Stack No. 8	Stack No. 9	Stack No. 10	Stack No. 11	Stack No. 12	Stack No. 13
01	Date of Sampling	---	12/11/2013	13/11/2013	24/11/2013	12/11/2013	22/11/2013	13/11/2013	23/11/2013
02	Attached to	---	Zinc Coating - II	Zinc Coating-III	Zinc Coating -IV & V	Mg Converter - III	Core Cleaning & Dusting-II	Barrel Grinding-III	Barrel Grinding-IV & V
03	Stack Height	Meter	30	30	30	30	30	30	25
04	Stack Diameter	Meter	----	----	----	0.488	0.588	0.584	0.488
05	Stack Temperature	°C	52	49	46	54	42	52	51
06	Ambient Temperature	°C	31	31	32	32	31	32	33
07	Average Velocity of Flue Gases	M/Sec.	13.7	12.6	9.8	10.7	12.2	13.4	11.7
08	IsoKinetic Flowrate for Sampling	LPM	23	22	17	18	22	23	20
09	Inlet	mg	1794	1687	1564	1717	1702	1351	1545
10	Outlet	mg	19	16	13	41	44	46	41
11	Efficiency	%	98.94	99.05	99.17	97.61	97.41	96.60	97.35

Note : Minimum Detectable Limit of SO<sub>2</sub> & Nox is 0.1 and 0.01 ppm respectively.

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

Both Stack kit have calibration Due on : 05/05/2014

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Ref. No. 317/11/2013-14

Date: 04/12/2013

### STACK EMISSION MONITORING RESULTS

#### Sinter Plant-I

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	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5	Stack No. 6
01	Date of Sampling	---	07/11/2013	07/11/2013	Not Running During Visit	Not Running During Visit	07/11/2013	09/11/2013
02	Time of sampling	---	10.15	11.20			14.00	10.30
03	Stack Attached to	---	Sinter Furnace	Discharge End	Fuel & Flux Crusher and Screening	Fuel & Flux Crushing House	Secondary Mixture House	Primary Mixture House
04	Air Pollution Control Measures	---	ESP	ESP	Bag Filter	Bag Filter	---	---
05	Stack Height	Meter	50	32.8	32.8	27.05	36.08	19.75
06	Stack Diameter	Meter	2.0	1.30	1.40	0.70	1.25	1.25
07	Stack Temperature	°C	148	154	---	---	60	83
08	Ambient Temperature	°C	31	32	---	---	32	31
09	Average Velocity of Flue Gases	M/Sec.	9.5	16.1	---	---	4.4	4.9
10	Isokinetic flow rate for P.M. Sampling	LPM	13	21	---	---	17	17
11	Gaseous Sampling Flow Rate	LPM	2.0	---	---	---	---	---
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm <sup>3</sup>	84	37	---	---	38	51
14	Permissible limits for SO <sub>2</sub>	ppm	100	ND	NA	NA	NA	NA
15	Measured Concentration of SO <sub>2</sub>	ppm	15.3	---	---	---	---	---
16	Permissible limits for NO <sub>x</sub>	ppm	50	ND	NA	NA	NA	NA
17	Measured Concentration of NO <sub>x</sub>	ppm	11.6	---	---	---	---	---

Note : Minimum Detectable Limit of SO<sub>2</sub> & Nox is 0.1 and 0.01 ppm respectively.

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

Both Stack kit have calibration Due on : 05/05/2014

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Analyst

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Ref. No. : 318/11/2013-14

Date: 04/12/2013

### STACK EMISSION MONITORING RESULTS

#### Sinter Plant- II

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	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5	Stack No. 6	Stack No. 7
01	Date of Sampling	---	08/11/2013	08/11/2013	Not Running During Visit	09/11/2013	08/11/2013	22/11/2013	Not Running During Visit
02	Time of sampling	Hr.	10.10	11.15		11.45	14.30	11.10	
03	Stack Attached to	---	Sinter Furnace	Discharging End of sinter de-dusting system	Fuel crushing de-duster system (Flux)	Primary Mixer De-duster system	Secondary Mixer De- duster system	Fuel Screening deduster System (Flux Screening Stack)	Fuel crushing de- duster system (Fuel)
04	Air Pollution Control Measures	---	ESP	ESP	Dust Collector	---	---	Dust Collector	Dust Collector
05	Stack Height	Meter	50	50	30	30	30	30	30
06	Stack Diameter	Meter	2	1.3	0.7	1.25	1.25	0.7	0.7
07	Stack Temperature	°C	141	138	---	59	43	46	---
08	Ambient Temperature	°C	31	32	---	32	33	32	---
09	Average Velocity of Flue Gases	M/Sec.	11.2	12.6	---	4.6	3.9	4.3	---
10	Isokinetic flow rate for P.M. Sampling	LPM	15	17	---	18	16	17	---
11	Gaseous Sampling Flow Rate	LPM	2.0	---	---	---	---	---	---
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm <sup>3</sup>	37	41	---	52	35	30	---
14	Permissible limits for SO <sub>2</sub>	ppm	100	ND	NA	NA	NA	NA	NA
15	Measured Concentration of SO <sub>2</sub>	ppm	14.7	---	---	---	---	---	---
16	Permissible limits for NO <sub>x</sub>	ppm	50	ND	NA	NA	NA	NA	NA
17	Measured Concentration of NO <sub>x</sub>	ppm	20.8	---	---	---	---	---	---

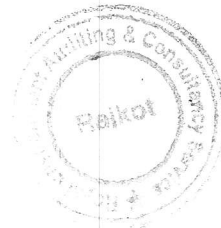
Note : Minimum Detectable Limit of SO<sub>2</sub> & Nox is 0.1 and 0.01 ppm respectively.

NA= Not Applicable

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

Both Stack kit have calibration Due on : 05/05/2014

Royal Environment Auditing & Consultancy Service



Analyst -



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Ref. No. 319/11/2013-14

Date: 04/12/2013

### STACK EMISSION MONITORING RESULTS

#### BLAST FURNACE-1 & PCI

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	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5
01	Date of Sampling	---	11/11/2013	11/11/2013	11/11/2013	09/11/2013	21/11/2013
02	Time of sampling	Hr.	10.10	11.15	12.20	9.45	12.15
03	Stack Attached to	---	Boiler - I	Boiler - II	Dedusting System	Stove Stack	Coal Pulverization
04	Air Pollution Control Measures	---	---	---	Bag Filter	---	Bag Filter
05	Stack Height	Meter	45	45	35.0	50.0	32.0
06	Stack Diameter	Meter	1.380	1.380	1.484	2.250	---
07	Stack Temperature	°C	162	151	70	308	47
08	Ambient Temperature	°C	31	33	33	31	32
09	Average Velocity of Flue Gases	M/Sec.	5.7	5.0	6.2	5.1	6.70
10	Isokinetic flow rate for P.M. Sampling	LPM	17	15	23	11	27
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm <sup>3</sup>	8	7	44	5	21.00
14	Permissible limits for SO <sub>2</sub>	mg/Nm <sup>3</sup>	40	40	40	40	100 (ppm)
15	Measured Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	4.5	5.7	N.D.	N.D.	N.D.
16	Permissible limits for NO <sub>x</sub>	mg/Nm <sup>3</sup>	25	25	25	25	50 (ppm)
17	Measured Concentration of Nox	mg/Nm <sup>3</sup>	8.4	8.8	5.7	5.2	N.D.

Note : Minimum Detectable Limit of SO<sub>2</sub> & Nox is 0.1 and 0.01 ppm respectively.

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

Both Stack kit have calibration Due on : 05/05/2014

Royal Environment Auditing & Consultancy Service



Analyst

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Ref. No 320/11/2013-14

Date: 04/12/2013

### STACK EMISSION MONITORING RESULTS

#### BLAST FURNACE-2

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	Stack No. 1	Stack No. 2	Stack No. 3
01	Date of Sampling	---	11/11/2013	21/11/2013	22/11/2013
02	Time of sampling	Hr.	14.30	9.45	16.15
03	Stack Attached to	---	Dedusting System	Stove Stack	Iron Ore fine & Dust Collecting System
04	Air Pollution Control Measures	---	Bag Filter	---	Bag Filter
05	Stack Height	Meter	40.0	65.0	30.0
06	Stack Diameter	Meter	1.484	2.250	0.650
07	Stack Temperature	°C	57	310	45
08	Ambient Temperature	°C	33	31	32
09	Average Velocity of Flue Gases	M/Sec.	6.3	5.2	8.8
10	Isokinetic flow rate for P.M. Sampling	LPM	24	11	15
11	Gaseous Sampling Flow Rate	LPM	---	---	---
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	150	150
13	Measured Concentration of PM.	mg/Nm <sup>3</sup>	58	5	41
14	Permissible limits for SO <sub>2</sub>	mg/Nm <sup>3</sup>	NA	40	NA
15	Measured Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	---	2.36	---
16	Permissible limits for NO <sub>x</sub>	mg/Nm <sup>3</sup>	NA	25	NA
17	Measured Concentration of Nox	mg/Nm <sup>3</sup>	---	8.97	---

Note : Minimum Detectable Limit of SO<sub>2</sub> & Nox is 0.1 and 0.01 ppm respectively.

\*\*NA=Not Applicable

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

Both Stack kit have calibration Due on : 05/05/2014

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Ref. No. : 321/11/2013-14

Date: 04/12/2013

### STACK EMISSION MONITORING RESULTS

#### Captive Power Plant

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	Stack No. 6	Stack No. 7	Stack No. 8	Stack No. 9
01	Date of Sampling	---	Not running during visit	Not running during visit	21/11/2013	21/11/2013
02	Time of sampling	Hr.			14.15	15.10
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	---	---	162	149
08	Ambient Temperature	°C	---	---	33	33
09	Average Velocity of Flue Gases	M/Sec.	---	---	10.1	8.8
10	Isokinetic flow rate for P.M. Sampling	LPM	---	---	24	26
11	Gaseous Sampling Flow Rate	LPM	---	---	2.0	2.0
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	150	150	150
13	Measured Concentration of PM.	mg/Nm <sup>3</sup>	---	---	58	42
14	Permissible limits for SO <sub>2</sub>	ppm	100	100	100.0	100
15	Measured Concentration of SO <sub>2</sub>	ppm	---	---	25.2	21.4
16	Permissible limits for Nox	ppm	50	50	50.0	50
17	Measured Concentration of Nox	ppm	---	---	18.8	15.1

Note : Minimum Detectable Limit of SO<sub>2</sub> & Nox is 0.1 and 0.01 ppm respectively.

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

Both Stack kit have calibration Due on : 05/05/2014





# Royal

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Ref. No. 322/11/2013-14

Date: 04/12/2013

### STACK EMISSION MONITORING RESULTS

#### Pipe Complex

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	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5	Stack No. 6	Stack No. 7
01	Date of Sampling	---	24/11/2013	24/11/2013	14/11/2013	14/11/2013	14/11/2013	13/11/2013	13/11/2013
02	Time of sampling	Hr.	11.30	12.25	Not Running During Visit	Not Running During Visit	10.20	12.15	14.30
03	Stack Attached to	---	Shot Blasing (Coating Plant) - I	Shot Blasing (Coating Plant) - II	Shot Blasing (Coating Plant) - III	Bitumin Drying Oven - I	Common stack Bitumin Drying Oven - II & Boiler	Barrel Grinding - I	Barrel Grinding - II
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	Bag Filter	---	---	Bag Filter	Bag Filter
05	Stack Height	Meter	10.0	10.0	10.0	32.8	32.8	30	30
06	Stack Diameter	Meter	0.41	0.41	1.125	1.375	1.375	0.584	0.584
07	Stack Temperature	°C	49	51	---	---	151	44	47
08	Ambient Temperature	°C	32	33	---	---	31	33	33
09	Average Velocity of Flue Gases	M/Sec.	7.6	6.5	---	---	9.9	12.3	12.5
10	Isokinetic flow rate for P.M. Sampling	LPM	13	11	---	---	22	21	22
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	---	---	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	150	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm <sup>3</sup>	48	40	---	---	60	41	39
14	Permissible limits for SO <sub>2</sub>	mg/Nm <sup>3</sup>	40	40	40	100 ppm	100 ppm	40	40
15	Measured Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	---	---	---	---	7.8	---	---
16	Permissible limits for Nox	mg/Nm <sup>3</sup>	25	25	25	50 ppm	50 ppm	25	25
17	Measured Concentration of Nox	mg/Nm <sup>3</sup>	---	---	---	---	8.4	---	---

Note : Minimum Detectable Limit of SO<sub>2</sub> & Nox is 0.1 and 0.01 ppm respectively.

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

Both Stack kit have calibration Due on : 05/05/2014

Royal Environment Auditing & Consultancy Service



Analyst



# Royal

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Ref. No. : 323/11/2013-14

Date: 04/12/2013

### STACK EMISSION MONITORING RESULTS

#### Pipe Copmplex

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	Stack No. 8	Stack No. 9	Stack No. 10	Stack No. 11	Stack No. 12	Stack No. 13
01	Date of Sampling	---	12/11/2013	12/11/2013	13/11/2013	12/11/2013	13/11/2013	13/11/2013
02	Time of sampling	Hr.	12.15	11.20	13.10	14.15	15.20	16.30
03	Stack Attached to	---	Common stack Mg Converter- I&II	Mg Converter -III	Zn Coating - I	Zn Coating - II	Zn Coating - III	Zn Coating - IV & V
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Seprater & Bag Filter
05	Stack Height	Meter	30	30	30	30	30	30
06	Stack Diameter	Meter	0.488	0.488	0.584	0.584	0.584	0.850
07	Stack Temperature	°C	65	56	47	49	42	40
08	Ambient Temperature	°C	33	32	33	33	33	32
09	Average Velocity of Flue Gases	M/Sec.	16.3	11.2	12.3	11.5	10.1	10.5
10	Isokinetic flow rate for P.M. Sampling	LPM	26	19	21	20	18	19
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	---	---	---	---
h	Permissible limits for PM	mg/Nm3	150	150	20 (Zn)	20 (Zn)	20 (Zn)	20 (Zn)
13	Measured Concentration of PM	mg/Nm3	61	43	15 (Zn)	20 (Zn)	14 (Zn)	19 (Zn)
14	Permissible limits for SO2	mg/Nm3	40	40	NA	NA	NA	NA
15	Measured Concentration of SO2	mg/Nm3	N.D.	N.D.	---	---	---	---
16	Permissible limits for Nox	mg/Nm3	25	25	NA	NA	NA	NA
17	Measured Concentration of Nox	mg/Nm3	5.8	4.6	---	---	---	---

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

Both Stack kit have calibration Due on : 05/05/2014

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Ref. No. : 324/11/2013-14

Date: 04/12/2013

### STACK EMISSION MONITORING RESULTS

#### Pipe Complex

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	Stack No. 14	Stack No. 15	Stack No. 16	Stack No. 17	Stack No. 18	Stack No. 19
01	Date of Sampling	---	22/11/2013	22/11/2013	10/11/2013	10/11/2013	10/11/2013	10/11/2013
02	Time of sampling	Hr.	11.10	12.20	10.00	10.45	11.30	12.15
03	Stack Attached to	---	Core Cleaning & Dusting-I	Core Cleaning & Dusting-II	Core Shop-I	Core Shop-II	Core Shop-III	Core Shop-IV
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	---	---	---	---
05	Stack Height	Meter	30	30	30	30	30	30
06	Stack Diameter	Meter	0.588	0.59	0.584	0.584	0.584	0.584
07	Stack Temperature	°C	42	40	37	39	42	38
08	Ambient Temperature	°C	32	32	31	31	31	32
09	Average Velocity of Flue Gases	M/Sec.	11.8	12.1	4.4	4.2	3.9	8.6
10	Isokinetic flow rate for P.M. Sampling	LPM	21	22	20	22	19	15
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
13	Measured Concentration of PM	mg/Nm3	40	46	41	34	45	54
14	Permissible limits for SO2	mg/Nm3	40	40	40	40	40	40
15	Measured Concentration of SO2	mg/Nm3	3.4	3.1	N.D.	4.6	5.0	4.8
16	Permissible limits for Nox	mg/Nm3	25	25	25	25	25	25
17	Measured Concentration of Nox	mg/Nm3	7.5	6.3	4.5	3.8	3.1	4.7

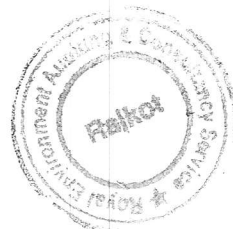
Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.

N.D.= Not Detectable

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

Both Stack kit have calibration Due on : 05/05/2014

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Ref. No. : 325/11/2013-14

Date: 04/12/2013

### STACK EMISSION MONITORING RESULTS

#### Pipe Complex

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	Stack No. 20	Stack No. 21	Stack No. 22	Stack No. 23	Stack No. 24	Stack No. 25
01	Date of Sampling	---	23/11/2013	23/11/2013	23/11/2013	13/11/2013	23/11/2013	14/11/2013
02	Time of sampling	Hr.	10.00	11.05	14.30	14.30	16.30	9.45
03	Stack Attached to	---	Annealing Furnace - I	Annealing Furnace - I	Annealing Furnace - II	Barrel Grinding-III	Barrel Grinding -IV&V	Sand Reclamation
04	Air Pollution Control Measures	---	---	---	---	Bag Filter	Bag Filler	Bag Filter
05	Stack Height	Meter	32	32	32	30	25	32
06	Stack Diameter	meter	1.375	1.375	1.375	0.488	0.488	0.885
07	Stack Temperature	°C	127	152	163	50	47	69
08	Ambient Temperature	°C	31	33	33	33	32	31
09	Average Velocity of Flue Gases	M/Sec.	6.1	7.6	7.9	12.2	11.4	10.6
10	Isokinetic flow rate for P.M. Sampling	LPM	19	23	23	22	19	18
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
13	Measured Concentration of PM.	mg/Nm3	31	24	39	46	57	33
14	Permissible limits for SO2	mg/Nm3	100 (PPM)	100 (PPM)	100 (ppm)	40	40	40
15	Measured Concentration of SO2	mg/Nm3	3.6(PPM)	5.3(PPM)	5.1(PPM)	3.8	3.2	N.D.
16	Permissible limits for Nox	mg/Nm3	50 (PPM)	50 (PPM)	50 (PPM)	25	25	25
17	Measured Concentration of Nox	mg/Nm3	4.5 (PPM)	5.6 (PPM)	5.9 (PPM)	4.4	4.9	N.D.

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

Both Stack kit have calibration Due on : 05/05/2014

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Analyst

*M. K. Nayak*



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Ref. No. : 326/11/2013-14

Date: 04/12/2013

### STACK EMISSION MONITORING RESULTS

#### Small Dia Ductile Iron Pipe Complex

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	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5	Stack No. 6
01	Date of Sampling	---	20/11/2013	20/11/2013	20/11/2013	20/11/2013	20/11/2013	20/11/2013
02	Time of sampling	Hr.	9.40	10.45	11.50	Not Running During Visit	14.30	15.45
03	Stack Attached to	---	Annealing Furnace - I	Annealing Furnace - I	Magnesium Treatment	Socket Cleaning	Zinc Coating	Tri- Grinding Section
04	Air Pollution Control Measures	---	---	---	Bag Filter	Bag Filter	Bag Filter	Bag Filter
05	Stack Height	Meter	45	45	30	30	30	30
06	Stack Diameter	Meter	---	---	---	---	---	---
07	Stack Temperature	°C	136	147	68	---	41	36
08	Ambient Temperature	°C	31	32	32	---	33	33
09	Average Velocity of Flue Gases	M/Sec.	6.7	6.2	5.8	---	7.7	9.5
10	Isokinetic flow rate for P.M. Sampling	LPM	21	19	22	---	14	18
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	---	---	---	---
12	Permissible limits for PM	mg/Nm <sup>3</sup>	50	50	50	50	50	50
13	Measured Concentration of PM.	mg/Nm <sup>3</sup>	17	21	32	---	20 (Zn)	38
14	Permissible limits for SO <sub>2</sub>	PPM	100	100	NA	NA	NA	NA
15	Measured Concentration of SO <sub>2</sub>	PPM	13.5	14.6	---	---	---	---
16	Permissible limits for Nox	PPM	50	50	NA	NA	NA	NA
17	Measured Concentration of Nox	PPM	4.7	5.8	---	---	---	---

Note : Minimum Detectable Limit of SO<sub>2</sub> & 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

Both Stack kit have calibration Due on : 05/05/2014

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Ref. No. : 328/11/2013-14

Date: 04/12/2013

### WORK ZONE NOISE LEVEL MEASUREMENT

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Date of sampling : 6th to 16th November,2013

Sr. No.	Location of Sampling	Results Avg. in dB(A)
01.	Inside Control Room of Sinter Plant	68.4
02.	Nr. Stock House of BF	74.6
03.	Inside Control Room of BF	65.1
04.	Inside Control Room of Blower House	67.6
05.	Inside Control of Cast House	65.2
06.	Inside Control Room of CPP	61.9
07.	Inside Control Room of Annealing Furnace of DISP	62.3
08.	Inside Laboratory of BF	60.0
09.	Inside Laboratory of DISP	64.2
10.	Inside ID & OD Control Room of JCO Plant	66.9
11.	Inside Control Room – Mill area of Spiral Plant	64.4
12.	Inside Spiral – 1	65.8
13.	Nr. Pipe cutting Area of Spiral Plant	73.5
14.	Inside JCO Plant	68.3
15.	Nr. JCO Press	66.7
16.	Inside DISP Plant	73.7
17.	Inside Coating Plant	68.9
18.	Nr. CCM SDP-II	72.8
19.	Inside Control Room of Annealing Furnace of SDP-II	62.9
20.	Inside New Coating Plant	72.6
21.	Inside Control Room of BF-2	69.1
22.	Inside Spiral-2	73.2
23.	Nr Zinc Coating SDP-II	74.4
24.	Nr. Stock House of BF-2	68.3
25.	C/R Blower House of BF-2	68.8

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 : 29/09/2014



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Ref. No. : 329/11/2013-14

Date: 04/12/2013

### AMBIENT NOISE LEVEL MEASUREMENT

Name of company : Jindal Saw Limited,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 6th to 16th November, 2013

Sr. No.	Location of Sampling	Results in dB(A) (Day Time)	Results in dB(A) (Night Time)
	<b>Permissible Limits</b>	<b>75.0</b>	<b>70.0</b>
01.	Nr. Admin. Building	62.5	60.1
02.	Nr. Old Colony	61.8	59.8
03.	Nr. LPG Yard	65.9	62.7
04.	Nr. Sinter Plant	69.4	64.2
05.	Nr. R. O. Plant	68.1	60.0
06.	Nr. Gate No. 2	68.9	63.4
07.	Nr. New Colony	64.4	61.1
08.	Nr. SDP-2	68.9	66.8
09.	Nr. BLAST FURNACE-2	69.7	70.1
10.	Nr. New Coating	67.1	64.2

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 : 29/09/2014

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Analyst

*Manoj*



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Ref. No. 330/11/2013-14

Date: 04/12/2013

### REPORT OF DOMESTIC WASTE WATER ANALYSIS

Name of company : Jindal Saw Limited,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

Source Of Sample Collection : Domestic Effluent After Treatment

Date of Sampling : 29/11/2013

Sr. No.	Parameters	Unit	GPCB limits	STP Inlet	STP Outlet
01.	pH	pH Unit	----	7.52	7.19
02.	BOD (3 Days at 27°C)	mg/l	<20	220	19
03.	Suspended Solids	mg/l	<30	108	26
04.	Residual Chlorine	mg/l	Min. 0.5	----	0.60

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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.: **Sinter, BF, DISP, JCO & Coating Units at Jindal Saw Limited, Samaghogha.**
- 2 Raw materials, by products and finished products involved in the process. **TOTAL DUST**
- 3 Particulars of sampling

Date of Sampling : 19th to 21st October , 2013

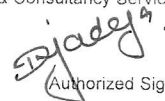
Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Refrance Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Spiral Plant Nr. ID/OD	Total Dust	Personal Respirable Dust sampler APM 800	02	4-5	4.50	10	Gravimetric	8	----		Mr. Manoj Sonrat
2	JCO Plant Nr. JCO Press	Total Dust		02	3-4	3.50	10	Gravimetric	6	----		
3	Sinter Plant At First Floor	Total Dust		02	2-3.5	2.75	10	Gravimetric	6	----		
4	BF Plant (Cast House)	CO		02	0.7-0.8	0.75	2	Gravimetric	7	----		
		Total Dust			3-4.5	3.8	10					
5	Coating Plant-1 (Blasting Area)	Total Dust		02	3-5	4.0	10	Gravimetric	8	----		
6	DISP Plant Main Entrance	Total Dust		02	4-5.5	4.8	10	Gravimetric	9	----		
7	Spiral Plant Nr. ID/OD	Total Dust		02	2.0-3.5	2.8	10	Gravimetric	7	----		
8	Coating Plant-2 (Blasting Area)	Total Dust		02	4-5	4.5	10	Gravimetric	8	----		
9	Coating Plant-3 (Blasting Area)	Total Dust		02	5-6	5.5	10	Gravimetric	7	----		
10	Small Dia Ductile Iron pipe	Total Dust	02	4-6	5.0	10	Gravimetric	8	----			

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

Calibration Date Due on : 11/12/2013

For. Royal Environment Auditing & Consultancy Service



  
Authorized Sign