



# Royal

## Environment Auditing & Consultancy Service

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

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

Ref. No. : 301/12/2016-17

Date : 03/01/2017

### NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - DECEMBER : 2016

Name of company : JINDAL SAW LIMITED

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_2/6/10/23

Sr. No.	Particulars	Unit	Location No.1 : Weigh Bridge (Nr.Gate No-2) (E)								
			01	02	03	04	05				
01.	No. of Week	----									
02.	Date & Time Starting of Monitoring	----	02/12/2016; 08.30	05/12/2016; 08.10	09/12/2016; 08.00	12/12/2016; 08.20	16/12/2016; 08.00	19/12/2016; 08.15	23/12/2016; 08.00	26/12/2016; 08.35	29/12/2016; 08.05
03.	Date & Time Ending of Monitoring	----	03/12/2016; 08.30	06/12/2016; 08.10	10/12/2016; 08.00	13/12/2016; 08.20	17/12/2016; 08.00	20/12/2016; 08.15	24/12/2016; 08.00	27/12/2016; 08.35	30/12/2016; 08.05
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	NNE	NE	WNW	N	NNE	NNE	WNW	NNE	N
06.	Average Wind Speed	Km/Hr.	6.7	3.4	1.5	1.9	4.9	3.5	1.8	6.2	5.4
07.	Average flow rate for Dust Monitoring PM <sub>10</sub>	m <sup>3</sup> /min.	1.19	1.18	1.17	1.16	1.18	1.19	1.2	1.19	1.17
08.	Average flow rate for Dust Monitoring PM <sub>2.5</sub>	m <sup>3</sup> /hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
09.	Average flow rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible limits for PM <sub>10</sub> *	µg/m <sup>3</sup>	100	100	100	100	100	100	100	100	100
11.	Measured Concentration of PM <sub>10</sub>	µg/m <sup>3</sup>	54	45	51	43	50	47	53	56	46
12.	Permissible limits for PM <sub>2.5</sub> *	µg/m <sup>3</sup>	60	60	60	60	60	60	60	60	60
13.	Measured Concentration of PM <sub>2.5</sub>	µg/m <sup>3</sup>	15	20	14	19	18	15	19	23	20
14.	Permissible limits for SO <sub>2</sub> *	µg/m <sup>3</sup>	80	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	4.3	3.8	4.6	3.2	3.5	4.4	4.6	3.7	4.1
16.	Permissible limits for NO <sub>2</sub> *	µg/m <sup>3</sup>	80	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	16.6	17.2	15.4	16.3	11.8	10.4	11.2	9.8	10.4
18.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000	2000	2000	2000	2000	2000	2000
19.	Measured Concentration of CO	µg/m <sup>3</sup>	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.

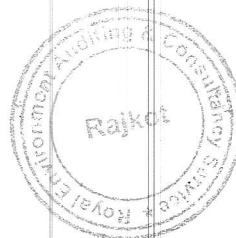
Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

B.D.L.= Below Detectable Limit

All Calibration due on : 15/05/2017

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

Royal Environment Auditing & Consultancy Service



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Analyst



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Ref. No. : 302/12/2016-17

Date : 03/01/2017

### NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - DECEMBER : 2016

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

Test Method : As per IS Standards - 5182\_2/6/10/23

Sr. No.	Particulars	Unit	Location No.2 : Sinter plant - 1 (NNW)								
			01	02		03		04		05	
01.	No. of Week	---									
02.	Date & Time Starting of Monitoring	---	02/12/2016; 08.50	05/12/2016; 08.30	09/12/2016; 08.20	12/12/2016; 08.40	16/12/2016; 08.20	19/12/2016; 08.35	23/12/2016; 08.15	26/12/2016; 08.50	29/12/2016; 08.25
03.	Date & Time Ending of Monitoring	---	03/12/2016; 08.50	06/12/2016; 08.30	10/12/2016; 08.20	13/12/2016; 08.40	17/12/2016; 08.20	20/12/2016; 08.35	24/12/2016; 08.15	27/12/2016; 08.50	30/12/2016; 08.25
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	---	NNE	NE	WNW	N	NNE	NNE	WNW	NNE	N
06.	Average Wind Speed	Km/Hr.	6.7	3.4	1.5	1.9	4.9	3.5	1.8	6.2	5.4
07.	Average flow rate for Dust Monitoring PM <sub>10</sub>	m <sup>3</sup> /min.	1.18	1.20	1.19	1.21	1.19	1.18	1.20	1.22	1.21
08.	Average flow rate for Dust Monitoring PM <sub>2.5</sub>	m <sup>3</sup> /hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
09.	Average flow rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible limits for PM <sub>10</sub> *	µg/m <sup>3</sup>	100	100	100	100	100	100	100	100	100
11.	Measured Concentration of PM <sub>10</sub>	µg/m <sup>3</sup>	40	47	45	38	46	49	43	39	48
12.	Permissible limits for PM <sub>2.5</sub> *	µg/m <sup>3</sup>	60	60	60	60	60	60	60	60	60
13.	Measured Concentration of PM <sub>2.5</sub>	µg/m <sup>3</sup>	13	18	16	15	20	21	17	12	22
14.	Permissible limits for SO <sub>2</sub> *	µg/m <sup>3</sup>	80	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	2.4	2.8	3.1	3.3	2.7	2.6	3.2	2.5	3.8
16.	Permissible limits for NO <sub>2</sub> *	µg/m <sup>3</sup>	80	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	16.5	17.7	15.5	17.4	18.3	15.8	14.7	12.2	11.6
18.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000	2000	2000	2000	2000	2000	2000
19.	Measured Concentration of CO	µg/m <sup>3</sup>	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.

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

B.D.L.= Below Detectable Limit

All Calibration due on : 15/05/2017

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

Royal Environment Auditing & Consultancy Service



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Ref. No. : 303/12/2016-17

Date : 03/01/2017

### NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - DECEMBER : 2016

Name of company : JINDAL SAW LIMITED

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_2/6/10/23

Sr. No.	Particulars	Unit	Location No.3 : Nr. Work Shop Spiral-II (W)								
			01	02		03		04		05	
01.	No. of Week	---	01	02		03		04		05	
02.	Date & Time Starting of Monitoring	---	02/12/2016; 09.05	05/12/2016; 08.50	09/12/2016; 08.40	12/12/2016; 09.00	16/12/2016; 08.40	19/12/2016; 08.55	23/12/2016; 08.35	26/12/2016; 09.10	29/12/2016; 08.45
03.	Date & Time Ending of Monitoring	---	03/12/2016; 09.05	06/12/2016; 08.50	10/12/2016; 08.40	13/12/2016; 09.00	17/12/2016; 08.40	20/12/2016; 08.55	24/12/2016; 08.35	27/12/2016; 09.10	30/12/2016; 08.45
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	---	NNE	NE	WNW	N	NNE	NNE	WNW	NNE	N
06.	Average Wind Speed	Km/Hr.	6.7	3.4	1.5	1.9	4.9	3.5	1.8	6.2	5.4
07.	Average flow rate for Dust Monitoring PM <sub>10</sub>	m <sup>3</sup> /min.	1.24	1.22	1.25	1.23	1.21	1.22	1.24	1.23	1.22
08.	Average flow rate for Dust Monitoring PM <sub>2.5</sub>	m <sup>3</sup> /hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
09.	Average flow rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible limits for PM <sub>10</sub> *	µg/m <sup>3</sup>	100	100	100	100	100	100	100	100	100
11.	Measured Concentration of PM <sub>10</sub>	µg/m <sup>3</sup>	37	35	45	40	34	39	43	36	34
12.	Permissible limits for PM <sub>2.5</sub> *	µg/m <sup>3</sup>	60	60	60	60	60	60	60	60	60
13.	Measured Concentration of PM <sub>2.5</sub>	µg/m <sup>3</sup>	12	16	20	14	11	17	15	14	13
14.	Permissible limits for SO <sub>2</sub> *	µg/m <sup>3</sup>	80	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	1.9	1.2	1.8	2.1	1.9	2.4	1.9	2.3	1.8
16.	Permissible limits for NO <sub>2</sub> *	µg/m <sup>3</sup>	80	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	6.3	7.1	8.8	9.1	9.8	6.2	6.7	5.9	7.4
18.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000	2000	2000	2000	2000	2000	2000
19.	Measured Concentration of CO	µg/m <sup>3</sup>	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.

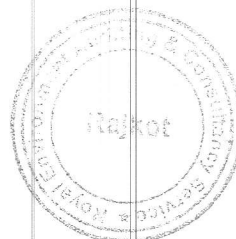
Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

B.D.L.= Below Detectable Limit

All Calibration due on : 15/05/2017

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

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Ref. No. : 304/12/2016-17

Date : 03/01/2017

### AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5182\_2/6/10/23

Sr.No.	Particulars	Unit	AAQM - 1 (S)	AAQM - 2 (SSW)	AAQM - 3 (WSW)	AAQM - 4 (NW)
01.	Location of Ambient	---	Old Colony (Nr. Environment Laboratory)	Nr. Rain Water Harvesting Pond	LPG Yard (Nr. Water Reservoir)	Between Sinter - 2 & Spiral - 2
02.	Date of sampling	---	13/12/2016	13/12/2016	14/12/2016	14/12/2016
03.	Time of sampling	---	8.30	8.55	8.40	9.10
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	---	NNE	NNE	NNE	NNE
06.	Average Wind Speed	Km/Hr.	3.1	3.1	7.0	7.0
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m3	100	100	100	100
10.	Measured Concentration of PM 10	µg/m3	31	46	43	38
11.	Permissible limits for PM 2.5*	µg/m3	60	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	10	18	15	17
13.	Permissible limits for SO <sub>2</sub> *	µg/m3	80	80	80	80
14.	Measured Concentration of SO <sub>2</sub>	µg/m3	1.6	2.1	1.8	2.3
15.	Permissible limits for NO <sub>2</sub> *	µg/m3	80	80	80	80
16.	Measured Concentration of NO <sub>2</sub>	µg/m3	4.4	6.5	8.3	7.2
17.	Permissible limit for CO **	µg/m3	2000	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL	BDL

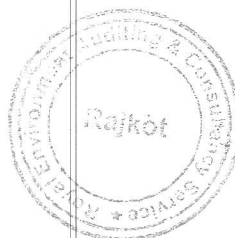
Instrument used : (1) Ecotech make 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampling Kit (APM 109), & 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 15/05/2017

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

BDL= Below Detectable Limit

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Ref. No. : 305/12/2016-17

Date : 03/01/2017

### AMBIENT AIR QUALITY MONITORING REPORT

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

Test Method : As per IS Standards - 5182\_2/6/10/23

Sr. No.	Particulars	Unit	AAQM - 5 (NE)	AAQM - 6 (SE)	AAQM - 7 (ESE)	AAQM - 8 (E)
01.	Location of Ambient	---	Vikashpuram Colony	Savitri Vihar Colony (Shopping Centre )	VIP Guest House	Main Gate
02.	Date of sampling	---	15/12/2016	15/12/2016	16/12/2016	16/12/2016
03.	Time of sampling	---	8.50	9.25	9.10	9.45
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	---	NNE	NNE	NNE	NNE
06.	Average Wind Speed	Km/Hr.	5.3	5.3	4.9	4.9
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
10.	Measured Concentration of PM 10	µg/m <sup>3</sup>	40	45	55	50
11.	Permissible limits for PM 2.5*	µg/m <sup>3</sup>	60	60	60	60
12.	Measured Concentration of PM 2.5	µg/m <sup>3</sup>	15	19	23	20
13.	Permissible limits for SO <sub>2</sub> *	µg/m <sup>3</sup>	80	80	80	80
14.	Measured Concentration of SO <sub>2</sub>	µg/m <sup>3</sup>	2.4	4.3	4.7	6.3
15.	Permissible limits for NO <sub>2</sub> *	µg/m <sup>3</sup>	80	80	80	80
16.	Measured Concentration of NO <sub>2</sub>	µg/m <sup>3</sup>	6.6	5.4	7.1	9.3
17.	Permissible limit for CO **	µg/m <sup>3</sup>	2000	2000	2000	2000
18.	Measured Concentration of CO	µg/m <sup>3</sup>	BDL	BDL	BDL	BDL

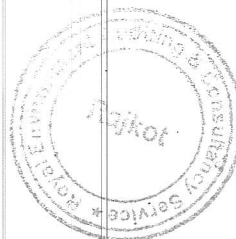
Instrument used : (1) Ecotech make 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampling Kit (APM 109), & 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 15/05/2017

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

BDL= Below Detectable Limit

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Ref. No. :306/12/2016-17

Date : 03/01/2017

### FUGITIVE EMISSION MONITORING REPORT

Name of company : JINDAL SAW LIMITED

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	A - 1	A - 2	A - 3
01.	Location of Ambient	----	RMH Junction House	RMH Stock House	Sinter RMH Yard
02.	Date of sampling	----	20/12/2016	20/12/2016	21/12/2016
03.	Time of sampling	----	8.20	8.10	8.00
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	----	NNE	NNE	NNE
06.	Average Wind Speed	Km/Hr.	5.0	5.0	4.6
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m3	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m3	1346	1281	1532
11.	Permissible limits for SO2*	µg/m3	150	150	150
12.	Measured Concentration of SO2	µg/m3	11.6	10.4	12.2
13.	Permissible limits for NO2*	µg/m3	120	120	120
14.	Measured Concentration of NO2	µg/m3	21.1	19.6	20.5
15.	Permissible limit for CO **	µg/m3	2000	2000	2000
16.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL
17.	Permissible limit for Pb*	µg/m3	2	2	2
18.	Measured Concentration of Pb	µg/m3	ND	ND	ND

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampler (APM 109)  
All Calibration due on : 15/05/2017

BDL= Below Detectable Limit  
ND= Not Detectable

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Ref. No. :307/12/2016-17

Date : 03/01/2017

### FUGITIVE EMISSION MONITORING REPORT

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

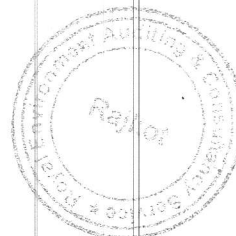
Test Method : As per IS Standards - 5182\_Part - 2/6/10/23/22

Sr. No.	Particulars	Unit	A - 4	A - 5	A - 6
01.	Location of Ambient	----	Sinter 2 Ground Hopper	DISP "CCM" Area	BF CAST HOUSE
02.	Date of sampling	----	21/12/2016	22/12/2016	22/12/2016
03.	Time of sampling	----	8.30	8.15	8.00
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	----	NNE	NNE	NNE
06.	Average Wind Speed	Km/Hr.	4.6	1.7	1.7
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m3	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m3	1013	429	1422
11.	Permissible limits for SO2*	µg/m3	150	150	150
12.	Measured Concentration of SO2	µg/m3	12.5	15.3	14.2
13.	Permissible limits for NO2*	µg/m3	120	120	120
14.	Measured Concentration of NO2	µg/m3	17.6	23.7	24.3
15.	Permissible limit for CO **	µg/m3	2000	2000	2000
16.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL
17.	Permissible limit for Pb*	µg/m3	2	2	2
18.	Measured Concentration of Pb	µg/m3	ND	ND	ND

Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampler (APM 109)  
All Calibration due on : 15/05/2017

BDL= Below Detectable Limit  
ND= Not Detectable

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Analyst



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## Environment Auditing & Consultancy Service

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

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

Ref. No. : 308/12/16-17

Date : 03/01/2017

### Performance Evaluation of Air Pollution Control Equipments

#### Sinter Plant-1 (GPCB ID 35456)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

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

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

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

Calibration due on 12/09/2017

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Ref. No. : 309/12/2016-17

Date : 03/01/2017

### Blast Furnace Plant-1(GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

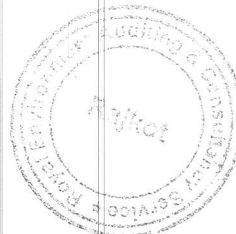
Test Method : As per IS Standards - 11255\_Part - 1/3

Sr. No.	Particulars	Unit	S - 1
01	Date of Sampling	---	08/12/2016
02	Attached to	---	De-dustingSystem
03	Stack Height	Meter	35
04	Stack Duct Diameter	Meter	1.4
05	Stack Temperature	°C	50
06	Ambient Temperature	°C	31
07	Average Velocity of Flue Gases	m/sec.	15.3
08	IsoKinetic Flowrate for Sampling	LPM	26
09	Inlet	mg/Nm <sup>3</sup>	186
10	Outlet	mg/Nm <sup>3</sup>	N.D.
11	Efficiency	%	100 %

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

Calibration due on 12/09/2017

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Ref. No. : 310/12/2016-17

Date : 03/01/2017

### Performance Evaluation of Air Pollution Control Equipments

#### Sinter Plant-2 (GPCB ID:29017)

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

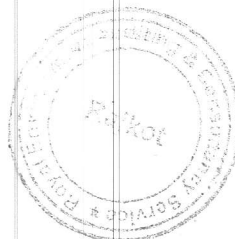
Test Method : As per IS Standards - 11255\_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 7	S - 9	S-10
01	Date of Sampling	---	07/12/2016	Not in operation during visit	07/12/2016	07/12/2016	07/12/2016	Not Running During Month
02	Attached to	---	Fuel crushing de-duster system (Fuel)	Fuel crushing de-duster system (Flux)	Fuel screening deduster system (Flux screening)	Sinter Furnace	Discharging end of Sinter de-dusting System	Pulverised Coal Injection
03	Stack Height	Meter	30	30	30	50	50	32
04	Stack Diameter	Meter	0.7	0.7	0.7	2.0	1.3	1.0
05	Stack Temperature	°C	54	....	51	157	126	....
06	Ambient Temperature	°C	31	....	32	29	32	....
07	Average Velocity of Flue Gases	m/sec.	14.7	....	9.6	30.5	28.7	....
08	IsoKinetic Flowrate for Sampling	LPM	25	....	17	10	10	....
09	Inlet	mg/Nm <sup>3</sup>	2105	....	2784	3248	3587	....
10	Outlet	mg/Nm <sup>3</sup>	18	....	26	53	42	....
11	Efficiency	%	99.14	....	99.07	98.37	98.83	....

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100  
Calibration due on 12/09/2017

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*D. J. Jaiswal*



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Ref. No. : 311/12/2016-17

Date : 03/01/2017

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

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

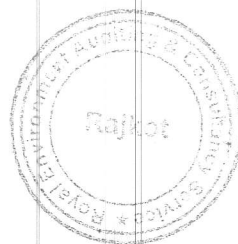
Test Method : As per IS Standards - 11255\_Part - 1/3

Sr. No.	Particulars	Unit	S - 7	S - 8	S - 12	S - 18	S - 22
01	Date of Sampling	---	19/12/2016	13/12/2016	12/12/2016	13/12/2016	17/12/2016
02	Attached to		Sand Reclamation	Common stack Converter - I & II	Core Cleaning & Dusting - I	Core Cleaning & Dusting - II	Mg Converter - III
03	Stack Height	Meter	32	30	30	30	30
04	Stack Diameter	Meter	0.9	0.5	0.6	0.6	0.5
05	Stack Temperature	°C	107	48	52	54	93
06	Ambient Temperature	°C	32	32	30	30	33
07	Average Velocity of Flue Gases	m/sec.	21.6	16.2	12.8	15.6	5.8
08	IsoKinetic Flowrate for Sampling	LPM	8	28	22	27	20
09	Inlet	mg/Nm <sup>3</sup>	3844	4231	2854	3684	2896
10	Outlet	mg/Nm <sup>3</sup>	49	46	28	39	29
11	Efficiency	%	98.73	98.91	99.02	98.94	99.00

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

Calibration due on 12/09/2017

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Ref. No. : 312/12/2016-17

Date : 03/01/2017

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

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

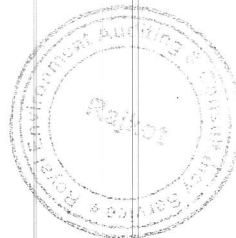
Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	S - 9	S - 10	S - 15	S - 16	S - 20	S - 21	S - 23
01	Date of Sampling	---	22/12/2016	Not in operation during visit	22/12/2016	Not in operation during visit	19/12/2016	Not in operation during visit	19/12/2016
02	Attached to	---	Zinc Coating - I	Barrel Grinding-I	Zinc Coating - II	Barrel Grinding-II	Zinc Coating - III	Barrel Grinding-III	Zinc Coating - IV & V
03	Stack Height	Meter	30	30	30	30	30	30	30
04	Stack Duct Diameter	Meter	0.6	0.6	0.6	0.6	0.6	0.5	0.9
05	Stack Temperature	°C	49	...	51	...	48	...	47
06	Ambient Temperature	°C	31	...	32	...	33	...	33
07	Average Velocity of Flue Gases	m/sec.	13.9	...	14.3	...	15.2	...	12.3
08	IsoKinetic Flowrate for Sampling	LPM	24	...	25	...	27	...	21
09	Inlet	mg/Nm <sup>3</sup>	1620	...	1861	...	1794	...	1259
10	Outlet	mg/Nm <sup>3</sup>	14	...	17	...	18	...	12
11	Efficiency	%	99.14	...	99.09	...	99.00	...	99.05

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100  
Calibration due on 12/09/2017

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Ref. No. : 313/12/2016-17

Date : 03/01/2017

### Performance Evaluation of Air Pollution Control Equipments

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

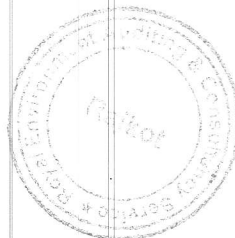
Name of company : JINDAL SAW LIMITED,  
Village: Samaghogha,  
Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	S - 1	S - 5	S - 6	S-8
01	Date of Sampling	---	Not Running During Month	Not Running During Month	Not Running During Month	Not Running During Month
02	Attached to	---	Mg Treatment	Zinc Coating	Tri-Grinding	Zinc Coating machine
03	Stack Height	Meter	30	30	30	30
04	Stack Duct Diameter	Meter	1.00	1.00	1.00	0.8
05	Stack Temperature	°C	---	---	---	---
06	Ambient Temperature	°C	---	---	---	---
07	Average Velocity of Flue Gases	m/sec.	Not Running During Month			
08	IsoKinetic Flowrate for Sampling	LPM	---	---	---	---
09	Inlet	mg/Nm <sup>3</sup>	---	---	---	---
10	Outlet	mg/Nm <sup>3</sup>	---	---	---	---
11	Efficiency	%	---	---	---	---

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100  
Calibration due on 12/09/2017

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Ref. No. : 314/12/2016-17

Date : 03/01/2017

### Performance Evaluation of Air Pollution Control Equipments

#### Blast Furnace Plant-2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

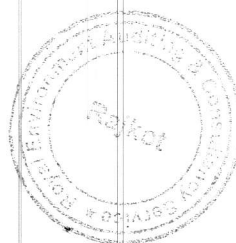
Test Method : As per IS Standards - 11255\_Part - 1/3

Sr. No.	Particulars	Unit	S - 1	S - 4	S - 5
01	Date of Sampling	---	Not Running During Month	Not Running During Month	Not Running During Month
02	Attached to	---	Dedusting System	Coke fine building dust collecting system	Iron Ore fine & Dust Collecting System
03	Stack Height	Meter	40	30	30
04	Stack Duct Diameter	Meter	1.5	0.85	0.65
05	Stack Temperature	°C	---	---	---
06	Ambient Temperature	°C	---	---	---
07	Average Velocity of Flue Gases	m/sec.	Not Running During Month		
08	IsoKinetic Flowrate for Sampling	LPM	---	---	---
09	Inlet	mg/Nm <sup>3</sup>	---	---	---
10	Outlet	mg/Nm <sup>3</sup>	---	---	---
11	Efficiency	%	---	---	---

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

Calibration due on 12/09/2017

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Ref. No. :315/12/2016-17

Date : 03/01/2017

### STACK EMISSION MONITORING RESULTS

#### Sinter Plant - 1(GPCB ID:35456)

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

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

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

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

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

Calibration due on : 12/09/2017

NA= Not Applicable

ND=Not Detectable

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Ref. No. : 316/12/2016-17

Date : 03/01/2017

### STACK EMISSION MONITORING RESULTS

#### Sinter Plant -2 (GPCB ID:29017)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 7	S - 8	S - 9	S - 10
01	Date of Sampling	---	Not In Operation During The Visit	07/12/2016	07/12/2016	Not In Operation During The Visit	NA	NA	07/12/2016	Not In Operation During The Visit	07/12/2016	Not Running During Month
02	Time of sampling	Hr.		11.00	14.30				9.00		16.00	
03	Stack Attached to	---	Fuel crushing de-duster system (Flux)	Fuel crushing de-duster system(Fuel)	Fuel Screening deduster System (Flux Screening)	No.1 Transfer Station De-duster System	Primary Mixer De-duster system	Secondary Mixer De-duster system	Sinter Furnace	Transfer station no. 4 & 5 dedusting system	Discharging End of sinter de-dusting system	Pulverized Coal Injection
04	Air Pollution Control Measures	---	Dust Collector	Dust Collector	Dust Collector	Dust Collector	Dust Collector	Dust Collector	ESP	Dust Collector	ESP	Bag Filter
05	Stack Height	Meter	30	30	30	30	20	30	50	30	50	32
06	Stack Diameter	Meter	0.7	0.7	0.7	0.7	---	---	2	---	1.3	1.00
07	Stack Temperature	°C	---	43	40	---	---	---	151	---	119	---
08	Ambient Temperature	°C	---	31	32	---	---	---	29	---	32	---
09	Average Velocity of Flue Gases	m/sec.	---	12.9	6.5	---	---	---	14.5	---	24.4	---
10	Isokinetic flow rate for P.M. Sampling	LPM	---	23	26	---	---	---	19	---	9	---
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	---	---	2.0	---	---	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	---	18	26	---	---	---	43	---	12	---
14	Permissible limits for SO2	ppm	NA	NA	NA	NA	NA	NA	100	NA	NA	100 (ppm)
15	Measured Concentration of SO2	ppm	---	---	---	---	---	---	2.7	---	---	---
16	Permissible limits for NOx	ppm	NA	NA	NA	NA	NA	NA	50	NA	NA	50 (ppm)
17	Measured Concentration of NOx	ppm	---	---	---	---	---	---	14.5	---	---	---

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

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

Calibration due on : 12/09/2017

NA= Not Applicable  
ND= Not Detectable

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Ref. No. :317/12/2016-17

Date : 03/01/2017

### STACK EMISSION MONITORING RESULTS BLAST FURNACE - 2 (GPCB ID:29026)

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

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

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5
01	Date of Sampling	---	Not Running During Month	Not Running During Month	Monitoring Not Possible	Not Running During Month	Not Running During Month
02	Time of sampling	Hr.					
03	Stack Attached to	---	Dedusting System	Stove Stack	Flare Stack	Coke fine building dust collecting system	Iron Ore fine & Dust Collecting System
04	Air Pollution Control Measures	---	Bag Filter	---	---	Bag Filter	Bag Filter
05	Stack Height	Meter	40.0	65.0	45	30.0	30.0
06	Stack Diameter	Meter	1.5	2.250	---	0.45	0.35
07	Stack Temperature	°C	---	---	---	---	---
08	Ambient Temperature	°C	---	---	---	---	---
09	Average Velocity of Flue Gases	m/sec.	Not Running During Month		---	Not Running During Month	
10	Isokinetic flow rate for P.M. Sampling	LPM	---	---	---	---	---
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	---
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>	---	---	---	---	---
14	Permissible limits for SO <sub>2</sub>	mg/Nm <sup>3</sup>	NA	NA	NA	NA	NA
15	Measured Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	---	---	---	---	---
16	Permissible limits for NO <sub>x</sub>	mg/Nm <sup>3</sup>	NA	NA	NA	NA	NA
17	Measured Concentration of NO <sub>x</sub>	mg/Nm <sup>3</sup>	---	---	---	---	---

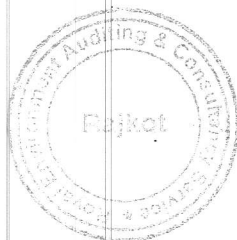
Note : Minimum Detectable Limit of SO<sub>2</sub> & Nox is 0.1 and 0.01 ppm respectively.

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

Calibration due on : 12/09/2017

NA=Not Applicable

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*[Handwritten Signature]*  
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Ref. No. : 318/12/2016-17

Date : 03/01/2017

### STACK EMISSION MONITORING RESULTS BLAST FURNACE-1 (GPCB ID:18037)

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

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

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5
01	Date of Sampling	---	08/12/2016	08/12/2016	08/12/2016	08/12/2016	Monitoring Not Possible
02	Time of sampling	Hr.	10.50	13.50	15.15	8.30	
03	Stack Attached to	---	Dedusting System	Boiler - I	Boiler - II	Stove Stack	Flare Stack
04	Air Pollution Control Measures	---	Bag Filter	---	---	---	---
05	Stack Height	Meter	35.0	45	45	50.0	30
06	Stack Diameter	Meter	1.5	1.4	1.4	2.25	---
07	Stack Temperature	°C	41	173	168	214	---
08	Ambient Temperature	°C	31	33	33	27	---
09	Average Velocity of Flue Gases	m/sec.	10.8	3.8	3.9	2.5	---
10	Isokinetic flow rate for P.M. Sampling	LPM	19	11	11	7	---
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	ND	ND	ND	ND	---
14	Permissible limits for SO <sub>2</sub>	mg/Nm3	40	40	40	40	40
15	Measured Concentration of SO <sub>2</sub>	mg/Nm3	ND	ND	ND	ND	---
16	Permissible limits for NO <sub>x</sub>	mg/Nm3	25	25	25	25	25
17	Measured Concentration of NO <sub>x</sub>	mg/Nm3	ND	ND	ND	ND	---

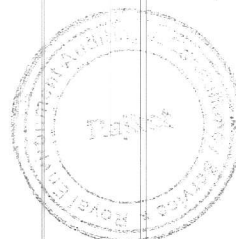
Note : Minimum Detectable Limit of SO<sub>2</sub> & Nox is 0.1 and 0.01 ppm respectively.

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

Calibration due on : 12/09/2017

N.D=Not Detectable

Royal Environment Auditing & Consultancy Service



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Ref. No. : 319/12/2016-17

Date : 03/01/2017

### STACK EMISSION MONITORING RESULTS

#### Captive Power Plant (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

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

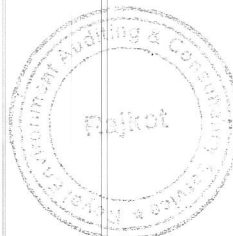
Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4
01	Date of Sampling	---	Not In Operation During The Visit	Not In Operation During The Visit	Not In Operation During The Visit	Not In Operation During The Visit
02	Time of sampling	Hr.				
03	Stack Attached to	---	6000 KVA D.G.	3240 KVA D.G.	3240 KVA D.G.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

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

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

Calibration due on : 12/09/2017

Royal Environment Auditing & Consultancy Service



*Munraj*  
Analyst



# Royal

## Environment Auditing & Consultancy Service

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

Ref. No. : 320/12/2016-17

Date : 03/01/2017

### STACK EMISSION MONITORING RESULTS

#### Pipe Plant (GPCB ID:18036)

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

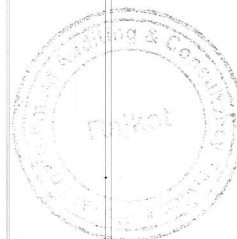
Test Method : As per IS Standards - 11255\_Part - 1/2/3/7

Sr. No. Particulars	Unit	S - 11	S - 17	S - 25	S - 26	S - 27
01 Date of Sampling	---	Not In Operation During The Visit	10/12/2016	23/12/2016	23/12/2016	23/12/2016
02 Time of sampling	Hr.		10.30	10.00	11.50	13.20
03 Stack Attached to	---	Bitumin Drying Oven - I	Common stack Bitumin Drying Oven - II & Boiler	Shot Blasting - I	Shot Blasting - II	Shot Blasting - III
04 Air Pollution Control Measures	---	---	---	Bag Filter	Bag Filter	Bag Filter
05 Stack Height	Meter	32.8	32.8	10.0	10.0	10.0
06 Stack Diameter	Meter	1.375	1.375	0.41	0.41	1.125
07 Stack Temperature	°C	---	150	42	40	39
08 Ambient Temperature	°C	---	30	30	31	31
09 Average Velocity of Flue Gases	m/sec.	---	5.1	12.1	10.2	9.2
10 Isokinetic flow rate for P.M. Sampling	LPM	---	15	21	18	16
11 Gaseous Sampling Flow Rate	LPM	---	2.0	2.0	2.0	2.0
12 Permissible limits for PM	mg/Nm3	150	150	150	150	150
13 Measured Concentration of PM	mg/Nm3	---	54	17	21	15
14 Permissible limits for SO2	mg/Nm3	100 ppm	100 ppm	40	40	40
15 Measured Concentration of SO2	mg/Nm3	---	23.5	ND	ND	ND
16 Permissible limits for Nox	mg/Nm3	50 ppm	50 ppm	25	25	25
17 Measured Concentration of Nox	mg/Nm3	---	21.4	ND	ND	ND

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.  
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100  
Calibration due on : 12/09/2017

N.D= Not Detectable

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Ref. No. : 321/12/2016-17

Date : 03/01/2017

### STACK EMISSION MONITORING RESULTS

#### Pipe Plant (GPCB ID:18036)

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

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

Sr. No.	Particulars	Unit	S - 8	S - 9	S - 15	S - 20	S - 22	S - 23
01	Date of Sampling	---	13/12/2016	22/12/2016	22/12/2016	19/12/2016	17/12/2016	19/12/2016
02	Time of sampling	Hr.	14.10	10.20	15.00	11.45	16.20	9.30
03	Stack Attached to	---	Common stack Mg Converter-I&II	Zn Coating - I	Zn Coating - II	Zn Coating - III	Mg Converter III	Zn Coating - IV & V
04	Air Pollution Control Measures	---	Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter	Cyclone Separator & Bag Filter	Bag Filter	Cyclone Separator & Bag Filter
05	Stack Height	Meter	30	30	30	30	30	30
06	Stack Diameter	Meter	0.5	0.6	0.6	0.6	0.5	0.9
07	Stack Temperature	°C	41	44	42	41	53	38
08	Ambient Temperature	°C	32	31	32	33	33	33
09	Average Velocity of Flue Gases	m/sec.	23.8	12.7	13.2	14.3	11.4	5.6
10	Isokinetic flow rate for P.M. Sampling	LPM	11	22	23	25	20	24
11	Gaseous Sampling Flow Rate	LPM	2.0	---	---	---	2.0	---
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	20 (Zn)	20 (Zn)	20 (Zn)	150	20 (Zn)
13	Measured Concentration of PM	mg/Nm <sup>3</sup>	46	14 (Zn)	17 (Zn)	18 (Zn)	29	12 (Zn)
14	Permissible limits for SO <sub>2</sub>	mg/Nm <sup>3</sup>	40	NA	NA	NA	40	NA
15	Measured Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	ND	---	---	---	ND	---
16	Permissible limits for Nox	mg/Nm <sup>3</sup>	25	NA	NA	NA	25	NA
17	Measured Concentration of Nox	mg/Nm <sup>3</sup>	1.7	---	---	---	1.0	---

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

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

Calibration due on : 12/09/2017

NA=Not Applicable

ND=Not Detectable

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Ref. No. : 322/12/2016-17

Date : 03/01/2017

### STACK EMISSION MONITORING RESULTS

#### Pipe Plant (GPCB ID:18036)

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

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

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 12	S - 18
01	Date of Sampling	---	10/12/2016	10/12/2016	10/12/2016	10/12/2016	10/12/2016	10/12/2016	12/12/2016	13/12/2016
02	Time of sampling	Hr.	9.00	9.50	10.35	11.40	15.00	16.05	10.20	11.45
03	Stack Attached to	---	Core Shop-I	Core Shop-II	Core Shop-III	Core Shop-IV	Core Shop-V	Core Shop-VI	Core Cleaning & Dusting-I	Core Cleaning & Dusting-II
04	Air Pollution Control Measures	---	---	---	---	---	---	---	Bag Filter	Bag Filter
05	Stack Height	Meter	30	30	30	30	30	30	30	30
06	Stack Diameter	Meter	0.584	0.584	0.584	0.584	0.584	0.584	0.6	0.6
07	Stack Temperature	°C	37	36	35	38	40	37	43	41
08	Ambient Temperature	°C	27	28	29	29	31	31	30	30
09	Average Velocity of Flue Gases	m/sec.	3.4	3.2	2.9	3.8	4.1	3.8	10.7	13.5
10	Isokinetic flow rate for P.M. Sampling	LPM	14	13	12	15	17	16	19	24
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm <sup>3</sup>	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm <sup>3</sup>	19	14	25	21	27	26	28	39
14	Permissible limits for SO <sub>2</sub>	mg/Nm <sup>3</sup>	40	40	40	40	40	40	40	40
15	Measured Concentration of SO <sub>2</sub>	mg/Nm <sup>3</sup>	0.7	1.5	1.9	0.9	1.7	1.1	ND	ND
16	Permissible limits for Nox	mg/Nm <sup>3</sup>	25	25	25	25	25	25	25	25
17	Measured Concentration of Nox	mg/Nm <sup>3</sup>	2.1	2.6	1.8	3.5	2.3	3.8	5.2	6.1

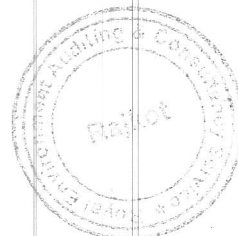
Note : Minimum Detectable Limit of SO<sub>2</sub> & Nox is 0.1 and 0.01 ppm respectively.

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

Calibration due on : 12/09/2017

ND= Not Detectable

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Ref. No. : 323/12/2016-17

Date : 03/01/2017

### STACK EMISSION MONITORING RESULTS

#### Pipe Plant (GPCB ID:18036)

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

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

Sr. No.	Particulars	Unit	S - 7	S - 10	S - 13	S - 14	S - 16	S - 19	S - 21	S - 24
01	Date of Sampling	---	19/12/2016	Not in operation during visit	14/12/2016	14/12/2016	Not in operation during visit	14/12/2016	Not in operation during visit	Not in operation during visit
02	Time of sampling	Hr.	15.40		11.25	12.20		15.30		
03	Stack Attached to	---	Sand Reclamation	Barrel Grinding - I	Annealing Furnace - I	Annealing Furnace - II	Barrel Grinding - II	Annealing Furnace - III	Barrel Grinding-III	Barrel Grinding -IV&V
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	---	---	Bag Filter	---	Bag Filter	Bag Filter
05	Stack Height	Meter	30	30	32	32	30	32	30	30
06	Stack Diameter	Meter	0.9	0.6	1.375	1.375	0.6	1.375	0.5	0.5
07	Stack Temperature	°C	69	...	176	183	...	174	...	...
08	Ambient Temperature	°C	32	...	33	33	...	33	...	...
09	Average Velocity of Flue Gases	m/sec.	10.5	...	4.1	4.3	...	4.5	...	...
10	Isokinetic flow rate for P.M. Sampling	LPM	18	...	12	12	...	13	...	...
11	Gaseous Sampling Flow Rate	LPM	2.0	...	2.0	2.0	...	2.0	...	...
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	49	...	13	9	...	11	...	...
14	Permissible limits for SO2	mg/Nm3	40	40	100 (PPM)	100 (PPM)	40	100 (ppm)	40	40
15	Measured Concentration of SO2	mg/Nm3	5.5	...	1.4	1.9	...	2.3	...	...
16	Permissible limits for Nox	mg/Nm3	25	25	50 (PPM)	50 (PPM)	25	50 (PPM)	25	25
17	Measured Concentration of Nox	mg/Nm3	13.8	...	7.5 (PPM)	8.1 (PPM)	...	8.6 (PPM)	...	...

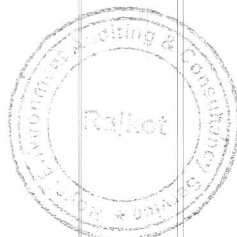
Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.

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

Calibration due on : 12/09/2017

N.D= Not Detectable

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Analyst



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Ref. No. : 324/12/2016-17

Date : 03/01/2017

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

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

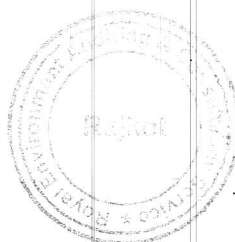
Test Method : As per IS Standards - 11255\_1/2/3/7

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 7	S - 8
01	Date of Sampling	---	Not Running During Month	Not Running During Month	Not Running During Month	Not Running During Month	Not Running During Month	Not Running During Month	Not in operation during visit	Not Running During Month
02	Time of sampling	Hr.								
03	Stack Attached to	---	Magnesium Treatment	Socket Cleaning	Annealing Furnace - I	Annealing Furnace - II	Zinc Coating	Tri- Grinding Section	Pre & Post Heating	Zinc Coating Machine
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	---	---	Bag Filter	Bag Filter	---	---
05	Stack Height	Meter	30	30	45	45	30	30	30	30
06	Stack Diameter	Meter	1.00	0.50	0.85	0.85	1.00	1.00	0.85	1.20
07	Stack Temperature	°C	---	---	---	---	---	---	---	---
08	Ambient Temperature	°C	---	---	---	---	---	---	---	---
09	Average Velocity of Flue Gases	m/sec	Plant Not Running During the Month							
10	Isokinetic flow rate for PM Sampling	LPM	---	---	---	---	---	---	---	---
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	---	---	---	---
12	Permissible limits for PM	mg/Nm <sup>3</sup>	50	50	50	50	50	50	50	50
13	Measured Concentration of PM	mg/Nm <sup>3</sup>	---	---	---	---	---	---	---	---
14	Permissible limits for SO <sub>2</sub>	PPM	NA	NA	100	100	NA	NA	NA	NA
15	Measured Concentration of SO <sub>2</sub>	PPM	---	---	---	---	---	---	---	---
16	Permissible limits for NO <sub>x</sub>	PPM	NA	NA	50	50	NA	NA	NA	NA
17	Measured Concentration of NO <sub>x</sub>	PPM	---	---	---	---	---	---	---	---

Note : Minimum Detectable Limit of SO<sub>2</sub> & Nox is 0.1 and 0.01 ppm respectively.  
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100  
Calibration due on : 12/09/2017

ND= Not Detectable  
N.A= Not Applicable

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*Munaf*  
Analyst



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Ref. No. : 330/12/2016-17

Date : 03/01/2017

### WORK ZONE NOISE LEVEL MEASUREMENT

#### SINTER PLANT- 1 (GPCB ID:35456)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 20th December, 2016

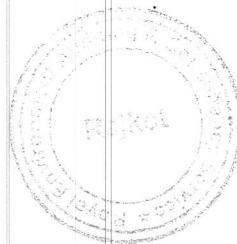
Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
1	Inside Control Room	37.3	41.7	41.2
2	Inside Mechanical Room	42.5	46.8	45.3
3	Inside Electrical Room	39.9	45.5	43.7
4	Inside Plant Office	45.4	52.5	50.2

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 : 12/09/2017

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Ref. No. : 331/12/2016-17

Date : 03/01/2017

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

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 20th December, 2016

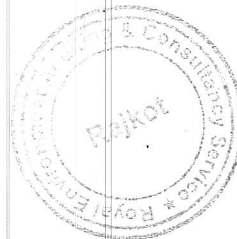
Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Nr. Stock House	59.2	70.8	62.2
02.	Inside Control Room	40.6	49.9	42.8
03.	Inside Control room of Cast House	41.8	46.5	43.7
04.	Inside Laboratory	38.1	43.2	39.2
05.	Inside Control Room of Blower House	51.7	57.8	53.5
06.	Inside Control Room of CPP	48.1	59.6	52.7

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

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

Recalibration is due on : 12/09/2017

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Ref. No. : 332/12/2016-17

Date : 03/01/2017

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

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 20th December, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room of Annealing Furnace of DISP / SDP	43.9	48.6	46.6
02	Inside Control Room – Mill Area of Spiral Plant	55.4	59.5	56.2
03	Nr. Pipe Cutting Area of Spiral Plant	62.6	72.9	68.3
04	Inside JCO Plant	61.1	70.8	62.5
05	Inside DISP / SDP Plant	64.2	73.5	68.6
06	Inside Coating Plant	60.5	69.7	65.4
07	Nr. CCM SDP-2	58.4	67.6	62.1
08	Inside Control Room of Annealing Furnace of SDP-2	45.6	50.8	46.9
09	Nr. Zinc Coating SDP-2	55.4	60.1	57.8
10	Near Mould Shop	68.9	83.7	73.5

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

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

Recalibration is due on : 12/09/2017

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Ref. No. : 333/12/2016-17

Date : 03/01/2017

### AMBIENT NOISE LEVEL MEASUREMENT

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 21st December, 2016

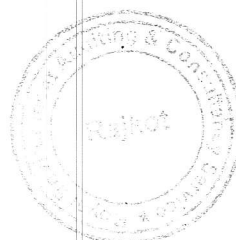
Sr. No.	Location of Sampling	Value in dB(A) Day Time			Value in dB(A) Night Time		
		Min.	Max.	Leq	Min.	Max.	Leq
01.	Admin. Building	37.1	44.8	38.2	31.7	38.7	34.1
02.	Old Colony	31.5	35.3	32.7	27.2	33.8	28.2
03.	Nr. LPG Yard	46.5	55.9	49.3	42.9	49.2	43.9
04.	New Colony (School)	32.3	38.1	34.5	27.3	32.9	28.4
05.	Nr. SDP-2	47.4	54.1	51.1	47.4	53.7	50.6
06.	Nr. Coating Plant	48.7	57.5	50.9	46.5	54.5	48.4
07.	Nr. Gate No. 2	45.2	56.7	52.4	43.4	52.1	45.1
08.	Nr. Sinter Plant-1	55.8	59.5	56.6	48.6	53.7	50.2
09.	Nr. Sinter Plant-2	52.7	60.8	54.7	49.2	55.3	51.6
10.	Nr. Blast Furnace-1	51.3	54.9	53.5	45.8	52.7	48.1
11.	Nr. Blast Furnace-2	50.7	55.8	52.6	42.6	48.6	44.9
12.	Nr. Main Gate (Security Office)	37.5	46.4	41.4	35.3	41.1	38.4

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 : 12/09/2017

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*M. M. M.*  
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Ref. No. : 334/12/2016-17

Date : 03/01/2017

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

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch.

Date of sampling : 20th December, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	51.7	56.8	52.6
02.	Nr. Stock House	56.1	59.2	57.3
03.	C/R Blower House	55.4	61.4	58.2

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 : 12/09/2017

Royal Environment Auditing & Consultancy Service



Muney  
Analyst



# Royal

## Environment Auditing & Consultancy Service

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

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

Ref. No. : 335/12/2016-17

Date : 03/01/2017

### WORK ZONE NOISE LEVEL MEASUREMENT

#### SINTER PLANT - 2 (29017)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 20th December, 2016

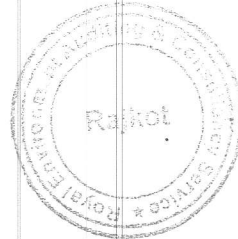
Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	44.7	46.5	45.4
02.	Inside Operator Room	53.8	59.1	54.7
03.	Near Proportioning Bulding	58.1	62.3	59.6
04.	Near Crusher House	61.8	69.6	67.8

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 : 12/09/2017

Royal Environment Auditing & Consultancy Service



Muneg  
Analyst



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

Ref. No. : 336/12/2016-17

Date : 03/01/2017

### REPORT OF DOMESTIC WASTE WATER ANALYSIS

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

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

Date of Sampling : 29/12/2016

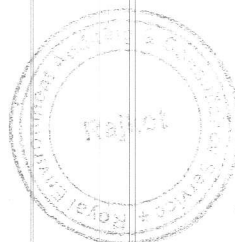
Test Method : As per IS Standards - 3025

Sr. No.	Parameters	Unit	GPCB limits for Treated Effluent	Raw Sewage	Treated Effluent
01.	pH	pH Unit	---	7.61	7.37
02.	BOD (3 Days at 27°C)	mg/l	<20	171	8
03.	Total Dissolve Solid	mg/l	...	713	941
04.	COD	mg/l	...	183	21
05.	Total Suspended Solid	mg/l	<30	201	12
06.	Oil & Grease	mg/l	...	ND	ND
07.	Residual Chlorine	mg/l	Min. 0.5	---	0.75

ND=Not Detectable

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Mumey  
Analyst



Ref. No. : 325/12/2016-17

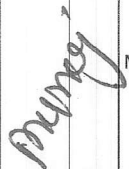
Date : 03/01/2017

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

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

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

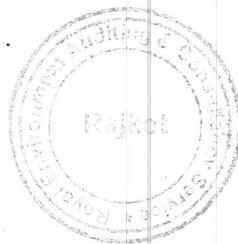
Date of Sampling : 22nd December, 2016

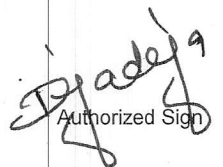
Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remarks	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Sinter Plant At First Floor	Total Dust	Personal Respirable Dust sampler IAS 001	02	2-3	2.5	10	Gravimetric	4	---		Mr. MANOJ SONRAT

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

Calibration Due on. : 02/11/2017

For. Royal Environment Auditing & Consultancy Service



  
Authorized Sign

Ref. No. : 326/12/2016-17

Date : 03/01/2017

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

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

- 1 Name of the Department/Plant.: **Sinter Plant-1 at JINDAL SAW LIMITED, Samaghogha. (GPCB ID: 35456)**
- 2 Raw materials, by products and finished products involved in the process. **TOTAL DUST**
- 3 Particulars of sampling

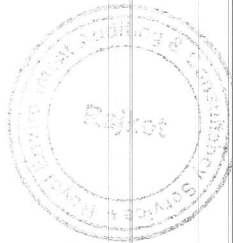
Date of Sampling : 22nd December, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Sinter Plant At First Floor	Total Dust	Personal Respirable Dust sampler IAS 001	02	3-4	3.5	10	Gravimetric	4	---	<i>Manoj</i>	Mr. MANOJ SONRAT

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

Calibration Due on. : 02/11/2017

For: Royal Environment Auditing & Consultancy Service



*Manoj*  
Authorized Sign

Ref. No. : 327/12/2016-17

Date : 03/01/2017

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

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

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

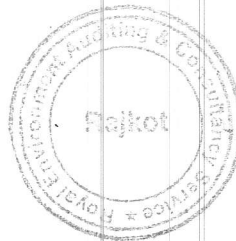
Date of Sampling : 22nd December, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	BF Plant (Cast House)	CO	Personal Respirable Dust sampler IAS 001	02	15-17	16.0 (ppm)	50 (ppm)	Gravimetric	5	---	<i>Manoj</i>	Mr. MANOJ SONRAT
		Total Dust			4-5	4.5	10					

Instruments used : Envirotech make personal sampler, Model No. IAS 001  
Calibration Due on. : 02/11/2017

For: Royal Environment Auditing & Consultancy Service

*Manoj*  
Authorized Sign



Ref. No. : 328/12/2016-17

Date : 03/01/2017

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

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

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

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

3 Particulars of sampling

Date of Sampling : 22nd December, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Refrance Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average						
1	BF Plant (Cast House)	CO	Personal Respirable Dust sampler IAS 001	02	10-12	11.0(ppm)	50 (ppm)	Gravimetric	5	---	<i>Mung</i>	Mr. MANOJ SONRAT
		Total Dust			3-4	3.5	10					

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

Calibration Due on. : 02/11/2017

For. Royal Environment Auditing & Consultancy Service



*T. J. Jadhav*  
Authorized Sign

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

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

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

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

3 Particulars of sampling

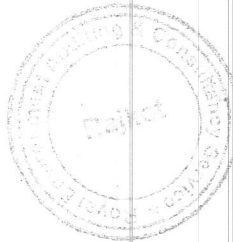
Date of Sampling : 23rd & 24th December, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Spiral Plant (Nr. ID/OD)	Total Dust	Personal Respirable Dust sampler IAS 001	02	1-3	2.0	10	Gravimetric	3	---	<i>Manoj</i>	Mr. MANOJ SONRAT
2	JCO Plant (Nr. JCO Press)	Total Dust		02	2-4	3.0	10	Gravimetric	3	---		
3	Coating Plant-1 (Shot Blasting Area)	Total Dust		02	2-3	2.5	10	Gravimetric	4	---		
4	CCM Area (SDP / DISP)	Total Dust		02	5-6	5.5	10	Gravimetric	4	---		
5	Coating Plant-2 (Shot Blasting Area)	Total Dust		02	4-5	4.5	10	Gravimetric	3	---		
6	CCM Area (SDP-2)	Total Dust		02	1-2	1.5	10	Gravimetric	4	---		

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

Calibration Due on. : 02/11/2017

For. Royal Environment Auditing & Consultancy Service



*Manoj*  
Authorized Sign