



Royal

Environment Auditing & Consultancy Service

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

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Ref. No. : 0268/08/2016-17

Date : 31/08/2016

Performance Evaluation of Air Pollution Control Equipments

Sinter Plant-1 (GPCB ID 35456)

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

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

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 6
01	Date of Sampling	---	20/08/2016	Not in operation during visit	20/08/2016	20/08/2016
02	Attached to	---	Fuel & Flux crusher & screening building	Fuel & Flux crushing house	Sinter Furnace	Discharge end
03	Stack Height	Meter	32	27	50	32
04	Stack Diameter	Meter	1.4	1.4	2.0	1.3
05	Stack Temperature	°C	51	...	157	145
06	Ambient Temperature	°C	34	...	28	32
07	Average Velocity of Flue Gases	m/sec.	10.8	...	29.6	28.3
08	IsoKinetic Flowrate for Sampling	LPM	19	...	10	10
09	Inlet	mg/Nm ³	2109	...	4269	2655
10	Outlet	mg/Nm ³	18	...	59	25
11	Efficiency	%	99.15	...	98.62	99.06

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

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Analyst



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Ref. No. :0275/08/2016-17

Date : 31/08/2016

STACK EMISSION MONITORING RESULTS

Sinter Plant - 1(GPCB ID:35456)

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

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

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6
01	Date of Sampling	---	20/08/2016	Not in operation during visit	20/08/2016	NA	NA	20/08/2016
02	Time of sampling	---	15.10		9.30			11.15
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	40	....	152	....	....	139
08	Ambient Temperature	°C	34	....	28	....	....	32
09	Average Velocity of Flue Gases	m/sec.	4.5	....	6.2	....	....	16.7
10	Isokinetic flow rate for P.M. Sampling	LPM	19	....	18	....	....	23
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 ₁₀	mg/Nm ³	18	...	59	...	...	25
14	Permissible limits for SO ₂	ppm	NA	NA	100	NA	NA	NA
15	Measured Concentration of SO ₂	ppm	...	...	ND	....	....	....
16	Permissible limits for NO _x	ppm	NA	NA	50	NA	NA	NA
17	Measured Concentration of NO _x	ppm	....	....	4.8	....	....	....

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

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

Calibration due on : 25/09/2016

NA= Not Applicable

ND=Not Detectable

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Ref. No. : 0290/08/2016-17

Date : 31/08/2016

WORK ZONE NOISE LEVEL MEASUREMENT

SINTER PLANT- 1 (GPCB ID:35456)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 16th August, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
1	Inside Control Room	40.5	45.9	42.4
2	Inside Mechanical Room	46.8	52.2	48.1
3	Inside Electrical Room	45.4	50.8	46.9
4	Inside Plant Office	50.1	57.2	52.1

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

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

Recalibration is due on : 25/09/2016

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Analyst

Ref. No. : 0286/08/2016-17

Date : 31/08/2016

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

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

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

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

3 Particulars of sampling

Date of Sampling : 16th August, 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	4-8	5.0	10	Gravimetric	3	-	<i>Manoj</i>	Mr. MANOJ SONRAT

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

Calibration Due on. : 02/11/2016

For. Royal Environment Auditing & Consultancy Service



Manoj
Authorized Sign



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Ref. No. : 0274/08/2016-17

Date : 31/08/2016

Performance Evaluation of Air Pollution Control Equipments

Blast Furnace Plant-2 (GPCB ID:29026)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	S - 1	S - 4	S - 5
01	Date of Sampling	---	09/08/2016	09/08/2016	09/08/2016
02	Attached to	---	Dedusting System	Coke fine building dust collecting system	Iron Ore fine & Dust Collecting System
03	Stack Height	Meter	40	30	30
04	Stack Duct Diameter	Meter	1.5	0.85	0.65
05	Stack Temperature	°C	58	60	40
06	Ambient Temperature	°C	31	34	34
07	Average Velocity of Flue Gases	m/sec.	27.5	13.6	10.7
08	IsoKinetic Flowrate for Sampling	LPM	12	23	19
09	Inlet	mg/Nm ³	4150	1297	854
10	Outlet	mg/Nm ³	39	12	8
11	Efficiency	%	99.06	99.07	99.06

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

Calibration due on 25/09/2016

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[Signature]
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Ref. No. :0277/08/2016-17

Date : 31/08/2016

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

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

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

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5
01	Date of Sampling	---	09/08/2016	09/08/2016	Monitoring Not Possible	09/08/2016	09/08/2016
02	Time of sampling	Hr.	10.00	8.15		13.30	15.40
03	Stack Attached to	---	Dedusting System	Stove Stack	Flare Stack	Coke fine building dust collecting system	Iron Ore fine & Dust Collecting System
04	Air Pollution Control Measures	---	Bag Filter	---	---	Bag Filter	Bag Filter
05	Stack Height	Meter	40.0	65.0	45	30.0	30.0
06	Stack Diameter	Meter	1.5	2.250	---	---	0.85
07	Stack Temperature	°C	43	219	---	54	35
08	Ambient Temperature	°C	31	28	---	34	34
09	Average Velocity of Flue Gases	m/sec.	25.1	2.8	---	11.8	8.2
10	Isokinetic flow rate for P.M. Sampling	LPM	11	7	---	20	15
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	---
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm3	39	2	---	12	8
14	Permissible limits for SO2	mg/Nm3	NA	NA	NA	NA	NA
15	Measured Concentration of SO2	mg/Nm3	---	---	---	---	---
16	Permissible limits for NOx	mg/Nm3	NA	NA	NA	NA	NA
17	Measured Concentration of Nox	mg/Nm3	---	---	---	---	---

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

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

Calibration due on 25/09/2016

NA=Not Applicable

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Ref. No. : 0294/08/2016-17

Date : 31/08/2016

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

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 16th August, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	54.9	60.1	56.1
02.	Nr. Stock House	62.1	66.6	64.2
03.	C/R Blower House	63.6	71.9	65.8

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

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

Recalibration is due on : 25/09/2016

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Munjal
Analyst





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Ref. No. : 0350/08/2016-17

Date:31/08/2016

Performance Evaluation of Air Pollution Control Equipments

SLAG GRINDING PLANT (GPCB ID:31304)

Name of company : JINDAL SAW LIMITED,

Village: Pragpar,

Tal.: Mundra, Dist. Kutch

Source of Sample : Slag Grinding Unit

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

Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4
01	Date of Sampling	----	22/08/2016	22/08/2016	22/08/2016	22/08/2016
02	Attached to	Hrs.	Ball Mill Stack	Silo Stack	Raw Material Hopper and Mill Inlet	Separator Stack
03	Stack Height	Km/Hr.	30	30	30	30
04	Stack Duct Diameter	----	0.34	0.34	0.35	0.34
05	Stack Temperature	°C	108	48	45	86
06	Ambient Temperature	°C	33	33	32	32
07	Average Velocity of Flue Gases	M/Sec.	16.1	12.6	8.8	11.3
08	IsoKinetic Flowrate for Sampling	LPM	25	23	16	18
09	Inlet	mg/Nm3	4725	2121	2123	4562
10	Outlet	mg/Nm3	43	10	15	61
11	Efficiency	%	99.09	99.53	99.29	98.66

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

N.A.=Not Applicable

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 1

Calibration Due On. : 25/09/2016

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Ref. No. : 0351/08/2016-17

Date:31/08/2016

STACK EMISSION MONITORING RESULTS

SLAG GRINDING PLANT (GPCB ID:31304)

Name of company : JINDAL SAW LIMITED,
Village: Pragpar,
Tal. : Mundra, Dist. Kutch
Source of Sample : Slag Grinding Unit

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

Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4
01	Date of Sampling	----	22/08/2016	22/08/2016	22/08/2016	22/08/2016
02	Time of sampling	Hrs.	13.45	16.25	14.30	15.25
03	Stack Attached to	Km/Hr.	Ball Mill Stack	Sito Stack	Raw Material Hopper and Mill Inlet	Separator Stack
04	Air Pollution Control Measures	---	Bag Filter	Bag Filter	Bag Filter	Bag Filter
05	Stack Height	Meter	30	30	30	30
06	Stack Temperature	°C	81	41	37	79
07	Ambient Temperature	°C	32	31	34	34
08	Average Velocity of Flue Gases	M/Sec.	14.5	11.9	6.9	8.1
09	Isokinetic flow rate for P.M. Sampling	LPM	24	22	13	13
10	Gaseous Sampling Flow Rate	LPM	NA	NA	NA	NA
11	Permissible limits for PM	mg/Nm ³	150	150	150	150
12	Measured Concentration of PM.	mg/Nm ³	43	10	15	61
13	Permissible limits for SO ₂	ppm	NA	NA	NA	NA
14	Measured Concentration of SO ₂	ppm	---	---	---	---
15	Permissible limits for Nox	ppm	NA	NA	NA	NA
16	Measured Concentration of Nox	ppm	---	---	---	---

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

NA=Not Applicable

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 1

Calibration Due On. : 25/09/2016

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Ref. No. : 0353/08/2016-17

Date:31/08/2016

WORK ZONE NOISE LEVEL MEASUREMENT

SLAG GRINDING PLANT (GPCB ID:31304)

Name of company : JINDAL SAW LIMITED,
Village: Pragpar,
Taluka : Mundra,
District : Kutch.

Date of sampling : 22/08/2016

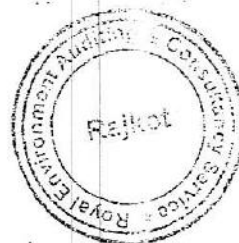
Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Nr. Slag Grinding Mill.	74.6	90.6	81.8
02.	Near Silo	62.3	75.5	69.6
03.	Office SGU	58.2	64.8	60.9
04.	Inside Control Room	50.4	53.6	51.7
05.	Inside Packing Area	60.3	69.4	62.5
06.	Inside Quality Control Laboratory	49.5	51.5	50.6

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

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

Recalibratin is due on: 25/09/2016

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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: **WHRPP & COKE OVEN AT JINDAL SAW LIMITED, Pragpar. (GPCB ID:18035)**
- 2 Raw materials, by products and finished products involved in the process. **TOTAL DUST**
- 3 Particulars of sampling

Date of Sampling : 12/08/2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule) mg/m3	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						
1	Turbine Floor at WHRPP	Total Dust	Personal Respirable Dust sampler APM 800	02	1-3	2.0	10	Gravimetric	4	—	<i>Manoj</i>	Mr. MANOJ SONRAT
2	Coke Oven Plant (Nr. Battery 1 & 2 Stamping Area)	Total Dust		02	6-8	7.0	10	Gravimetric	3	—		
3	Coke Oven Plant (Nr. Battery 3 & 4 Stamping Area)	Total Dust		03	5-7	6.0	10	Gravimetric	3	—		

Instruments used : Envirotech make personal sampler, Model No IAS 601
Calibration Due on. : 02/11/2016

For. Royal Environment Auditing & Consultancy Service

Manoj
Authorized Sign



Ref. No. : 0349/08/2016-17

Date:31/08/2016

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

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

- 1 Name of the Department/Plant.: **SLAG GRINDING PLANT AT JINDAL SAW LIMITED, Pragpar. (GPCB ID:31304)**
- 2 Raw materials, by products and finished products involved in the process. **TOTAL DUST**
- 3 Particulars of sampling

Date of Sampling : 22/08/2016

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	Nr. Packing / Loading Area	Total Dust	Personal Respirable Dust sampler APM 800	02	4-7	5.5	10	Gravimetric	4	---	<i>Munej</i>	Mr. MANOJ SONRAT
2	Nr. Ball Mill of Slag grinding unit	Total Dust		02	4-6	5.0	10	Gravimetric	3	---		

Calibration due on : 02/11/2016

For. Royal Environment Auditing & Consultancy Service

P. Jadhav
Authorized Sign





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Ref. No. : 0352/08/2016-17

Date:31/08/2016

FUGITIVE EMISSION MONITORING REPORT SLAG GRINDING PLANT (GPCB ID:31304)

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

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

Sr. No.	Particulars	Unit	A-1
01.	Location of Ambient	----	SGU Nr.Ground Hopper
02.	Date of sampling	----	22/08/2016
03.	Time of sampling	Hr.	8.40
04.	Duration of Sampling	Hr.	8.00
05.	Dominant Wind Direction (From)	----	W
06.	Average Wind Speed	Km/Hr.	5.5
07.	Average flow rate during sampling	m3/Hr.	1.0
08.	Average flow rate for Gas sampling	LPM	0.2
09.	Permissible limits for PM 10	µg/m3	3000
10.	Measured Concentration of PM 10	µg/m3	1423
11.	Permissible limits for SO2	µg/m3	150
12.	Measured Concentration of SO2	µg/m3	BDL
13.	Permissible limits for NO2	µg/m3	120
14.	Measured Concentration of NO2	µg/m3	BDL

Instrument used : (1) Ecotech make 1 Nos. RDS (APM - 217 BL) (2) 1 Nos. Gaseous Sampling Kit (APM 109)

(3) Ecotech make 1 Nos. PM 2.5 Sampler (AAS 127) & Ace Gas Analyzer

Calibration Due On. : 15/05/2017

BDL=Below detectable limit

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Ref. No. : 0347/08/2016-17

Date:31/08/2016

AMBIENT NOISE LEVEL MEASUREMENT

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

Date of sampling : 22/08/2016

Sr. No.	Location of Sampling	Value in dB(A) Day Time			Value in dB(A) Night Time		
		Min.	Max.	Leq	Min.	Max.	Leq
01.	Nr. Main Gate	40.2	49.4	41.6	31.6	47.2	33.3
02.	Nr. Bachelor Colony	36.3	39.6	37.4	29.1	35.4	32.4
03.	At Admin Building	37.2	42.4	38.4	33.2	36.5	34.3
04.	Nr. Store	35.1	44.2	39.5	31.4	38.1	32.6
05.	At plant boundary (Behind coke oven batteries)	48.4	56.1	52.1	44.6	52.1	48.6
06.	At Staff Colony	38.1	40.2	39.2	34.1	39.2	35.5

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.

Recalibratin is due on: 25/09/2016

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Ref. No. : 0341/08/2016-17

Date:31/08/2016

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED,

Village: Pragpar,

Tal. : Mundra, Dist. Kutch

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

Sr. No. Particulars	Unit	AAQM - 1	AAQM - 2	AAQM - 3	AAQM - 4	AAQM - 5	AAQM - 6
01. Location of Ambient	----	Nr. Security Gate	Nr. Bachelor Colony	Nr. New Canteen	Nr. Old Coke Oven	Nr. Staff Colony	Nr. Admin Office
02. Date of sampling	—	12/08/2016	12/08/2016	12/08/2016	22/08/2016	22/08/2016	22/08/2016
03. Time of sampling	Hr.	8.30	8.50	9.10	8.10	8.30	8.45
04. Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00
05. Dominant Wind Direction (From)	—	WSW	WSW	WSW	W	W	W
06. Wind Speed	Km/Hr.	11.7	11.7	11.7	10.8	10.8	10.8
07. Average flow rate during sampling	m3/min	1.0	1.0	1.0	1.0	1.0	1.0
08. Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2	0.2	0.2
09. Permissible limits for PM10*	µg/m3	100	100	100	100	100	100
10. Measured Concentration of PM10	µg/m3	51	47	48	57	40	43
11. Permissible limits for PM2.5*	µg/m3	60	60	60	60	60	60
12. Measured Concentration of PM2.5	µg/m3	25	19	17	24	17	19
13. Permissible limits for SO ₂ *	µg/m3	80	80	80	80	80	80
14. Measured Concentration of SO ₂	µg/m3	7.2	5.1	6.8	8.9	6.6	6.8
15. Permissible limits for NO ₂ *	µg/m3	80	80	80	80	80	80
16. Measured Concentration of NO ₂	µg/m3	12.5	10.6	12.9	17.6	8.9	11.5
17. Permissible limit for CO **	µg/m3	2000	2000	2000	2000	2000	2000
18. Measured Concentration of CO	µg/m3	BDL	BDL	BDL	BDL	BDL	BDL

Instrument used : (1) Ecotech make 3 Nos. RDS (APM - 217 BL) (2) 3 Nos. Gaseous Sampling Kit (APM 109)

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

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. : 0342/08/2016-17

Date:31/08/2016

WASTE WATER QUALITY ANALYSIS REPORT

Name of company : JINDAL SAW LIMITED,
Village: Pragpar,
Taluka : Mundra,
District : Kutch.

Date of sampling : 27/08/2016

Source of Sample : Treated wastewater as generated from coke quenching

Test Method : As per IS Standards - 3024

Sr. No.	Parameters	Unit	Permissible limits	Results
01.	pH	pH Unit	6.0-8.5	7.31
02	Suspended Solids	mg/l	100	42
03	BOD. (3 day's at 27 ° C)	mg/l	30	BDL
04.	COD	mg/l	250	29
05.	Oil & Grease	mg/l	10	1.1
06.	Ammonical Nitrogen (as N)	mg/l	50	ND
07.	Cynide (as CN ⁻)	mg/l	0.2	ND
08.	Phenol	mg/l	1.0	ND

BDL= Below detectable limit

ND=Not Detectable

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Ref. No. : 0343/08/2016-17

Date:31/08/2016

STACK EMISSION MONITORING RESULTS WHRPP & COKE OVEN PLANT (GPCB ID:18035)

Name of company : JINDAL SAW LIMITED,
Village: Pragpar,
Tal. : Mundra, Dist. Kutch
Source of Sample : WHRPP & Coke Oven Unit

Test Method : As per IS Standards - 11255 Part - 1/2/3/7/21

Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4
01	Date of Sampling	----	12/08/2016	12/08/2016	12/08/2016	12/08/2016
02	Time of sampling	Hr.	9.30	10.45	14.45	16.00
03	Stack Attached to	---	Boiler-I	Boiler-II	Boiler-III	Boiler-IV
04	Air Pollution Control Measures	----	----	----	----	----
05	Stack Height	meter	50.0	50.0	50.0	50.0
06	Stack Temperature	°C	143	152	129	131
07	Ambient Temperature	°C	34	32	31	34
08	Average Velocity of Flue Gases	m/sec	11.9	13.5	12.7	16.1
09	Isokinetic flow rate for P.M. Sampling	LPM	16	18	18	23
10	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0
11	Permissible limits for PM	mg/Nm ³	150	150	150	150
12	Measured Concentration of PM.	mg/Nm ³	52	47	39	32
13	Permissible limits for SO ₂	ppm	100	100	100	100
14	Measured Concentration of SO ₂	ppm	19.3	21.2	19.3	17.3
15	Permissible limits for Nox	ppm	50	50	50	50
16	Measured Concentration of Nox	ppm	22.8	26.8	21.9	20.9
17	Permissible limits for HC	ppm	25	25	25	25
18	Measured Concentration of HC	ppm	ND	ND	ND	ND

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

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 1 & ACE 9000X Multi Gas Analyser.

Calibration Due On. : 25/09/2016

ND= Not Detectable

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Ref. No. : 0344/06/2016-17

Date:31/08/2016

STACK EMISSION MONITORING RESULTS

WHRPP & COKE OVEN PLANT (GPCB ID:18035)

Name of company : JINDAL SAW LIMITED,

Village: Pragpar,

Tal. : Mundra, Dist. Kutch

Source of Sample : WHRPP & Coke Oven Unit

Test Method : As per IS Standards - 11255_Part - 1/2/3/7/21

Sr. No.	Particulars	Unit	Stack No. 5	Stack No.6	Stack No. 7	Stack No.8	Stack No.9	Stack No.10	Stack No.11
01	Date of Sampling	---	Standby	Standby	Standby	Standby	Standby	Standby	Standby
02	Time of sampling	Hr.	Standby	Standby	Standby	Standby	Standby	Standby	Standby
03	Stack Attached to	---	Coke Battery-1	Coke Battery-2	Coke Battery-3	Coke Battery-4	DG	DG	DG
04	Air Pollution Control Measures	Km/Hr.	---	---	---	---	---	---	---
05	Stack Height	Meter	30.0	30.0	30.0	30.0	9.0	9.0	9.0
06	Stack Temperature	°C	---	---	---	---	---	---	---
07	Ambient Temperature	°C	---	---	---	---	---	---	---
08	Average Velocity of Flue Gases	M/Sec.	---	---	---	---	---	---	---
09	Isokinetic flow rate for P.M. Sampling	LPM	---	---	---	---	---	---	---
10	Gaseous Sampling Flow Rate	LPM	---	---	---	---	---	---	---
11	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150
12	Measured Concentration of PM.	mg/Nm3	---	---	---	---	---	---	---
13	Permissible limits for SO2	ppm	40	40	40	40	100	100	100
14	Measured Concentration of SO2	ppm	---	---	---	---	---	---	---
15	Permissible limits for Nox	ppm	25	25	25	25	50	50	50
16	Measured Concentration of Nox	ppm	---	---	---	---	---	---	---
17	Permissible limits for HC	ppm	25	25	25	25	NA	NA	NA
18	Measured Concentration of HC	ppm	---	---	---	---	---	---	---

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

Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 1

Calibration Due On. : 25/09/2016

N.A.=Not Applicable

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Ref. No. : 0345/08/2016-17

Date:31/08/2016

FUGITIVE EMISSION MONITORING REPORT

WHRPP & COKE OVEN (GPCB ID: 18035)

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

Test Method : As per IS Standards - 5182_2/6/10/23/12

Sr. No.	Particulars	Unit	A-1	A-2	A-3	A-4
01.	Location of Ambient	---	Coke Yard	Coke/ Coal Yard behind Old Battery	Coke Oven Battery Area-1&2	Coke Oven Battery Area-3&4
02.	Date of sampling	---	12/08/2016	13/08/2016	13/08/2016	13/08/2016
03.	Time of sampling	Hr.	8.90	8.10	8.30	8.55
04.	Duration of Sampling	Hr.	8.00	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	---	WSW	WSW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	11.7	11.7	9.2	9.2
07.	Average flow rate during sampling	m ³ /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 ³	3000	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m ³	1925	1863	1236	1726
11.	Permissible limits for SO ₂	µg/m ³	150	150	150	150
12.	Measured Concentration of SO ₂	µg/m ³	15.4	17.3	14.6	19.7
13.	Permissible limits for NO ₂	µg/m ³	120	120	120	120
14.	Measured Concentration of NO ₂	µg/m ³	19.3	21.6	20.5	23.7
15.	Permissible limits for Benzo (a) Pyrene (BaP)	µg/m ³	5	5	5	5
16.	Measured Concentration of Benzo (a) Pyrene (BaP)	µg/m ³	ND	ND	ND	ND

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

Calibration Due On. : 15/05/2017

B.D.L.= Below Detectable Limit
ND= Not Detectable

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Ref. No. : 0348/08/2016-17

Date:31/08/2016

WORK ZONE NOISE LEVEL MEASUREMENT

WHRPP & COKE OVEN (GPCB ID:18035)

Name of company : JINDAL SAW LIMITED,
Village: Pragpar,
Taluka : Mundra,
District : Kutch.

Date of sampling : 22/08/2016

Sampling Location: WHRPP and Coke Oven Plant

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01	Nr. Cooling Tower	56.6	63.2	58.4
02	Nr Turbine	68.5	72.2	69.2
03	Inside Control Room	50.3	56.6	53.2
04	Nr. Compressor	66.2	73.2	69.1
05	Near Raw Material Stock Yard.	56.3	60.2	58.4
06	Near Coke Oven Batteries (Old)	55.5	59.3	56.5
07	Near Coke Stamping area	61.3	64.6	61.4
08	Office Coke Oven	45.6	55.1	48.6
09	Near Quenching Tower	51.4	59.5	55.5
10	Near Coke Oven Batteries (New)	50.5	58.4	53.2

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.

Recalibratin is due on: 25/09/2016

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Ref. No. : 0347/08/2016-17

Date:31/08/2016

AMBIENT NOISE LEVEL MEASUREMENT

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

Date of sampling : 22/08/2016

Sr. No.	Location of Sampling	Value in dB(A) Day Time			Value in dB(A) Night Time		
		Min.	Max.	Leq	Min.	Max.	Leq
01.	Nr. Main Gate	40.2	49.4	41.6	31.6	47.2	33.3
02.	Nr. Bachelor Colony	36.3	39.6	37.4	29.1	35.4	32.4
03.	At Admin Building	37.2	42.4	38.4	33.2	36.5	34.3
04.	Nr. Store	35.1	44.2	39.5	31.4	38.1	32.6
05.	At plant boundary (Behind coke oven batteries)	48.4	56.1	52.1	44.6	52.1	48.6
06.	At Staff Colony	38.1	40.2	39.2	34.1	39.2	35.5

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.

Recalibratin is due on: 25/09/2016

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Ref. No. : 0341/08/2016-17

Date: 31/08/2016

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED,

Village: Pragpar,

Tal. : Mundra, Dist. Kutch

Test Method : As per IS Standards - 5132_2/6/10/23

Sr. No. Particulars	Unit	AAQM - 1	AAQM - 2	AAQM - 3	AAQM - 4	AAQM - 5	AAQM - 6
01. Location of Ambient	---	Nr. Security Gate	Nr. Bachelor Colony	Nr. New Canteen	Nr. Old Coke Oven	Nr. Staff Colony	Nr. Admin Office
02. Date of sampling	---	12/08/2016	12/08/2016	12/08/2016	22/08/2016	22/08/2016	22/08/2016
03. Time of sampling	Hr.	8.30	8.50	9.10	8.10	8.30	8.45
04. Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00	1440.00	1440.00
05. Dominant Wind Direction (From)	---	WSW	WSW	WSW	W	W	W
06. Wind Speed	Km/Hr.	11.7	11.7	11.7	10.8	10.8	10.8
07. Average flow rate during sampling	m ³ /min	1.0	1.0	1.0	1.0	1.0	1.0
08. Average flow rate for Gas sampling	LPM	0.2	0.2	0.2	0.2	0.2	0.2
09. Permissible limits for PM ₁₀ *	µg/m ³	100	100	100	100	100	100
10. Measured Concentration of PM ₁₀	µg/m ³	51	47	48	57	40	43
11. Permissible limits for PM _{2.5} *	µg/m ³	60	60	60	60	60	60
12. Measured Concentration of PM _{2.5}	µg/m ³	25	19	17	24	17	19
13. Permissible limits for SO ₂ *	µg/m ³	80	80	80	80	80	80
14. Measured Concentration of SO ₂	µg/m ³	7.2	5.1	6.8	8.9	6.6	6.8
15. Permissible limits for NO ₂ *	µg/m ³	80	80	80	80	80	80
16. Measured Concentration of NO ₂	µg/m ³	12.5	10.6	12.9	17.6	8.9	11.5
17. Permissible limit for CO **	µg/m ³	2000	2000	2000	2000	2000	2000
18. Measured Concentration of CO	µg/m ³	BDL	BDL	BDL	BDL	BDL	BDL

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

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. : 0272/08/2016-17

Date : 31/08/2016

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

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

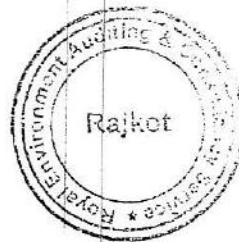
Test Method : As per IS Standards - 11255_Part - 1/3

Sr. No.	Particulars	Unit	S - 9	S - 10	S - 15	S - 16	S - 20	S - 21	S - 23
01	Date of Sampling		30/08/2016	Not in operation during visit	30/08/2016	Not in operation during visit	13/08/2016	Not in operation during visit	17/08/2016
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	...	47	...	46	...	44
06	Ambient Temperature	°C	28	...	33	...	35	...	35
07	Average Velocity of Flue Gases	m/sec.	14.5	...	15.3	...	15.9	...	14.3
08	IsoKinetic Flowrate for Sampling	LPM	25	...	27	...	28	...	25
09	Inlet	mg/Nm ³	1548	...	1945	...	1623	...	1433
10	Outlet	mg/Nm ³	15	...	18	...	12	...	10
11	Efficiency	%	99.03	...	99.07	...	99.26	...	99.30

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

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Ref. No. : 0273/08/2016-17

Date : 31/08/2016

Performance Evaluation of Air Pollution Control Equipments

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

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

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

Sr. No.	Particulars	Unit	S - 1	S - 5	S - 6	S-8
01	Date of Sampling	---	29/08/2016	29/08/2016	29/08/2016	23/08/2016
02	Attached to	---	Mg Treatment	Zinc Coating	Tri-Grinding	Zinc Coating machine
03	Stack Height	Meter	30	30	30	30
04	Stack Duct Diameter	Meter	1.00	1.00	1.00	0.8
05	Stack Temperature	°C	45	43	40	44
06	Ambient Temperature	°C	30	34	34	32
07	Average Velocity of Flue Gases	m/sec.	7.8	9.2	3.9	5.5
08	IsoKinetic Flowrate for Sampling	LPM	14	16	16	22
09	Inlet	mg/Nm ³	3511	2146	1752	2431
10	Outlet	mg/Nm ³	35	20	17	23
11	Efficiency	%	99.00	99.07	99.03	99.05

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

Calibration due on 25/09/2016

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Ref. No. : 0280/08/2016-17

Date : 31/08/2016

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

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

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

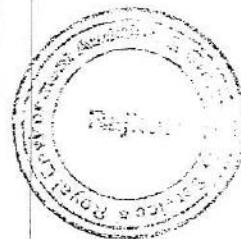
Sr. No. Particulars	Unit	S - 11	S - 17	S - 25	S - 26	S - 27
01 Date of Sampling	---	Not In Operation During The Visit	16/08/2016	30/08/2016	Not In Operation During The Visit	Not In Operation During The Visit
02 Time of sampling	Hr.	---	11.30	14.10	---	---
03 Stack Attached to	---	Bitumin Drying Oven - 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	---	159	43	---	---
08 Ambient Temperature	°C	---	33	34	---	---
09 Average Velocity of Flue Gases	m/sec.	---	4.3	12.2	---	---
10 Isokinetic flow rate for P.M. Sampling	LPM	---	13	22	---	---
11 Gaseous Sampling Flow Rate	LPM	---	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	---	67	27	---	---
14 Permissible limits for SO ₂	mg/Nm ³	100 ppm	100 ppm	40	40	40
15 Measured Concentration of SO ₂	mg/Nm ³	---	21.3	ND	---	---
16 Permissible limits for Nox	mg/Nm ³	50 ppm	50 ppm	25	25	25
17 Measured Concentration of Nox	mg/Nm ³	---	19.5	ND	---	---

Note : Minimum Detectable Limit of SO₂ & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

N.D= Not Detectable

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Ref. No. : 0281/08/2016-17

Date : 31/08/2016

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

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

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

Sr. No.	Particulars	Unit	S - 8	S - 9	S - 15	S - 20	S - 22	S - 23
01	Date of Sampling	---	13/08/2016	30/08/2016	30/08/2016	13/08/2016	17/08/2016	17/08/2016
02	Time of sampling	Hr.	11.20	9.25	11.10	14.30	10.00	15.00
03	Stack Attached to	---	Common stack Mg Converter-I&II	Zn Coating - I	Zn Coating - II	Zn Coating - III	Mg Converter - III	Zn Coating - IV & V
04	Air Pollution Control Measures	---	Bag Filter	Cyclone 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	47	45	42	41	55	39
08	Ambient Temperature	°C	32	28	33	35	31	35
09	Average Velocity of Flue Gases	m/sec.	24.3	13.1	13.7	15.1	11.2	4.7
10	Isokinetic flow rate for P.M. Sampling	LPM	11	23	24	27	19	20
11	Gaseous Sampling Flow Rate	LPM	2.0	---	---	---	2.0	---
12	Permissible limits for PM	mg/Nm3	150	20 (Zn)	20 (Zn)	20 (Zn)	150	20 (Zn)
13	Measured Concentration of PM	mg/Nm3	47	15 (Zn)	18 (Zn)	12 (Zn)	40	10 (Zn)
14	Permissible limits for SO2	mg/Nm3	40	NA	NA	NA	40	NA
15	Measured Concentration of SO2	mg/Nm3	ND	---	---	---	ND	---
16	Permissible limits for Nox	mg/Nm3	25	NA	NA	NA	25	NA
17	Measured Concentration of Nox	mg/Nm3	1.7	---	---	---	1.1	---

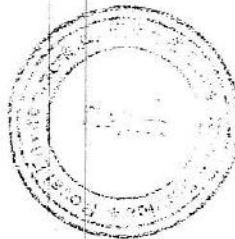
Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.

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

Calibration due on 25/09/2016

NA=Not Applicable
ND=Not Detectable.

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Mameli
Analyst



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Ref. No. : 0282/08/2016-17

Date : 31/08/2016

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

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

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

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 12	S - 18
01	Date of Sampling	---	11/08/2016	11/08/2016	11/08/2016	11/08/2016	11/08/2016	11/08/2016	13/08/2016	19/08/2016
02	Time of sampling	Hr.	9.30	10.15	11.00	11.50	15.10	16.15	9.45	10.10
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	38	37	36	39	40	41	43	45
08	Ambient Temperature	°C	28	29	29	30	32	32	29	30
09	Average Velocity of Flue Gases	m/sec.	3.8	3.7	3.4	3.9	4.3	4.1	10.6	14.2
10	Isokinetic flow rate for P.M. Sampling	LPM	15	15	14	16	17	17	19	25
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm3	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm3	23	18	20	38	26	34	41	52
14	Permissible limits for SO2	mg/Nm3	40	40	40	40	40	40	40	40
15	Measured Concentration of SO2	mg/Nm3	1.8	2.1	2.5	1.6	1.9	1.2	ND	ND
16	Permissible limits for Nox	mg/Nm3	25	25	25	25	25	25	25	25
17	Measured Concentration of Nox	mg/Nm3	3.1	3.5	2.9	2.1	3.6	3.2	4.6	4.1

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

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

Calibration due on 25/09/2016

ND= Not-Detectable

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[Handwritten Signature]
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Ref. No. : 0293/08/2016-17

Date : 31/08/2016

STACK EMISSION MONITORING RESULTS

Pipe Plant (GPCB ID:18036)

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

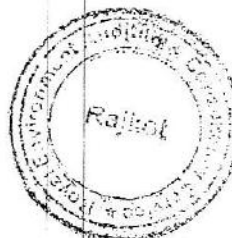
Test Method : As per IS Standards - 11255_1/2/3/7

Sr. No.	Particulars	Unit	S - 7	S - 10	S - 13	S - 14	S - 16	S - 19	S - 21	S - 24
01	Date of Sampling	---	16/08/2016	Not in operation during visit	15/08/2016	15/08/2016	Not in operation during visit	15/08/2016	Not in operation during visit	Not in operation during visit
02	Time of sampling	Hr.	9.20		9.10	10.30		11.45		
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	80	...	164	161	...	168	...	...
08	Ambient Temperature	°C	30	...	29	30	...	33	...	...
09	Average Velocity of Flue Gases	m/sec.	14.2	...	3.5	3.8	...	3.7	...	...
10	Isokinetic flow rate for P.M. Sampling	LPM	23	...	10	11	...	11	...	...
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	150	150	150
13	Measured Concentration of PM	mg/Nm ³	45	...	14	18	...	16	...	...
14	Permissible limits for SO ₂	mg/Nm ³	40	40	100 (PPM)	100 (PPM)	40	100 (ppm)	40	40
15	Measured Concentration of SO ₂	mg/Nm ³	4.7	...	2.6	3.2	...	2.9	...	...
16	Permissible limits for Nox	mg/Nm ³	25	25	50 (PPM)	50 (PPM)	25	50 (PPM)	25	25
17	Measured Concentration of Nox	mg/Nm ³	11.5	...	7.3 (PPM)	6.4 (PPM)	...	7.2 (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 25/09/2016

N.D= Not Detectable

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Ref. No. : 0284/08/2016-17

Date : 31/08/2016

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

Name of company : JINDAL SAW LIMITED,
Village: Samaghegha,
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	—	29/08/2016	29/08/2016	23/08/2016	23/08/2016	29/08/2016	29/08/2016	Not In operation during visit	23/08/2016
02	Time of sampling	Hr.	9.30	11.40	9.15	10.30	14.00	15.50	—	15.00
03	Stack Attached to	—	Magnesium Treatment	Socket Cleaning	Annealing Furnace - I	Annealing Furnace - II	Zinc Coating	Tri- Grinding Section	Pre & Post Heating	Zinc Coating Machine
04	Air Pollution Control Measures	—	Bag Filter	Bag Filter	—	—	Bag Filter	Bag Filter	—	—
05	Stack Height	Meter	30	30	45	45	30	30	30	30
06	Stack Diameter	Meter	1.00	0.50	0.85	0.85	1.00	1.00	0.85	1.20
07	Stack Temperature	°C	38	35	132	129	39	37	—	37
08	Ambient Temperature	°C	30	33	29	30	34	34	—	32
09	Average Velocity of Flue Gases	m/sec	4.2	2.9	4.2	4.5	4.5	2.8	—	4.3
10	Isokinetic flow rate for PM Sampling	LPM	17	12	13	14	18	11	—	18
11	Gaseous Sampling Flow Rate	LPM	—	—	2.0	2.0	—	—	—	—
12	Permissible limits for PM	mg/Nm ³	50	50	50	50	50	50	50	50
13	Measured Concentration of PM	mg/Nm ³	35	13	14	10	20 (Zn)	17	—	23 (Zn)
14	Permissible limits for SO ₂	PPM	NA	NA	100	100	NA	NA	NA	NA
15	Measured Concentration of SO ₂	PPM	—	—	3.3	3.5	—	—	—	—
16	Permissible limits for NO _x	PPM	NA	NA	50	50	NA	NA	NA	NA
17	Measured Concentration of NO _x	PPM	—	—	4.3	5.1	—	—	—	—

Note : Minimum Detectable Limit of SO₂ & NO_x is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on 25/09/2016

ND= Not Detectable
N.A= Not Applicable

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[Handwritten Signature]



[Handwritten Signature]
Analyst



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Ref. No. : 0292/08/2016-17

Date : 31/08/2016

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

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 16th August, 2016

Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room of Annealing Furnace of DISP / SDP	47.2	51.8	49.8
02	Inside Control Room – Mill Area of Spiral Plant	58.8	62.7	59.4
03	Nr. Pipe Cutting Area of Spiral Plant	65.8	76.2	71.5
04	Inside JCO Plant	63.3	74.2	65.7
05	Inside DISP / SDP Plant	67.4	77.7	72.1
06	Inside Coating Plant	63.7	73.9	68.7
07	Nr. CCM SDP-2	61.6	70.8	65.3
08	Inside Control Room of Annealing Furnace of SDP-2.	48.8	53.1	50.2
09	Nr. Zinc Coating SDP-2	65.1	76.2	71.3
10	Near Mould Shop	75.4	86.9	76.7

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

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

Recalibration is due on : 25/09/2016

Royal Environment Auditing & Consultancy Service



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Analyst

Ref. No. : 0289/08/2016-17

Date : 31/08/2016

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

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

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

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

3 Particulars of sampling

Date of Sampling : 17th & 18th August, 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	2-4	3.0	10	Gravimetric	3	---	<i>Manoj</i>	Mr. MANOJ SONRAT
2	JCO Plant (Nr. JCO Press)	Total Dust		02	2-5	3.5	10	Gravimetric	5	---		
3	Coating Plant-1 (Shot Blasting Area)	Total Dust		02	3-5	4.0	10	Gravimetric	3	---		
4	CCM Area (SDP / DISP)	Total Dust		02	5-6	5.5	10	Gravimetric	4	---		
5	Coating Plant-2 (Shot Blasting Area)	Total Dust		02	2-6	4.0	10	Gravimetric	3	---		
6	CCM Area (SDP-2)	Total Dust		02	4-6	5.0	10	Gravimetric	4	---		

Instruments used : Envirotech make personal sampler, Model No. IAS001

Calibration Due on. : 02/11/2016



For. Royal Environment Auditing & Consultancy Service

Manoj
Authorized Sign



Royal

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Ref. No. : 0261/08/2016-17

Date : 31/08/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - AUGUST : 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	---	02/08/2016; 08.15	05/08/2016; 08.00	08/08/2016; 08.30	12/08/2016; 08.10	15/08/2016; 08.25	19/08/2016; 08.15	22/08/2016; 08.00	26/08/2016; 08.35	29/08/2016; 08.40
03.	Date & Time Ending of Monitoring	---	03/08/2016; 08.15	06/08/2016; 08.00	09/08/2016; 08.30	13/08/2016; 08.10	16/08/2016; 08.25	20/08/2016; 08.15	23/08/2016; 08.00	27/08/2016; 08.35	30/08/2016; 08.40
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)	---	W	WSW	W	WSW	WSW	WSW	W	NW	NNW
06.	Average Wind Speed	Km/Hr.	9.5	10.7	9.1*	11.7	10.2	12.7	10.8	8.5	3.2
07.	Average flow rate for Dust Monitoring PM ₁₀	m ³ /min.	1.16	1.17	1.15	1.17	1.16	1.18	1.17	1.19	1.16
08.	Average flow rate for Dust Monitoring PM _{2.5}	m ³ /hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
09.	Average flow rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
10.	Permissible limits for PM ₁₀ *	µg/m ³	100	100	100	100	100	100	100	100	100
11.	Measured Concentration of PM ₁₀	µg/m ³	50	55	57	59	53	56	45	48	41
12.	Permissible limits for PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60	60
13.	Measured Concentration of PM _{2.5}	µg/m ³	20	23	19	21	18	24	23	19	18
14.	Permissible limits for SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80
15.	Measured Concentration of SO ₂	µg/m ³	4.1	3.5	2.9	3.5	4.2	3.6	2.8	2.7	2.5
16.	Permissible limits for NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80
17.	Measured Concentration of NO ₂	µg/m ³	14.6	15.4	16.2	14.3	15.2	10.6	9.4	9.7	8.9
18.	Permissible limit for CO **	µg/m ³	2000	2000	2000	2000	2000	2000	2000	2000	2000
19.	Measured Concentration of CO	µg/m ³	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.

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

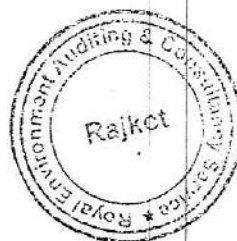
All Calibration due on : 15/05/2017

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

B.D.L= Below Detectable Limit

Royal Environment Auditing & Consultancy Service

[Handwritten Signature]



[Handwritten Signature]
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Ref. No. : 0262/08/2016-17

Date : 31/08/2016

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

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

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

Location No.2 : Sinter plant - 1 (NNW)

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	---	02/08/2016; 08.35	05/08/2016; 08.20	08/08/2016; 08.50	12/08/2016; 08.30	15/08/2016; 08.45	19/08/2016; 08.35	22/08/2016; 08.25	26/08/2016; 08.55	29/08/2016; 09.00			
03.	Date & Time Ending of Monitoring	---	03/08/2016; 08.35	06/08/2016; 08.20	09/08/2016; 08.50	13/08/2016; 08.30	16/08/2016; 08.45	20/08/2016; 08.35	23/08/2016; 08.25	27/08/2016; 08.55	30/08/2016; 09.00			
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)	---	W	WSW	W	WSW	WSW	WSW	W	NW	NNW			
06.	Average Wind Speed	Km/Hr.	9.5	10.7	9.1	11.2	10.2	12.7	10.8	8.5	3.2			
07.	Average flow rate for Dust Monitoring PM ₁₀	m ³ /min.	1.19	1.20	1.18	1.17	1.16	1.19	1.17	1.20	1.18			
08.	Average flow rate for Dust Monitoring PM _{2.5}	m ³ /hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0			
09.	Average flow rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2			
10.	Permissible limits for PM ₁₀ *	µg/m ³	100	100	100	100	100	100	100	100	100			
11.	Measured Concentration of PM ₁₀	µg/m ³	57	60	58	55	53	51	49	58	48			
12.	Permissible limits for PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60	60			
13.	Measured Concentration of PM _{2.5}	µg/m ³	22	24	20	19	23	21	25	18	17			
14.	Permissible limits for SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80			
15.	Measured Concentration of SO ₂	µg/m ³	2.4	2.1	1.9	2.2	2.8	3.2	3.6	2.7	1.8			
16.	Permissible limits for NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80			
17.	Measured Concentration of NO ₂	µg/m ³	12.6	15.3	16.5	14.3	16.2	17.1	14.6	13.5	10.9			
18.	Permissible limit for CO **	µg/m ³	2000	2000	2000	2000	2000	2000	2000	2000	2000			
19.	Measured Concentration of CO	µg/m ³	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.			

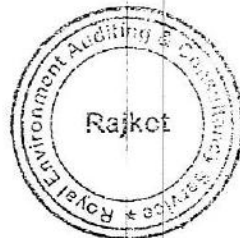
Instrument used : (1) 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. of Gaseous Sampler (AAS 109) (3) 3 Nos. PM 2.5 Sampler (AAS 127)

All Calibration due on : 15/05/2017

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

B.D.L. = Below Detectable Limit

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Ref. No. : 0263/08/2016-17

Date : 31/08/2016

NATIONAL AMBIENT AIR QUALITY MONITORING REPORT FOR THE MONTH - AUGUST : 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	---										
02.	Date & Time Starting of Monitoring	---	02/08/2016; 08.55	05/08/2016; 08.40	08/08/2016; 09.15	12/08/2016; 08.50	15/08/2016; 09.05	19/08/2016; 08.50	22/08/2016; 08.45	26/08/2016; 09.15	29/08/2016; 09.20	
03.	Date & Time Ending of Monitoring	---	03/08/2016; 08.55	06/08/2016; 08.40	09/08/2016; 09.15	13/08/2016; 08.50	16/08/2016; 09.05	20/08/2016; 08.50	23/08/2016; 08.45	27/08/2016; 09.15	30/08/2016; 09.20	
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)	---	W	WSW	W	WSW	WSW	WSW	W	NW	NNW	
06.	Average Wind Speed	Km/Hr.	9.5	10.7	9.1	11.7	10.2	12.7	10.8	8.5	3.2	
07.	Average flow rate for Dust Monitoring PM ₁₀	m ³ /min.	1.22	1.23	1.20	1.21	1.23	1.21	1.22	1.20	1.24	
08.	Average flow rate for Dust Monitoring PM _{2.5}	m ³ /hr.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
09.	Average flow rate for Gas Monitoring	LPM	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
10.	Permissible limits for PM ₁₀ *	µg/m ³	100	100	100	100	100	100	100	100	100	
11.	Measured Concentration of PM ₁₀	µg/m ³	35	43	40	41	37	40	45	38	33	
12.	Permissible limits for PM _{2.5} *	µg/m ³	60	60	60	60	60	60	60	60	60	
13.	Measured Concentration of PM _{2.5}	µg/m ³	16	17	18	15	12	16	14	19	10	
14.	Permissible limits for SO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80	
15.	Measured Concentration of SO ₂	µg/m ³	1.6	1.2	1.5	2.1	2.4	2.2	1.8	2.3	1.5	
16.	Permissible limits for NO ₂ *	µg/m ³	80	80	80	80	80	80	80	80	80	
17.	Measured Concentration of NO ₂	µg/m ³	8.3	9.5	10.3	12.1	11.2	12.1	9.4	8.5	7.6	
18.	Permissible limit for CO **	µg/m ³	2000	2000	2000	2000	2000	2000	2000	2000	2000	
19.	Measured Concentration of CO	µg/m ³	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	B.D.L.	

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

All Calibration due on : 15/05/2017

*Permissible Limits are as per NAAQ Standard 15th November 2009.

B.D.L.= Below Detectable Limit

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Ref. No. : 0264/08/2016-17

Date : 31/08/2016

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

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

Sr.No.	Particulars	Unit	AAQM - 1 (S)	AAQM - 2 (SSW)	AAQM - 3 (WSW)	AAQM - 4 (NW)
01.	Location of Ambient	---	Old Colony (Nr. Environment Laboratory)	Nr. Rain Water Harvesting Pond	LPG Yard (Nr. Water Reservoir)	Between Sinter - 2 & Spiral - 2
02.	Date of sampling	---	10/08/2016	10/08/2016	11/08/2016	11/08/2016
03.	Time of sampling	---	8.30	8.45	8.50	9.10
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	---	W	W	W	w
06.	Average Wind Speed	Km/Hr.	6.5	6.5	7.6	7.6
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	32	41	49	47
11.	Permissible limits for PM 2.5*	µg/m3	60	60	60	60
12.	Measured Concentration of PM 2.5	µg/m3	13	17	20	19
13.	Permissible limits for SO ₂ *	µg/m3	80	80	80	80
14.	Measured Concentration of SO ₂	µg/m3	1.1	2.1	3.3	2.4
15.	Permissible limits for NO ₂ *	µg/m3	80	80	80	80
16.	Measured Concentration of NO ₂	µg/m3	7.6	11.6	12.5	11.4
17.	Permissible limit for CO **	µg/m3	2000	2000	2000	2000
18.	Measured Concentration of CO	µg/m3	BDL	BDL	BDL	BDL

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

All Calibration due on : 15/05/2017

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

BDL= Below Detectable Limit

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Ref. No. : 0265/08/2016-17

Date : 31/08/2016

AMBIENT AIR QUALITY MONITORING REPORT

Name of company : JINDAL SAW LIMITED

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	AAQM - 5 (NE)	AAQM - 6 (SE)	AAQM - 7 (ESE)	AAQM - 8 (E)
01.	Location of Ambient	---	Vikashpuram Colony	Savitri Vihar Colony (Shopping Centre)	VIP Guest House	Main Gate
02.	Date of sampling	---	12/08/2016	12/08/2016	13/08/2016	13/08/2016
03.	Time of sampling	---	9.15	9.30	9.35	9.50
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	---	WSW	WSW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	11.7	11.7	9.2	9.2
07.	Average flow rate during sampling	m ³ /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 ³	100	100	100	100
10.	Measured Concentration of PM 10	µg/m ³	33	40	56	50
11.	Permissible limits for PM 2.5*	µg/m ³	60	60	60	60
12.	Measured Concentration of PM 2.5	µg/m ³	16	15	21	19
13.	Permissible limits for SO ₂ *	µg/m ³	80	80	80	80
14.	Measured Concentration of SO ₂	µg/m ³	4.7	4.2	3.5	5.7
15.	Permissible limits for NO ₂ *	µg/m ³	80	80	80	80
16.	Measured Concentration of NO ₂	µg/m ³	10.8	9.7	11.1	13.3
17.	Permissible limit for CO **	µg/m ³	2000	2000	2000	2000
18.	Measured Concentration of CO	µg/m ³	BDL	BDL	BDL	BDL

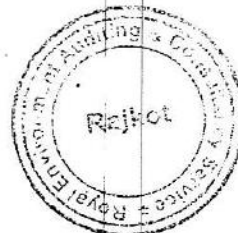
Instrument used : (1) Ecotech make 3 Nos. RDS (APM - 217 BL), (2) 3 Nos. Gaseous Sampling Kit (APM 109), & 3 Nos. PM 2.5 Sampler (AAS 127)

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. :0266/08/2016-17

Date : 31/08/2016

FUGITIVE EMISSION MONITORING REPORT

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

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

Sr. No.	Particulars	Unit	A - 1	A - 2	A - 3
01.	Location of Ambient	---	RMH Junction House	RMH Stock House	Sinter RMH Yard
02.	Date of sampling	---	16/08/2016	16/08/2016	17/08/2016
03.	Time of sampling	---	8.30	8.45	8.00
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	---	WSW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	11.5	11.5	14.1
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	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m ³	1754	1620	1543
11.	Permissible limits for SO ₂ *	µg/m ³	150	150	150
12.	Measured Concentration of SO ₂	µg/m ³	16.5	15.4	17.3
13.	Permissible limits for NO ₂ *	µg/m ³	120	120	120
14.	Measured Concentration of NO ₂	µg/m ³	23.1	24.2	22.4
15.	Permissible limit for CO **	µg/m ³	2000	2000	2000
16.	Measured Concentration of CO	µg/m ³	BDL	BDL	BDL
17.	Permissible limit for Pb*	µg/m ³	2	2	2
18.	Measured Concentration of Pb	µg/m ³	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. :0267/08/2016-17

Date : 31/08/2016

FUGITIVE EMISSION MONITORING REPORT

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

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

Sr. No.	Particulars	Unit	A - 4	A - 5	A - 6
01.	Location of Ambient	---	Sinter 2 Ground Hopper	DISP "CCM" Area	BF CAST HOUSE
02.	Date of sampling	---	17/08/2016	18/08/2016	18/08/2016
03.	Time of sampling	---	8.20	8.20	8.35
04.	Duration of Sampling	Hr.	8.00	8.00	8.00
05.	Dominant Wind Direction (From)	---	WSW	WSW	WSW
06.	Average Wind Speed	Km/Hr.	14.1	15.1	15.1
07.	Average flow rate during sampling	m3/Hr.	1.0	1.0	1.0
08.	Average flow rate for Gas sampling	LPM	0.2	0.2	0.2
09.	Permissible limits for PM 10*	µg/m3	3000	3000	3000
10.	Measured Concentration of PM 10	µg/m3	1064	624	1694
11.	Permissible limits for SO2*	µg/m3	150	150	150
12.	Measured Concentration of SO2	µg/m3	12.5	18.4	15.7
13.	Permissible limits for NO2*	µg/m3	120	120	120
14.	Measured Concentration of NO2	µg/m3	19.2	25.1	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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Ref. No. : 0293/08/2016-17

Date : 31/08/2016

AMBIENT NOISE LEVEL MEASUREMENT

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 16th August, 2016

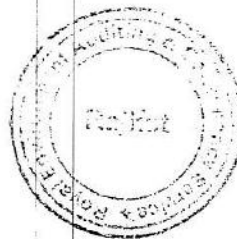
Sr. No.	Location of Sampling	Value in dB(A) Day Time			Value in dB(A) Night Time		
		Min.	Max.	Leq	Min.	Max.	Leq
01.	Admin. Building	40.3	48.1	41.6	35.1	41.9	37.3
02.	Old Colony	34.1	38.5	36.2	30.4	37.1	31.3
03.	Nr. LPG Yard	49.7	59.2	51.1	46.2	52.1	48.1
04.	New Colony (School)	34.7	41.3	37.2	32.4	36.2	33.9
05.	Nr. SDP-2	54.2	62.1	55.1	50.6	56.9	53.5
06.	Nr. Coating Plant	51.9	60.7	54.2	49.5	57.1	52.1
07.	Nr. Gate No. 2	53.2	59.9	55.6	46.7	55.1	48.3
08.	Nr. Sinter Plant-1	58.1	62.7	59.8	51.1	56.7	53.4
09.	Nr. Sinter Plant-2	54.9	64.1	57.1	52.2	58.1	54.9
10.	Nr. Blast Furnace-1	54.1	58.2	55.7	49.1	56.3	51.1
11.	Nr. Blast Furnace-2	52.9	59.1	54.8	45.3	50.8	47.2
12.	Nr. Main Gate (Security Office)	40.7	49.6	43.9	39.1	44.3	41.6

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

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

Recalibration is due on : 25/09/2016

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5

Ref. No. : 0270/08/2016-17

Date : 31/08/2016

Performance Evaluation of Air Pollution Control Equipments

Sinter Plant-2 (GPCB ID:29017)

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

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

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 7	S - 9	S-10
01	Date of Sampling		10/08/2016	Not in operation during visit	11/08/2016	10/08/2016	10/08/2016	11/08/2016
02	Attached to		Fuel crushing de-duster system (Fuel)	Fuel crushing de-duster system (Flux)	Fuel screening deduster system (Flux screening)	Sinter Furnace	Discharging end of Sinter de-dusting System	Pulverised Coal Injection
03	Stack Height	Meter	30	30	30	50	50	32
04	Stack Diameter	Meter	0.7	0.7	0.7	2.0	1.3	1.0
05	Stack Temperature	°C	43	....	48	155	134	130
06	Ambient Temperature	°C	35	....	35	28	33	34
07	Average Velocity of Flue Gases	m/sec.	13.2	....	10.7	33.7	30.6	13.2
08	IsoKinetic Flowrate for Sampling	LPM	23	....	19	11	11	18
09	Inlet	mg/Nm ³	2461	....	2596	4216	3117	1631
10	Outlet	mg/Nm ³	19	....	21	46	26	15
11	Efficiency	%	99.23	....	99.19	98.91	99.17	99.08

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

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[Handwritten Signature]



[Handwritten Signature]
Analyst



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Ref. No. : 0270/08/2016-17

Date : 31/08/2016

Performance Evaluation of Air Pollution Control Equipments

Sinter Plant-2 (GPCB ID:29017)

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

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

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 7	S - 9	S-10
01	Date of Sampling		10/08/2016	Not in operation during visit	11/08/2016	10/08/2016	10/08/2016	11/08/2016
02	Attached to		Fuel crushing de-duster system (Fuel)	Fuel crushing de-duster system (Flux)	Fuel screening deduster system (Flux screening)	Sinter Furnace	Discharging end of Sinter de-dusting System	Pulverised Coal Injection
03	Stack Height	Meter	30	30	30	50	50	32
04	Stack Diameter	Meter	0.7	0.7	0.7	2.0	1.3	1.0
05	Stack Temperature	°C	43	....	48	155	134	130
06	Ambient Temperature	°C	35	....	35	28	33	34
07	Average Velocity of Flue Gases	m/sec.	13.2	....	10.7	33.7	30.6	13.2
08	IsoKinetic Flowrate for Sampling	LPM	23	....	19	11	11	18
09	Inlet	mg/Nm ³	2461	....	2596	4216	3117	1631
10	Outlet	mg/Nm ³	19	....	21	46	26	15
11	Efficiency	%	99.23	....	99.19	98.91	99.17	99.08

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

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Ref. No. : 0276/08/2016-17

Date : 31/08/2016

STACK EMISSION MONITORING RESULTS

Sinter Plant -2 (GPCB ID:29017)

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

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

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5	S - 6	S - 7	S - 8	S - 9	S - 10
01	Date of Sampling	---	Not In Operation During The Visit	10/08/2016	11/08/2016	Not In Operation During The Visit	NA	NA	10/08/2016	13/08/2016	10/08/2016	11/08/2016
02	Time of sampling	Hr.	---	14.30	12.20	---	---	---	9.00	16.15	11.10	14.10
03	Stack Attached to	---	Fuel crushing de-duster system (Flux)	Fuel crushing de-duster system (Fuel)	Fuel Screening de-duster System (Flux Screening)	No. 1 Transfer Station De-duster System	Primary Mixer De-duster system	Secondary Mixer De-duster system	Sinter Furnace	Transfer station no. 4 & 5 dedusting system	Discharging End of sinter de-dusting system	Pulverized Coal Injection
04	Air Pollution Control Measures	---	Dust Collector	Dust Collector	Dust Collector	Dust Collector	Dust Collector	Dust Collector	ESP	Dust Collector	ESP	Bag Filter
05	Stack Height	Meter	30	30	30	30	20	30	50	30	50	32
06	Stack Diameter	Meter	0.7	0.7	0.7	0.7	---	---	2	---	1.3	1.00
07	Stack Temperature	°C	---	37	40	---	---	---	149	37	128	123
08	Ambient Temperature	°C	---	35	35	---	---	---	28	34	33	34
09	Average Velocity of Flue Gases	m/sec.	---	11.7	5.4	---	---	---	13.4	4.5	26.1	8.9
10	Isokinetic flow rate for P.M. Sampling	LPM	---	21	22	---	---	---	18	18	9	13
11	Gaseous Sampling Flow Rate	LPM	---	---	---	---	---	---	2.0	---	---	2.0
12	Permissible limits for PM	mg/Nm ³	150	150	150	150	150	150	150	150	150	150
13	Measured Concentration of PM	mg/Nm ³	---	19	21	---	---	---	46	14	26	15
14	Permissible limits for SO ₂	ppm	NA	NA	NA	NA	NA	NA	100	NA	NA	100 (ppm)
15	Measured Concentration of SO ₂	ppm	---	---	---	---	---	---	ND	---	---	0.89
16	Permissible limits for NO _x	ppm	NA	NA	NA	NA	NA	NA	50	NA	NA	50 (ppm)
17	Measured Concentration of NO _x	ppm	---	---	---	---	---	---	3.7	---	---	0.60

Note : Minimum Detectable Limit of SO₂ & NO_x is 0.1 and 0.01 ppm respectively.
Instrument Used : Stack Monitoring Kit - Ecotech make - ESS 100
Calibration due on : 25/09/2016

NA= Not Applicable
ND= Not Detectable

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Ref. No. : 0295/08/2016-17

Date : 31/08/2016

WORK ZONE NOISE LEVEL MEASUREMENT

SINTER PLANT - 2 (29017)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

Date of sampling : 16th August, 2016

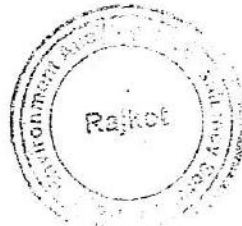
Sr. No.	Location of Sampling	Value in dB(A)		
		Min.	Max.	Leq
01.	Inside Control Room	47.9	50.2	49.3
02.	Inside Operator Room	57.1	62.3	58.2
03.	Near Proportioning Bulding	61.3	63.2	63.1
04.	Near Crusher House	65.2	73.1	68.3

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

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

Recalibration is due on : 25/09/2016

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Analyst

Ref. No. : 0285/08/2016-17

Date : 31/08/2016

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

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

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

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

3 Particulars of sampling

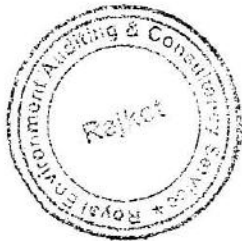
Date of Sampling : 16th August, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remarks	Signature of person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Sinter Plant At First Floor	Total Dust	Personal Respirable Dust sampler IAS 001	02	3-5	4.0	10	Gravimetric	4	—	<i>Manoj</i>	Mr. MANOJ SONRAT

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

Calibration Due on. : 02/11/2016

For. Royal Environment Auditing & Consultancy Service



Manoj
Authorized Sign



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Ref. No. : 0269/08/2016-17

Date : 31/08/2016

Blast Furnace Plant-1(GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	S - 1
01	Date of Sampling	---	20/08/2016
02	Attached to	---	De-dustingSystem
03	Stack Height	Meter	35
04	Stack Duct Diameter	Meter	1.4
05	Stack Temperature	°C	49
06	Ambient Temperature	°C	33
07	Average Velocity of Flue Gases	m/sec.	13.8
08	IsoKinetic Flowrate for Sampling	LPM	24
09	Inlet	mg/Nm ³	328
10	Outlet	mg/Nm ³	3
11	Efficiency	%	99.09

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

Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service



Analyst



Royal

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Ref. No. : 0278/08/2016-17

Date : 31/08/2016

STACK EMISSION MONITORING RESULTS

BLAST FURNACE-1 (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4	S - 5
01	Date of Sampling	---	20/08/2016	20/08/2016	20/08/2016	20/08/2016	---
02	Time of sampling	Hr.	15.00	10.00	11.30	8.30	Monitoring Not Possible
03	Stack Attached to	---	Dedusting System	Boiler - I	Boiler - II	Stove Stack	Flare Stack
04	Air Pollution Control Measures	---	Bag Filter	---	---	---	---
05	Stack Height	Meter	35.0	45	45	50.0	30
06	Stack Diameter	Meter	1.5	1.4	1.4	2.25	---
07	Stack Temperature	°C	41	171	175	211	---
08	Ambient Temperature	°C	33	32	33	27	---
09	Average Velocity of Flue Gases	m/sec.	10.8	3.9	4.1	2.7	---
10	Isokinetic flow rate for P.M. Sampling	LPM	19	11	12	7	---
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	3	13	16	2	---
14	Permissible limits for SO ₂	mg/Nm ³	40	40	40	40	40
15	Measured Concentration of SO ₂	mg/Nm ³	ND	ND	ND	ND	---
16	Permissible limits for NO _x	mg/Nm ³	25	25	25	25	25
17	Measured Concentration of NO _x	mg/Nm ³	ND	ND	ND	ND	---

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

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

Calibration due on 25/09/2016

N.D=Not Detectable

Royal Environment Auditing & Consultancy Service



Mangal
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Ref. No. : 0279/08/2016-17

Date : 31/08/2016

STACK EMISSION MONITORING RESULTS

Captive Power Plant (GPCB ID:18037)

Name of company : JINDAL SAW LIMITED,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

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

Sr. No.	Particulars	Unit	S - 1	S - 2	S - 3	S - 4
01	Date of Sampling	---	---	---	---	---
02	Time of sampling	Hr.	Not In Operation During The Visit	Not In Operation During The Visit	Not In Operation During The Visit	Not In Operation During The Visit
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 ³	150	150	150	150
13	Measured Concentration of PM	mg/Nm ³	---	---	---	---
14	Permissible limits for SO ₂	ppm	100	100	100	100
15	Measured Concentration of SO ₂	ppm	---	---	---	---
16	Permissible limits for Nox	ppm	50	50	50	50
17	Measured Concentration of Nox	ppm	---	---	---	---

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

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

Calibration due on 25/09/2016

Royal Environment Auditing & Consultancy Service



Mangal
Analyst



Royal

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Ref. No. : 0296/08/2016-17

Date : 31/08/2016

REPORT OF DOMESTIC WASTE WATER ANALYSIS

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

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

Date of Sampling : 27/08/2016

Test Method : As per IS Standards - 3024

Sr. No.	Parameters	Unit	GPCB limits for Treated Effluent	Raw Sewage	Treated Effluent
01.	pH	pH Unit	----	7.70	7.38
02.	BOD (3 Days at 27°C)	mg/l	<20	198	12
03.	Total Dissolve Solid	mg/l	...	1064	1297
04.	COD	mg/l	...	269	28
05.	Total Suspended Solid	mg/l	<30	237	16
06.	Oil & Grease	mg/l	...	ND	ND
07.	Residual Chlorine	mg/l	Min. 0.5	----	0.70

ND=Not Detectable

Royal Environment Auditing & Consultancy Service



Munoj
Analyst

Ref. No. : 0287/08/2016-17

Date : 31/08/2016

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

Register containing particulars of monitoring of working environment required under Section 7-A (a)(e).
 1 Name of the Department/Plant.: BF Plant-1 at JINDAL SAW LIMITED, Samaghogha, (GPCB ID: 18037)
 2 Raw materials, by products and finished products involved in the process. TOTAL DUST & CO.
 3 Particulars of sampling

Date of Sampling : 18th August, 2016

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concentration (As given in Second Schedule)	Reference Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	BF Plant (Cast House)	CO	Personal Respirable Dust sampler IAS 001	02	16-18	17(ppm)	50 (ppm)	Gravimetric	4	---	<i>Manoj</i>	Mr. MANOJ SONRAT
		Total Dust			4-7	5.5	10					

Instruments used : Envirotech make personal sampler, Model No. IAS 001
 Calibration Due on. : 02/11/2016

For. Royal Environment Auditing & Consultancy Service



Manoj
Authorized Sign