



Royal

Environment Auditing & Consultancy Service

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

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

Ref. No. 153/06/2014-15

Date: 01/07/2014

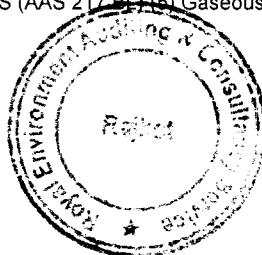
AMBIENT AIR QUALITY MONITORING REPORT

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	----	07/06/2014	07/06/2014	07/06/2014
03.	Time of sampling	----	9.10	9.30	10.10
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	WSW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	5 to 16	5 to 16	5 to 16
07.	Average flow rate during sampling	m ³ /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/m ³	57	68	45
11.	Permissible limits for PM 2.5	µg/m³	60	60	60
12.	Measured Concentration of PM 2.5	µg/m ³	31	45	25
13.	Permissible limits for SO₂	µg/m³	80	80	80
14.	Measured Concentration of SO ₂	µg/m ³	10.8	12.2	10.1
15.	Permissible limits for NO₂	µg/m³	80	80	80
16.	Measured Concentration of NO ₂	µg/m ³	18.6	22.7	19.7
17.	Permissible limit for CO **	µg/m³	2000	2000	2000
18.	Measured Concentration of CO	µg/m ³	246	315	214

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)
Calibration due on 04/06/2015





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Ref. No. 154/06/2014-15

Date: 03/06/2014

AMBIENT AIR QUALITY MONITORING REPORT

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

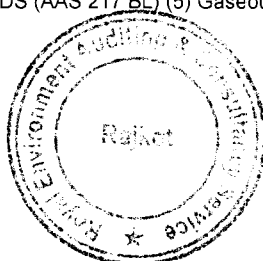
Test Method : As per IS Standards - 5182_2/4/6

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	---	08/06/2014	08/06/2014	08/06/2014
03.	Time of sampling	---	9.20	9.40	10.20
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	SW	SW	SW
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.	Permissible limits for PM 10	µg/m3	100	100	100
10.	Measured Concentration of PM 10	µg/m3	59	70	42
11.	Permissible limits for PM 2.5	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	36	47	26
13.	Permissible limits for SO2	µg/m3	80	80	80
14.	Measured Concentration of SO2	µg/m3	10.4	12.9	9.2
15.	Permissible limits for NO2	µg/m3	80	80	80
16.	Measured Concentration of NO2	µg/m3	19.9	23.1	20.4
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	280	339	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)

Calibration due on 04/06/2015





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Ref. No 155/06/2014-15

Date: 01/07/2014

AMBIENT AIR QUALITY MONITORING REPORT

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

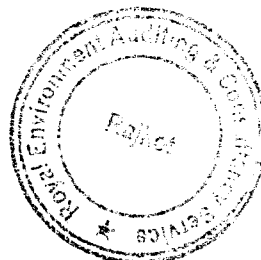
Test Method : As per IS Standards - 5182_2/4/6

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	----	12/06/2014	12/06/2014	12/06/2014
03.	Time of sampling	----	9.30	9.50	10.10
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	S	S	S
06.	Average Wind Speed	Km/Hr.	4 to 12	4 to 12	4 to 12
07.	Average flow rate during sampling	m ³ /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 ³	100	100	100
10.	Measured Concentration of PM 10	µg/m ³	52	64	47
11.	Permissible limits for PM 2.5	µg/m ³	60	60	60
12.	Measured Concentration of PM 2.5	µg/m ³	28	38	24
13.	Permissible limits for SO ₂	µg/m ³	80	80	80
14.	Measured Concentration of SO ₂	µg/m ³	10.6	14.1	10.3
15.	Permissible limits for NO ₂	µg/m ³	80	80	80
16.	Measured Concentration of NO ₂	µg/m ³	21.3	22.6	19.8
17.	Permissible limit for CO **	µg/m ³	2000	2000	2000
18.	Measured Concentration of CO	µg/m ³	254	378	215

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 04/06/2015

Royal Environment Auditing & Consultancy Service



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Analyst



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Ref. No. 156/06/2014-15

Date: 01/07/2014

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	---	13/06/2014	13/06/2014	13/06/2014
03.	Time of sampling	---	9.40	10.00	10.20
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	S	S	S
06.	Average Wind Speed	Km/Hr.	5 to 14	5 to 14	5 to 14
07.	Average flow rate during sampling	m ³ /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 ³	100	100	100
10.	Measured Concentration of PM 10	µg/m ³	54	68	45
11.	Permissible limits for PM 2.5	µg/m ³	60	60	60
12.	Measured Concentration of PM 2.5	µg/m ³	30	34	20
13.	Permissible limits for SO ₂	µg/m ³	80	80	80
14.	Measured Concentration of SO ₂	µg/m ³	11.6	12.2	10.3
15.	Permissible limits for NO ₂	µg/m ³	80	80	80
16.	Measured Concentration of NO ₂	µg/m ³	20.6	23.1	18.7
17.	Permissible limit for CO **	µg/m ³	2000	2000	2000
18.	Measured Concentration of CO	µg/m ³	297	368	224

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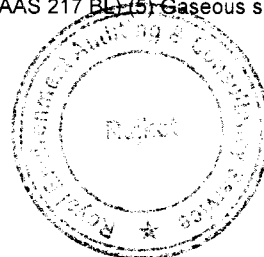
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Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

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	---	20/06/2014	20/06/2014	20/06/2014
03.	Time of sampling	---	9.00	9.20	9.50
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	SW	SW	SW
06.	Average Wind Speed	Km/Hr.	4 to 11	4 to 11	4 to 11
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	Permissible limits for PM 10	µg/m3	100	100	100
10.	Measured Concentration of PM 10	µg/m3	50	69	46
11.	Permissible limits for PM 2.5	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	30	46	32
13.	Permissible limits for SO2	µg/m3	80	80	80
14.	Measured Concentration of SO2	µg/m3	11.9	13.2	10.5
15.	Permissible limits for NO2	µg/m3	80	80	80
16.	Measured Concentration of NO2	µg/m3	21.2	25.1	20.6
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	304	346	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 Attechr 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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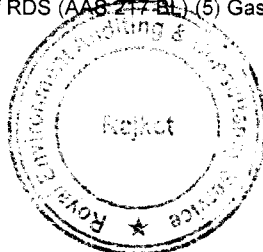
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Tal. : Mundra, Dist. Kutch

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	----	21/06/2014	21/06/2014	21/06/2014
03.	Time of sampling	----	9.10	9.30	10.00
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	-----	SW	SW	SW
06.	Average Wind Speed	Km/Hr.	3 to10	3 to10	3 to10
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	55	67	50
11.	Permissible limits for PM 2.5	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	26	48	30
13.	Permissible limits for SO2	µg/m3	80	80	80
14.	Measured Concentration of SO2	µg/m3	10.7	12.2	12.7
15.	Permissible limits for NO2	µg/m3	80	80	80
16.	Measured Concentration of NO2	µg/m3	22.4	23.3	21.6
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	356	391	267

Instrument used : (1) Envirotech make 1 No. of RDS (APM - 460 BL) (2) 1 No. of Gaseous Sampling Kit (APM 411) (3) Ecotech make Attechmer 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. : 159/06/2014-15

Date: 01/07/2014

AMBIENT AIR QUALITY MONITORING REPORT

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

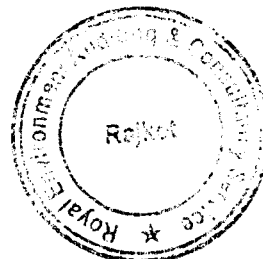
Test Method : As per IS Standards - 5182_2/4/6

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	----	26/06/2014	26/06/2014	26/06/2014
03.	Time of sampling	----	9.20	9.40	10.00
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	SW	SW	SW
06.	Average Wind Speed	Km/Hr.	2 to 12	2 to 12	2 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	52	70	44
11.	Permissible limits for PM 2.5	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	26	46	31
13.	Permissible limits for SO2	µg/m3	80	80	80
14.	Measured Concentration of SO2	µg/m3	12.2	13.4	10.8
15.	Permissible limits for NO2	µg/m3	80	80	80
16.	Measured Concentration of NO2	µg/m3	21.5	22.8	19.3
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	328	371	219

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 04/06/2015





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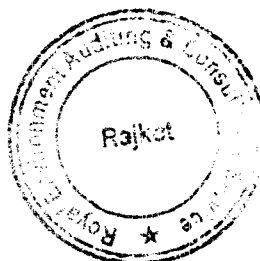
Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

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	---	27/06/2014	27/06/2014	27/06/2014
03.	Time of sampling	----	9.30	9.50	10.10
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	SW	SW	SW
06.	Average Wind Speed	Km/Hr.	5 to 12	5 to 12	5 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	61	70	52
11.	Permissible limits for PM 2.5	µg/m3	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	35	49	30
13.	Permissible limits for SO2	µg/m3	80	80	80
14.	Measured Concentration of SO2	µg/m3	11.2	13.5	10.6
15.	Permissible limits for NO2	µg/m3	80	80	80
16.	Measured Concentration of NO2	µg/m3	20.6	24.6	21.3
17.	Permissible limit for CO **	µg/m3	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	306	387	216

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 04/06/2015



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Date: 01/07/2014

Ref. No. : 131/06/2014-15

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

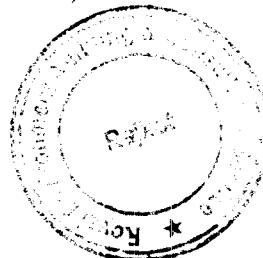
Sr.No.	Particulars	Unit	AAQM - 1 (S)	AAQM - 2 (SSW)	AAQM - 3 (WSW)	AAQM - 4 (NW)
01.	Location of Ambient	----	Old Colony (Nr. Environment Laboratory)	Nr. Rain Water Harvesting	LPG Yard (Nr. Water Reservoir)	Between Sinter - 2 & Spiral - 2
02.	Date of sampling	----	09/06/2014	09/06/2014	25/06/2014	25/06/2014
03.	Time of sampling	----	9.00	9.25	9.30	9.50
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	SW	SW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	3 to 14	3 to 14	2 to 12	2 to 12
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	48	69	62	58
11.	Permissible limits for PM 2.5	µg/m3	60	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	26	28	45	30
13.	Permissible limits for SO2	µg/m3	80	80	80	80
14.	Measured Concentration of SO2	µg/m3	10.2	12.1	14.4	12.8
15.	Permissible limits for NO2	µg/m3	80	80	80	80
16.	Measured Concentration of NO2	µg/m3	12.7	17.9	25.1	21.5
17.	Permissible limit for CO **	µg/m3	2000	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	114	207	352	238

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 04/06/2015

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Date: 01/07/2014

Ref. No. :132/06/2014-15

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

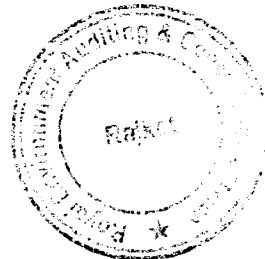
Sr. No.	Particulars	Unit	AAQM - 5 (NE)	AAQM - 6 (SE)	AAQM - 7 (SSE)	AAQM - 8 (E)
01.	Location of Ambient	----	Labour Colony	New Colony (Shopping Centre)	Admin Building	Weigh bridge
02.	Date of sampling	----	07/06/2014	07/06/2014	08/06/2014	08/06/2014
03.	Time of sampling	----	9.50	10.20	10.00	10.30
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	WSW	WSW	SW	SW
06.	Average Wind Speed	Km/Hr.	5 to 16	5 to 16	4 to 14	4 to 14
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
12.	Measured Concentration of PM 10	µg/m3	45	67	52	74
11.	Permissible limits for PM 2.5	µg/m3	60	60	60	60
10.	Measured Concentration of PM 2.5	µg/m3	22	35	22	35
13.	Permissible limits for SOx	µg/m3	80	80	80	80
14.	Measured Concentration of SOx	µg/m3	12.3	11.4	10.6	15.5
15.	Permissible limits for Nox	µg/m3	80	80	80	80
	Measured Concentration of NOx	µg/m3	20.4	21.8	22.9	26.1
17	Permissible limit for CO **	µg/m3	2000	2000	2000	2000
18	Measured Concentration of CO	µg/m3	248	186	231	431

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 04/06/2015

Royal Environment Auditing & Consultancy Service



Analyst



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Ref. No. :133/06/2014-15

Date: 01/07/2014

FUGITIVE EMISSION MONITORING REPORT

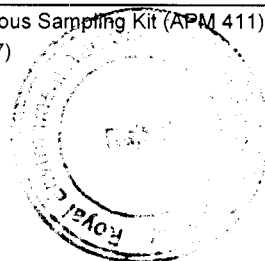
Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

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	----	11/06/2014	11/06/2014	12/06/2014
03.	Time of sampling	----	9.30	9.45	9.35
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	----	S	S	S
06.	Average Wind Speed	Km/Hr.	3 to 15	3 to 15	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	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m3	2241	2561	2738
11.	Permissible limits for SO2	µg/m3	150	150	150
12.	Measured Concentration of SO2	µg/m3	20.3	22.2	21.6
13.	Permissible limits for NO2	µg/m3	120	120	120
14.	Measured Concentration of NO2	µg/m3	29.2	30.1	28.1
15.	Permissible limit for CO **	µg/m3	5000	5000	5000
16.	Measured Concentration of CO	µg/m3	381	446	299

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 04/06/2015





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Ref. No. :134/06/2014-15

Date: 01/07/2014

FUGITIVE EMISSION MONITORING REPORT

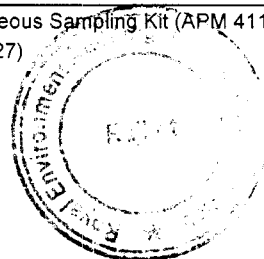
Name of company : Jindal Saw Limited,
Village: Samaghogha,
Tal. : Mundra, Dist. Kutch

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 "CCM" Area	Sinter 1 Main to PMD
02.	Date of sampling	----	12/06/2014	26/06/2014	26/06/2014
03.	Time of sampling	----	9.50	9.30	10.00
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	----	S	SW	SW
06.	Average Wind Speed	Km/Hr.	4 to 12	2 to 12	2 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	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m3	2314	990	1679
11.	Permissible limits for SO2	µg/m3	150	150	150
12.	Measured Concentration of SO2	µg/m3	20.3	15.4	16.8
13.	Permissible limits for NO2	µg/m3	120	120	120
14.	Measured Concentration of NO2	µg/m3	26.1	25.2	22.8
15.	Permissible limit for CO **	µg/m3	5000	5000	5000
16.	Measured Concentration of CO	µg/m3	228	478	269

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 04/06/2015





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Ref. No. : 135/06/2014-15

Date: 01/07/2014

Bag Filter & ESP 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

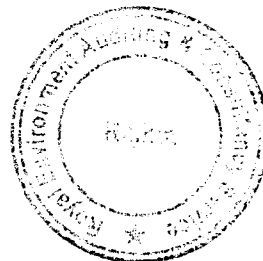
Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5	Stack No. 6	Stack No. 7
01	Date of Sampling	---	11/06/2014	13/06/2014	12/06/2014	11/06/2014	13/06/2014	13/06/2014	25/06/2014
02	Attached to		Sinter-1 Furnace	Sinter-1 Discharge end	Sinter-1 Flux Screening	Sinter-2 Furnace	Sinter-2 Discharge end	Sinter-2 Flux Crushing	Sinter-2 Flux Screening
03	Stack Height	Meter	---	---	---	---	---	---	---
04	Stack Duct Diameter	Meter	---	---	---	---	---	---	---
05	Stack Temperature	°C	138	120	46	131	123	53	50
06	Ambient Temperature	°C	35	36	34	35	35	35	36
07	Average Velocity of Flue Gases	M/Sec.	20.3	15.9	13.7	19.3	18.9	13.7	14.1
08	IsoKinetic Flowrate for Sampling	LPM	28	23	24	27	27	23	24
09	Inlet	mg	3548	2531	2120	3508	2014	1689	1896
10	Outlet	mg	64	40	34	62	28	25	28
11	Efficiency	%	98.20	98.42	98.40	98.23	98.61	98.52	98.52

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

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

Calibration due on 04/06/2015

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Ref. No. : 136/06/2014-15

Date: 01/07/2014

Bag Filter Efficiency Report

APCM Inlet

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

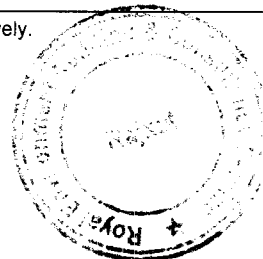
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	Stack No. 8	Stack No. 9	Stack No. 10	Stack No. 11
01	Date of Sampling	---	07/06/2014	07/06/2014	25/06/2014	09/06/2014
02	Attached to		Zinc Coating -I	Common stack Mg Converter- I &II	Core Cleaning & Dusting-I	Sand Reclamation
03	Stack Height	Meter	30	30	30	32
04	Stack Duct Diameter	Meter	0.488	0.584	0.588	---
05	Stack Temperature	°C	49	62	43	88
06	Ambient Temperature	°C	35	35	35	34
07	Average Velocity of Flue Gases	M/Sec.	15.8	16.5	14.9	15.9
08	IsoKinetic Flowrate for Sampling	LPM	27	27	26	25
09	Inlet	mg	1865	2897	1865	2569
10	Outlet	mg	26	65	38	62
11	Efficiency	%	98.61	97.76	97.96	97.59

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

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

Calibration due on 04/06/2015





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Ref. No. : 137/07/2014-15

Date: 01/07/2014

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

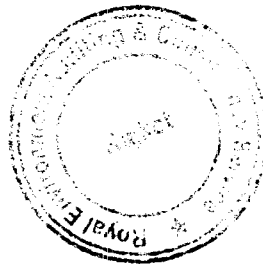
Sr. No.	Particulars	Unit	Stack No. 12	Stack No. 13	Stack No. 14	Stack No. 15	Stack No. 16
01	Date of Sampling	---	09/06/2014	09/06/2014	10/06/2014	10/06/2014	25/06/2014
02	Attached to	---	Zinc Coating - II	Zinc Coating-III	Zinc Coating -IV & V	Mg Converter - III	Core Cleaning & Dusting-II
03	Stack Height	Meter	30	30	30	30	30
04	Stack Duct Diameter	Meter	----	----	----	0.488	0.588
05	Stack Temperature	°C	48	46	47	53	45
06	Ambient Temperature	°C	37	38	38	36	34
07	Average Velocity of Flue Gases	M/Sec.	11.64	12.21	15.6	12.75	12.8
08	IsoKinetic Flowrate for Sampling	LPM	20	21	27	22	22
09	Inlet	mg	1723	1985	1876	2098	2013
10	Outlet	mg	20	15	20	40	35
11	Efficiency	%	98.84	99.24	98.93	98.09	98.26

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

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

Calibration due on 04/06/2015

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Ref. No. :138/06/2014-15

Date: 01/07/2014

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

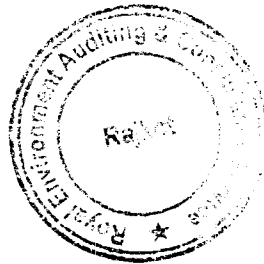
Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5	Stack No. 6
01	Date of Sampling	---	11/06/2014	28/06/2014	12/06/2014	Not Running During Visit	12/06/2014	27/06/2014
02	Time of sampling	---	9.30	10.20	11.30		9.30	10.40
03	Stack Attached to	---	Sinter Furnace	Discharge 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	157	132	47	---	52	88
08	Ambient Temperature	°C	32	34	35	---	32	34
09	Average Velocity of Flue Gases	M/Sec.	13.6	16.5	9.3	---	6.2	6.9
10	Isokinetic flow rate for P.M. Sampling	LPM	18	23	16	---	24	24
11	Gaseous Sampling Flow Rate	LPM	2.0	---	---	---	---	---
12	Permissible limits for PM	mg/Nm ³	150	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm ³	64	46	34	---	40	68
14	Permissible limits for SO ₂	ppm	100	NA	NA	NA	NA	NA
15	Measured Concentration of SO ₂	ppm	11.9	---	---	---	---	---
16	Permissible limits for NO _x	ppm	50	NA	NA	NA	NA	NA
17	Measured Concentration of NO _x	ppm	15.2	---	---	---	---	---

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

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

Calibration due on 04/06/2015

Royal Environment Auditing & Consultancy Service



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Ref. No. : 139/06/2014-15

Date: 01/07/2014

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	---	11/06/2014	13/06/2014	28/06/2014	27/06/2014	12/06/2014	13/06/2014	Not Running During Visit
02	Time of sampling	Hr.	11.00	10.00	11.50	11.40	14.20	11.00	
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	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	146	131	45	82	52	41	---
08	Ambient Temperature	°C	33	34	34	35	35	34	---
09	Average Velocity of Flue Gases	M/Sec.	14.8	17.2	10.5	6.9	4.8	5.4	---
10	Isokinetic flow rate for P.M. Sampling	LPM	20	24	18	25	19	22	---
11	Gaseous Sampling Flow Rate	LPM	2.0	---	---	---	---	---	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	62	28	28	69	50	26	---
14	Permissible limits for SO2	ppm	100	NA	NA	NA	NA	NA	NA
15	Measured Concentration of SO2	ppm	16.2	---	---	---	---	---	---
16	Permissible limits for NOx	ppm	50	NA	NA	NA	NA	NA	NA
17	Measured Concentration of NOx	ppm	21.5	---	---	---	---	---	---

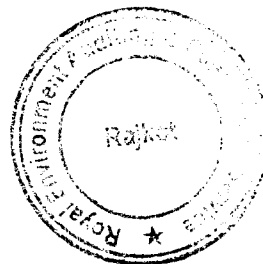
Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.

NA= Not Applicable

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

Calibration due on 04/06/2015

Royal Environment Auditing & Consultancy Service



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Ref. No. :140/06/2014-15

Date: 01/07/2014

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	Stack No. 4
01	Date of Sampling	---	30/06/2014	30/06/2014	30/06/2014	30/06/2014
02	Time of sampling	Hr.	10.50	9.30	14.30	15.50
03	Stack Attached to	---	Dedusting System	Stove Stack	Iron Ore fine & Dust Collecting System	Coke fine building dust collecting system
04	Air Pollution Control Measures	---	Bag Filter	---	Bag Filter	Bag Filter
05	Stack Height	Meter	40.0	65.0	30.0	30.0
06	Stack Diameter	Meter	1.484	2.250	0.650	---
07	Stack Temperature	°C	59	337	48	40
08	Ambient Temperature	°C	34	32	38	36
09	Average Velocity of Flue Gases	M/Sec.	5.8	6.9	12.5	11.9
10	Isokinetic flow rate for P.M. Sampling	LPM	22	14	22	21
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---
12	Permissible limits for PM	mg/Nm ³	150	150	150	150
13	Measured Concentration of PM.	mg/Nm ³	59	8	39	52
14	Permissible limits for SO ₂	mg/Nm ³	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
17	Measured Concentration of Nox	mg/Nm ³	---	---	---	---

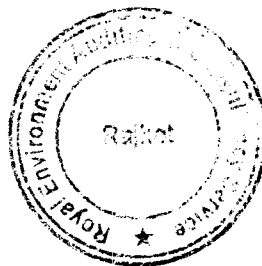
Note : Minimum Detectable Limit of SO₂ & Nox is 0.1 and 0.01 ppm respectively.

**NA=Not Applicable

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

Calibration due on 04/06/2015

Royal Environment Auditing & Consultancy Service



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Ref. No. : 141/06/2014-15

Date: 01/07/2014

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

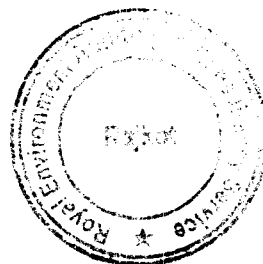
Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5
01	Date of Sampling	---	13/06/2014	13/06/2014	13/06/2014	30/06/2014	Not Running During Visit
02	Time of sampling	Hr.	14.30	15.50	12.30	9.30	
03	Stack Attached to	---	Boiler - I	Boiler - II	Dedusting System	Stove Stack	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	165	171	58	318	---
08	Ambient Temperature	°C	38	36	39	32	---
09	Average Velocity of Flue Gases	M/Sec.	4.6	4.3	5.3	6.8	---
10	Isokinetic flow rate for P.M. Sampling	LPM	13	12	20	15	---
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	---
12	Permissible limits for PM	mg/Nm ³	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm ³	15	18	59.2	6	---
14	Permissible limits for SO ₂	mg/Nm ³	40	40	40	40	100 (ppm)
15	Measured Concentration of SO ₂	mg/Nm ³	6.2	4.9	N.D.	1.21	---
16	Permissible limits for NO _x	mg/Nm ³	25	25	25	25	50 (ppm)
17	Measured Concentration of Nox	mg/Nm ³	9.2	7.6	N.D.	5.2	---

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

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

Calibration due on 04/06/2015

Royal Environment Auditing & Consultancy Service



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Ref. No. : 142/06/2014-15

Date: 01/07/2014

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

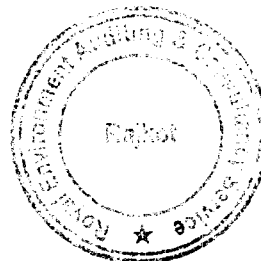
Sr. No.	Particulars	Unit	Stack No. 6	Stack No. 7	Stack No. 8	Stack No. 9
01	Date of Sampling	---	27/06/2014	Not running during visit	Not running during visit	Not running during visit
02	Time of sampling	Hr.	15.30			
03	Stack Attached to	---	6000 KVA D.G.	3240 KVA D.G.	3240 KVA D.G.	1180 KVA D.G.
04	Air 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	172	---	---	---
08	Ambient Temperature	°C	36	---	---	---
09	Average Velocity of Flue Gases	M/Sec.	8.2	---	---	---
10	Isokinetic flow rate for P.M. Sampling	LPM	23	---	---	---
11	Gaseous Sampling Flow Rate	LPM	2.0	---	---	---
12	Permissible limits for PM	mg/Nm ³	150	150	150	150
13	Measured Concentration of PM.	mg/Nm ³	75.00	---	---	---
14	Permissible limits for SO ₂	ppm	100	100	100.0	100
15	Measured Concentration of SO ₂	ppm	30.1	---	---	---
16	Permissible limits for Nox	ppm	50	50	50.0	50
17	Measured Concentration of Nox	ppm	24.3	---	---	---

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

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

Calibration due on 04/06/2015

Royal Environment Auditing & Consultancy Service



Ankur
Analyst



Royal

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

Ref. No. : 143/06/2014-15

Date: 01/07/2014

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	---	---	---	---	---	10/06/2014	Not in operation	Not in operation
02	Time of sampling	Hr.	Not Running During Visit	Not Running During Visit	Not Running During Visit	Not Running During Visit	10.20		
03	Stack Attached to	---	Shot Blasing - I	Shot Blasing - II	Shot Blasing - 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	---	---	---	---	138	59	60
08	Ambient Temperature	°C	---	---	---	---	34	36	36
09	Average Velocity of Flue Gases	M/Sec.	---	---	---	---	10.6	7.1	7.5
10	Isokinetic flow rate for P.M. Sampling	LPM	---	---	---	---	14	27	29
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm ³	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm ³	---	---	---	---	95	49	55
14	Permissible limits for SO ₂	mg/Nm ³	40	40	40	100 ppm	100 ppm	40	40
15	Measured Concentration of SO ₂	mg/Nm ³	---	---	---	---	8.6	N.D.	N.D.
16	Permissible limits for Nox	mg/Nm ³	25	25	25	50 ppm	50 ppm	25	25
17	Measured Concentration of Nox	mg/Nm ³	---	---	---	---	14	N.D.	N.D.

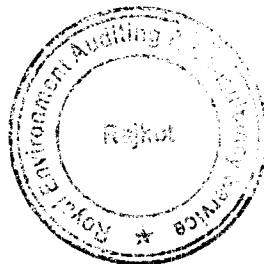
Note : Minimum Detectable Limit of SO₂ & Nox is 0.1 and 0.01 ppm respectively.

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

Calibration due on 04/06/2015

N.D= Not Detectable

Royal Environment Auditing & Consultancy Service



Analyst



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Ref. No. : 145/06/2014-15

Date: 01/07/2014

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	---	07/06/2014	10/06/2014	07/06/2014	09/06/2014	09/06/2014	10/06/2014
02	Time of sampling	Hr.	9.30	10.30	10.40	11.40	12.50	12.20
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 Separator & Bag Filter	Cyclone Separator & 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	51	48	45	48	46	47
08	Ambient Temperature	°C	32	34	35	37	38	38
09	Average Velocity of Flue Gases	M/Sec.	16	11.7	15.9	11.6	12.21	9.3
10	Isokinetic flow rate for P.M. Sampling	LPM	28	21	28	20	21	17
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	62	40	16 (Zn)	13 (Zn)	18 (Zn)	13 (Zn)
14	Permissible limits for SO2	mg/Nm3	40	40	NA	NA	NA	NA
15	Measured Concentration of SO2	mg/Nm3	1.2	0.6	---	---	---	---
16	Permissible limits for Nox	mg/Nm3	25	25	NA	NA	NA	NA
17	Measured Concentration of Nox	mg/Nm3	8.3	5.2	---	---	---	---

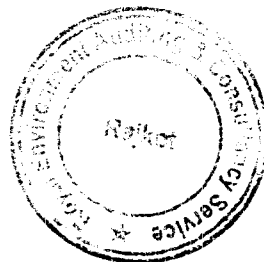
Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.

N.D= Not Detectable

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

Calibration due on 04/06/2015

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Ref. No. : 146/06/2014-15

Date 01/07/2014

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	---	25/06/2014	25/06/2014	09/06/2014	09/06/2014	10/06/2014	10/06/2014
02	Time of sampling	Hr.	9.30	10.40	15.30	16.10	15.00	15.50
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	43	45	38	42	39	40
08	Ambient Temperature	°C	32	34	32	33	34	36
09	Average Velocity of Flue Gases	M/Sec.	12.6	13.5	5.1	6.8	5.2	6.2
10	Isokinetic flow rate for P.M. Sampling	LPM	22	24	21	27	21	25
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	38	35	32	22	24	44
14	Permissible limits for SO2	mg/Nm3	40	40	40	40	40	40
15	Measured Concentration of SO2	mg/Nm3	6.1	3.9	N.D.	N.D.	N.D.	N.D.
16	Permissible limits for Nox	mg/Nm3	25	25	25	25	25	25
17	Measured Concentration of Nox	mg/Nm3	8.1	7.6	N.D.	N.D.	N.D.	N.D.

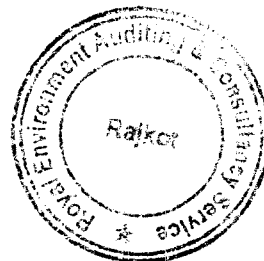
Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.

N.D.= Not Detectable

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

Calibration due on 04/06/2015

Royal Environment Auditing & Consultancy Service



Abhishek
Analyst



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Ref. No. : 147/06/2014-15

Date: 01/07/2014

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	---	11/06/2014	11/06/2014	28/06/2014	30/06/2014	30/06/2014	09/06/2014
02	Time of sampling	Hr.	9.30	10.40	11.30	10.40	12.00	16.30
03	Stack Attached to	---	Annealing Furnace - I	Annealing Furnace - II	Annealing Furnace - III	Barrel Grinding-III	Barrel Grinding -IV&V	Sand Reclamation
04	Air Pollution Control Measures	---	---	---	---	Bag Filter	Bag Filter	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	153	164	149	56	54	74
08	Ambient Temperature	°C	32	34	35	34	35	36
09	Average Velocity of Flue Gases	M/Sec.	7.5	8.2	5.9	7.6	7.2	10.6
10	Isokinetic flow rate for P.M. Sampling	LPM	22	24	18	29	28	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	56.6	59.04	51	56.00	52.00	59
14	Permissible limits for SO2	mg/Nm3	100 (PPM)	100 (PPM)	100 (ppm)	40	40	40
15	Measured Concentration of SO2	mg/Nm3	4.7(PPM)	5.9(PPM)	4.7(PPM)	N.D.	N.D.	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	6.9 (PPM)	7.8 (PPM)	7.1 (PPM)	N.D.	N.D.	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

Calibration due on 04/06/2015

Royal Environment Auditing & Consultancy Service



M. K. K.
Analyst



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Ref. No. : 148/06/2014-15

Date: 01/07/2014

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	---	23/05/2014	23/05/2014	24/05/2014	24/05/2014	24/05/2014	Not in operation
02	Time of sampling	Hr.	9.30	10.40	9.00	14.30	10.10	
03	Stack Attached to	---	Annealing Furnace - I	Annealing Furnace - II	Magnesium Treatment	Socket Cleaning	Zinc Coating	Tri- Grinding Section
04	Air Pollution Control Measures	---	---	---	Bag Filter	Bag Filter	Bag Filler	Bag Filter
05	Stack Height	Meter	45	45	30	30	30	---
06	Stack Diameter	Meter	---	---	---	---	---	---
07	Stack Temperature	°C	139	148	45	36	39	---
08	Ambient Temperature	°C	32	33	32	35	34	---
09	Average Velocity of Flue Gases	M/Sec.	6.2	7.1	3.8	4.3	6.4	---
10	Isokinetic flow rate for P.M. Sampling	LPM	19	21	15	18	12	---
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	---	---	---	---
12	Permissible limits for PM	mg/Nm ³	50	50	50	50	50	50
13	Measured Concentration of PM.	mg/Nm ³	37	43	48	31.00	17 (Zn)	---
14	Permissible limits for SO ₂	PPM	100	100	NA	NA	NA	NA
15	Measured Concentration of SO ₂	PPM	9.9	10.8	---	---	---	---
16	Permissible limits for Nox	PPM	50	50	NA	NA	NA	NA
17	Measured Concentration of Nox	PPM	7.6	8.2	---	---	---	---

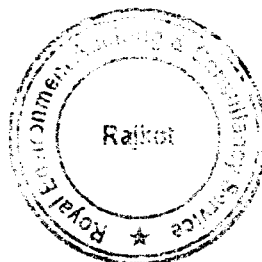
Note : Minimum Detectable Limit of SO₂ & Nox is 0.1 and 0.01 ppm respectively.

N.D= Not Detectable

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

Calibration due on 04/06/2015

Royal Environment Auditing & Consultancy Service



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Ref. No. : 150/06/2014-15

Date: 01/07/2014

WORK ZONE NOISE LEVEL MEASUREMENT

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

Date of sampling : 7th to 14th Jun,2014

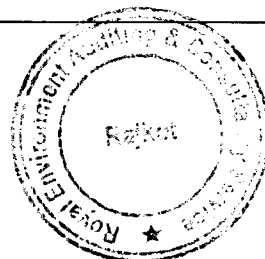
Sr. No.	Location of Sampling	Results Avg. in dB(A)
01.	Inside Control Room of Sinter Plant	60.8
02.	Nr. Stock House of BF	72.9
03.	Inside Control Room of BF	61.2
04.	Inside Control Room of Blower House	58.4
05.	Inside Control of Cast House	59.7
06.	Inside Control Room of CPP	55.2
07.	Inside Control Room of Annealing Furnace of DISP	56.9
08.	Inside Laboratory of BF	53.5
09.	Inside Laboratory of DISP	58.6
10.	Inside ID & OD Control Room of JCO Plant	56.8
11.	Inside Control Room – Mill area of Spiral Plant-2	59.8
12.	Inside Spiral – 1	71.9
13.	Nr. Pipe cutting Area of Spiral Plant	74.0
14.	Inside JCO Plant	71.3
15.	Nr. JCO Press	71.5
16.	Inside DISP Plant	70.9
17.	Inside Coating Plant	72.2
18.	Nr. CCM SDP-II	69.8
19.	Inside Control Room of Annealing Furnace of SDP-II	56.3
20.	Inside New Coating Plant	72.8
21.	Inside Control Room of BF-2	55.1
22.	Inside Spiral-2	74.1
23.	Nr. Zinc Coating SDP-II	71.7
24.	Nr. Stock House of BF-2	66.7
25.	C/R Blower House of BF-2	73.4

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

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

Recalibration is due on : 29/09/2014

Royal Environment Auditing & Consultancy Service



Analyst
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Ref. No. : 151/06/2014-15

Date: 01/07/2014

AMBIENT NOISE LEVEL MEASUREMENT

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

Date of sampling : 7th to 14th Jun,2014

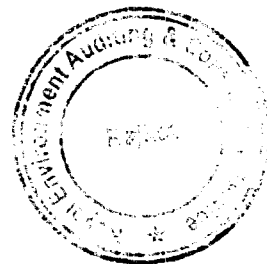
Sr. No.	Location of Sampling	Results in dB(A) (Day Time)	Results in dB(A) (Night Time)
	Permissible Limits	75.0	70.0
01.	Nr. Admin. Building	59.3	52.3
02.	Nr. Old Colony	54.2	50.7
03.	Nr. LPG Yard	65.5	60.7
04.	Nr. Sinter Plant	70.1	66.2
05.	Nr. R. O. Plant	66.7	61.1
06.	Nr. Gate No. 2	65.2	62.6
07.	Nr. New Colony	60.4	53.9
08.	Nr. SDP-2	70.7	65.9
09.	Nr. BLAST FURNACE-2	71.5	69.5
10.	Nr. New Coating	72.1	67.1

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 : 29/09/2014

Royal Environment Auditing & Consultancy Service



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Ref. No. : 152/06/2014-15

Date: 01/07/2014

REPORT OF DOMESTIC WASTE WATER ANALYSIS

Name of company : Jindal Saw Limited,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

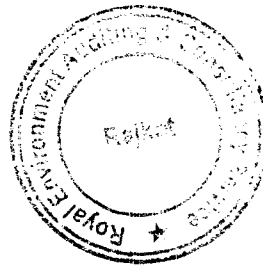
Source Of Sample Collection : Domestic Effluent After Treatment

Date of Sampling : 27/06/2014

Sr. No.	Parameters	Unit	GPCB limits	STP Inlet	STP Outlet
01.	pH	pH Unit	----	7.71	7.49
02.	BOD (3 Days at 27°C)	mg/l	<20	190	18
03.	Suspended Solids	mg/l	<30	199	25
04.	Residual Chlorine	mg/l	Min. 0.5	----	0.69

Royal Environment Auditing & Consultancy Service

[Handwritten 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, BF, DISP, JCO & Coating Units at Jindal Saw Limited, Samaghogha.**2 Raw materials, by products and finished products involved in the process. **TOTAL DUST**

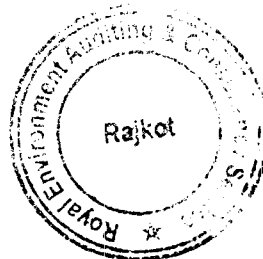
3 Particulars of sampling

Date of Sampling : 7th to 14th Jun, 2014

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	3-6	4.50	10	Gravimetric	7	---	<i>Ankit</i>	Mr. Ankit Dwivedi
2	JCO Plant Nr. JCO Press	Total Dust		02	2-6	4.00	10	Gravimetric	8	---		
3	Sinter Plant At First Floor	Total Dust		02	1-4	3.5	10	Gravimetric	7	---		
4	BF Plant (Cast House)	CO		02	5-7	6	2	Gravimetric	8	---		
		Total Dust			4-7	5.5	10					
5	Coating Plant-1 (Blasting Area)	Total Dust		02	2-6	4.0	10	Gravimetric	7	---		
6	DISP Plant Main Entrance	Total Dust		02	3.5-6.5	5.0	10	Gravimetric	9	---		
7	Spiral Plant -2 Nr. ID/OD	Total Dust		02	4.6-6.2	5.4	10	Gravimetric	8	---		
8	Coating Plant-2 (Blasting Area)	Total Dust		02	3.7-5.3	4.5	10	Gravimetric	8	---		
9	Coating Plant-3 (Blasting Area)	Total Dust		02	4.2-6.1	5.2	10	Gravimetric	9	---		
10	Small Dia Ductile Iron pipe	Total Dust	02	5.3-7.1	6.2	10	Gravimetric	9	---			

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

Calibration Date Due on : 02/12/2014



For. Royal Environment Auditing & Consultancy Service

Authorized Sign