



Royal

Environment Auditing & Consultancy Service

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

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Ref. No. :191/10/2012-13

Date :23/10/2012

STACK EMISSION MONITORING RESULTS

Sinter Plant-I

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

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

Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5	Stack No. 6
01	Date of Sampling	---	16/10/2012	16/10/2012	17/10/2012	17/10/2012	18/10/2012	18/10/2012
02	Time of sampling	Hr.	9.00	10.00	8.45	9.45	9.00	10.00
03	Stack Attached to	---	Sinter Furnace	Discharge End	Fuel & Flux Crusher and Screening	Fuel & Flux Crushing House	Secondary Mixture House	Primary Mixture House
04	Air Pollution Control Measures	---	ESP	ESP	Bag Filter	Bag Filter	---	---
05	Stack Height	Meter	50	32.8	32.8	27.05	36.08	19.75
06	Stack Diameter	Meter	2.0	1.30	1.40	0.70	1.25	1.25
07	Stack Temperature	°C	125	129	45	52	62	92
08	Ambient Temperature	°C	30	30	30	30	31	31
09	Average Velocity of Flue Gases	M/Sec.	10.3	6.4	6.4	6.1	5.2	6.8
10	Isokinetic flow rate for P.M. Sampling	LPM	14	20	25	24	20	24
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm ³	150	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm ³	30	87	45	87	57	79
14	Permissible limits for SO ₂	ppm	100	NA	NA	NA	NA	NA
15	Measured Concentration of SO ₂	ppm	---	---	---	---	---	---
16	Permissible limits for Nox	ppm	50	NA	NA	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 : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Both Stack kit Recalibration is Due on : 21/04/2013



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Ref. No. : 193/10/2012-13

Date :23/10/2012

STACK EMISSION MONITORING RESULTS

BLAST FURNCE-ID-18037

Name of company : Jindal Saw Limited,

Village: Samaghogha,

Tal. : Mundra, Dist. Kutch

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

Sr. No	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	PCI Unit
01	Date of Sampling	---	18-10-2012	18-10-2012	19-10-2012	19-10-2012	17-10-2012
02	Time of sampling	Hr.	11.10	14.30	9.15	10.15	10.10
03	Stack Attached to	---	Boiler - I	Boiler - II	Dedusting System	Stove Stack	Coal Pulverization
04	Air Pollution Control Measures	---	---	---	Bag Filter	-----	Bag Filter
05	Stack Height	Meter	45	45	35.0	50.0	32.00
06	Stack Diameter	Meter	1.380	1.380	1.484	2.250	---
07	Stack Temperature	°C	179	187	59	342	61
08	Ambient Temperature	°C	33	33	30	30	30
09	Average Velocity of Flue Gases	M/Sec.	7.2	7.5	7.3	9.1	7.6
10	Isokinetic flow rate for P.M. Sampling	LPM	20	21	28	19	29
11	Gaseous Sampling Flow Rate	LPM	2.0	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	74	22	45	50	69
14	Permissible limits for SO ₂	mg/Nm ³	40	40	40	40	100 (PPM)
15	Measured Concentration of SO ₂	mg/Nm ³	6.2	4.8	N.D.	N.D.	2.1(PPM)
16	Permissible limits for Nox	mg/Nm ³	25	25	25	25	50 (PPM)
17	Measured Concentration of Nox	mg/Nm ³	7.9	7.5	5.8	5.2	0.92 (PPM)

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

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

Both Stack kit Recalibration is Due on : 21/04/2013

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Ref. No. : 192/10/2012-13

Date :23/10/2012

STACK EMISSION MONITORING RESULTS Sinter Plant- II

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

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

Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5	Stack No. 6
01	Date of Sampling	---	15-10-2012	15-10-2012	17-10-2012	NOT IN	16-10-2012	16-10-2012
02	Time of sampling	Hr.	10.00	11.00	9.00	OPERATION	11.15	12.00
03	Stack Attached to	---	Sinter Furnace	Tail End Stack	Flux	Primary Mixer De-duster system	Secondary Mixer De-duster system	Fuel Screening deduster System (Screening Flux Stack)
04	Air Pollution Control Measures	---	ESP	ESP	Bag Filter	---	---	Dust Collector
05	Stack Height	Meter	50	50	30	30	30	30
06	Stack Diameter	Meter	2	1.3	0.7	---	1.25	---
07	Stack Temperature	°C	146	146	50	---	57	42
08	Ambient Temperature	°C	31	33	30	---	31	33
09	Average Velocity of Flue Gases	M/Sec.	16.1	8.61	5.6	---	6.3	6.7
10	Isokinetic flow rate for P.M. Sampling	LPM	23	26	22	---	24	27
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	---	2.0	2.0
12	Permissible limits for PM	mg/Nm ³	150	150	150	150	150	150
13	Measured Concentration of PM.	mg/Nm ³	25	89	45	---	49	55
14	Permissible limits for SO ₂	ppm	100	NA	NA	NA	NA	NA
15	Measured Concentration of SO ₂	ppm	16.2	NA	NA	NA	NA	NA
16	Permissible limits for Nox	ppm	50	NA	NA	NA	NA	NA
17	Measured Concentration of Nox	ppm	20.6	NA	NA	NA	NA	NA

Note : Minimum Detectable Limit of SO₂ & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS 1
Both Stack kit Recalibration is Due on : 21/04/2013

NA= Not Applicable

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Ref. No. : 194/10/2012-13

Date : 23/10/2012

STACK EMISSION MONITORING RESULTS Pipe Complex

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

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

Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5
01	Date of Sampling	---	19-10-2012	20-10-2012	20-10-2012	19-10-2012	15-10-2012
02	Time of sampling	Hr.	12.00	9.00	11.10	14.15	14.00
03	Stack Attached to	---	Core Shop-II	Bitumin Drying Oven - I	Bitumin Drying Oven - II	Barrel Grinding - I	Barrel Grinding - II
04	Air Pollution Control Measures	---	---	---	---	Bag Filter	Bag Filter
05	Stack Height	Meter	30	32.8	32.8	30	30
06	Stack Diameter	Meter	0.584	1.375	1.375	0.584	0.584
07	Stack Temperature	°C	62	---	148	37	40
08	Ambient Temperature	°C	32	---	32	34	34
09	Average Velocity of Flue Gases	M/Sec.	15.8	---	7.1	11.2	13.9
10	Isokinetic flow rate for P.M. Sampling	LPM	11	---	22	8	10
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	37	---	107	141	113
14	Permissible limits for SO ₂	mg/Nm ³	40	100 (PPM)	100 (PPM)	40	40
15	Measured Concentration of SO ₂	mg/Nm ³	4.3	---	7.2	1.5	3.5
16	Permissible limits for Nox	mg/Nm ³	25	50 (PPM)	50 (PPM)	25	25
17	Measured Concentration of Nox	mg/Nm ³	4.7	---	10.3 (PPM)	3.8	6.4

Note : Minimum Detectable Limit of SO₂ & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Both Stack kit Recalibration is Due on : 21/04/2013

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Ref. No. : 195/10/2012-13

Date : 23/10/2012

STACK EMISSION MONITORING RESULTS PIPE PLANT-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	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4	Stack No. 5
01	Date of Sampling	---	15/10/2012	15/10/2012	18/10/2012	16/10/2012	16/10/2012
02	Time of sampling	Hr.	12.00	9.00	17.00	13.00	13.50
03	Stack Attached to	---	Mg Converter-I	Zn Coating - I	Zn Coating - II	Anneling Furnace - I	Anneling Furnace - II
04	Air Pollution Control Measures	---	Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Seprater & Bag Filter	---	---
05	Stack Height	Meter	30	30	30	32	32
06	Stack Diameter	Meter	0.488	0.584	0.584	1.375	1.375
07	Stack Temperature	°C	49	41	48	164	160
08	Ambient Temperature	°C	33	33	33	35	35
09	Average Velocity of Flue Gases	M/Sec.	6.93	4.7	9.8	7.2	6.84
10	Isokinetic flow rate for P.M. Sampling	LPM	28	8	17	21	20
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	2.0	2.0
h	Permissible limits for PM	mg/Nm3	150	20 (Zn)	20 (Zn)	150	150
13	Measured Concentration of PM	mg/Nm3	101	17(Zn)	15 (Zn)	88.8	14.7
14	Permissible limits for SO2	mg/Nm3	40	NA	NA	100 (PPM)	100 (PPM)
15	Measured Concentration of SO2	mg/Nm3	N.D.	NA	NA	3.2(PPM)	3.6 (PPM)
16	Permissible limits for Nox	mg/Nm3	25	NA	NA	50 (PPM)	50 (PPM)
17	Measured Concentration of Nox	mg/Nm3	3	NA	NA	6.1 (PPM)	5.2 (PPM)

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Both Stack kit Recalibration is Due on : 21/04/2013

N.D= Not Detectable

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Ref. No. : 195/10/2012-13

Date : 23/10/2012

STACK EMISSION MONITORING RESULTS Pipe Complex

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

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

Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3	Stack No. 4
01	Date of Sampling	---	20-10-2012	20-10-2012	18-10-2012	18-10-2012
02	Time of sampling	Hr.	14.00	15.00	12.00	12.30
03	Stack Attached to	---	Core Cleaning & Dusting	Core Shop-I	Shot Blasing (Coating Plant)	Sand Reclamation
04	Air Pollution Control Measures	---	Bag Filter	---	Cyclone Seprater & Bag Filter	Bag Filter
05	Stack Height	Meter	30	30	30	32
06	Stack Diameter	Meter	0.588	0.584	0.588	---
07	Stack Temperature	°C	51	36	48	38
08	Ambient Temperature	°C	34	34	32	32
09	Average Velocity of Flue Gases	M/Sec.	10.5	12.9	13.1	12.9
10	Isokinetic flow rate for P.M. Sampling	LPM	19	24	23	24
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
13	Measured Concentration of PM	mg/Nm ³	51	48	82	48
14	Permissible limits for SO ₂	mg/Nm ³	40	40	40	40
15	Measured Concentration of SO ₂	mg/Nm ³	N.D.	N.D.	4.2	NIL
16	Permissible limits for Nox	mg/Nm ³	25	25	25	25
17	Measured Concentration of Nox	mg/Nm ³	N.D.	3.1	1.7	NIL

Note : Minimum Detectable Limit of SO₂ & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Both Stack kit Recalibration is Due on : 21/04/2013

N.D= Not Detectable

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Ref. No. : 196/10/2012-13

Date :23/10/2012

STACK EMISSION MONITORING RESULTS Pipe Complex- SDP

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

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

Sr. No.	Particulars	Unit	Stack No. 1	Stack No. 2	Stack No. 3
01	Date of Sampling	---	15-10-2012	18-10-2012	15-10-2012
02	Time of sampling	Hr.	17.00	15.30	16.00
03	Stack Attached to	---	Mg Converter -II	Zn Coating - III	Zn Coating - IV & V
04	Air Pollution Control Measures	---	Bag Filter	Cyclone Seprater & Bag Filter	Cyclone Seprater & Bag Filter
05	Stack Height	Meter	30	30	30
06	Stack Diameter	Meter	0.488	----	----
07	Stack Temperature	°C	49	42	54
08	Ambient Temperature	°C	34	34	33
09	Average Velocity of Flue Gases	M/Sec.	4	11.6	12.2
10	Isokinetic flow rate for P.M. Sampling	LPM	16	21	21
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0
12	Permissible limits for PM	mg/Nm3	150	20 (Zn)	20 (Zn)
13	Measured Concentration of PM.	mg/Nm3	86	14 (Zn)	17 (Zn)
14	Permissible limits for SO2	mg/Nm3	40	NA	NA
15	Measured Concentration of SO2	mg/Nm3	N.D.	NA	NA
16	Permissible limits for Nox	mg/Nm3	25	NA	NA
17	Measured Concentration of Nox	mg/Nm3	2.5	NA	NA

Note : Minimum Detectable Limit of SO2 & Nox is 0.1 and 0.01 ppm respectively.
Instrument Used : 2 Nos of Stack Monitoring Kit - Vayubodhan make - VSS I
Both Stack kit Recalibration is Due on : 21/04/2013

N.D.= Not Detectable

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Ref. No. : 197/10/2012-13

Date :23/10/2012

AMBIENT AIR QUALITY MONITORING REPORT

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

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

Sr. No.	Particulars	Unit	AAQM - 1	AAQM - 2	AAQM - 3	AAQM - 4
01.	Location of Ambient	----	Nr. New Colony	Nr. Old Colony	Inside Plant Area (Nr. Spiral II)	Nr. Temple
02.	Date of sampling	----	16/10/2012	16/10/2012	16/10/2012	16-10-2012
03.	Time of sampling	Hr.	15.30	16.15	14.00	17.00
04.	Duration of Sampling	Min.	1440.00	1440.00	1440.00	1440.00
05.	Dominant Wind Direction (From)	----	NW	NW	NW	NW
06.	Average Wind Speed	Km/Hr.	3 to 9	3 to 9	3 to 9	3 to 9
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	42	46	50	39
11.	Permissible limits for PM 2.5	µg/m ³	60	60	60	60
12.	Measured Concentration of PM 2.5	µg/m ³	30	29	21	33
13.	Permissible limits for SO_x	µg/m ³	80	80	80	80
14.	Measured Concentration of SO _x	µg/m ³	12.1	13.3	14	15.2
15.	Permissible limits for Nox	µg/m ³	80	80	80	80
16.	Measured Concentration of NO _x	µg/m ³	18.6	20.9	21.5	23.3
17.	Permissible limits for CO**	µg/m ³	2000	2000	2000	2000
18.	Measured Concentration of CO**	µg/m ³	320	300	410	340

Instrument used : 4 Nos of Envirotech make (RDS), and 2.5 Attachment Model No. APM - 460 BL, Gaseous Sampling Kit ,

N.D= Not Detectable

All are Calibration due on 1.) 04/05/2013, 22/04/2013 & 10/12/2012

** 08 hourly monitoring values

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

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

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

Date of Sampling : 19th & 20th October, 2012

Sr. No	Location Operation monitored	Identified Contaminate	Sampling Instrument used	Airborne Contamination			TWA concert ration (As given in Second Schedule)	Refrance Method	Number of workers exposed at the location being monitored	Remark	Signature person taking samples	Name (in block letters)
				Number of sample	Range	Average	mg/m3					
1	Spiral Plant Nr. ID/OD	Total Dust	Personal Respirable Dust sampler APM 800	02	1-6	3	10	Gravimetric	8	----	Mr. Shivpal Singh	
2	JCO Plant Nr. JCO Press	Total Dust		02	1-4	2.5	10	Gravimetric	6	----		
3	Sinter Plant At First Floor	Total Dust		02	1-5	3	10	Gravimetric	5	----		
4	BF Plant (Cast House)	CO		02	0.2-0.8	0.5	2	Gravimetric	9	----		
		Total Dust			1-8	4	10					
5	Coating Plant (Blasting Area)	Total Dust		02	1-6	3.5	10	Gravimetric	4	----		
6	DISP Plant Main Entrance	Total Dust	02	1-7	4.0	10	Gravimetric	10	----			

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

Calibration Date Due on : 10/12/2012

For. Royal Environment Auditing & Consultancy Service



Shivpal Singh
Authorized Sign



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Ref. No. :199/10/2012-13

Date :23/10/2012

WORK ZONE NOISE LEVEL MEASUREMENT

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

Date of Sampling : 19th &20th October, 2012

Sr. No.	Location of Sampling	Results Avg. in dB(A)
01.	Inside Control Room of Sinter Plant	66.8
02.	Nr. Stock House of BF	67.8
03.	Inside Control Room of BF	67.6
04.	Inside Control Room of Blower House	71.6
05.	Inside Control of Cast House	69.1
06.	Inside Control Room of CPP	72.2
07.	Inside Control Room of Annealing Furnace of DISP	68.4
08.	Inside Laboratory of BF	71.2
09.	Inside Laboratory of DISP	68.3
10.	Inside ID & OD Control Room of JCO Plant	71.9
11.	Inside Control Room – Mill area of Spiral Plant	73.4
12.	Inside Spiral – 1	71.5
13.	Nr. Pipe cutting Area of Spiral Plant	72.7
14.	Inside JCO Plant	69.5
15.	Nr. JCO Press	71.4
16.	Inside DISP Plant	73.6
17.	Inside Coating Plant	68.9

Instruments used : Sound level meter, Model : SL - 4001 (Lutron Make)
Range : A - 30 to 80 dB, B-50 to 100 dB,C-80 to 130 dB.

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Ref. No. : 200/10/2012-13

Date :23/10/2012

AMBIENT NOISE LEVEL MEASUREMENT

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

Date of Sampling : 19th &20th October, 2012

Sr. No.	Location of Sampling	Results in dB(A) (Day Time)	Results in dB(A) (Night Time)
	Permissible Limits	75.0	70.0
01.	Nr. Admin. Building	67.5	66.8
02.	Nr. Old Colony	66.2	65.6
03.	Nr. LPG Yard	65.8	64.9
04.	Nr. Sinter Plant	71.2	69.2
05.	Nr. R. O. Plant	68.7	67.6
06.	Nr. Gate No. 2	69.0	68.1
07.	Nr. New Colony	68.6	66.8

Instruments used : Sound level meter, Model : SL - 4001 (Lutron Make)

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

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Ref. No. : 201/10/2012-13

Date :23/10/2012

WATER SAMPLES ANALYSIS REPORT

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

Date of Sample Collection : 20/10/2012

Source of Sample : Borewell Water Sample From Nr, Mess

Sr. No.	Parameters	Unit	Acceptable Limit(*)	Permissible Limits(*)	Results
01.	Colour	Pt.Co.Scale	5	15	Colourless
02	Odour	--	Agreable	Agreable	Odourless
03	pH	pH Unit	6.5 to 8.5	No Relaxation	7.62
04.	T.D.S.	Mg/L	500	2000	1305
05.	Total Hardness	Mg/L	200	600	532
06.	Turbidity	NTU	1	5	1.2
07.	Chloride	Mg/L	250	1000	545
08.	Alkalinity	Mg/L	200	600	320
09.	Phenolic Compound	Mg/L	0.001	0.002	NIL
10.	Residual Chlorine	Mg/L	0.2	1.0	NIL
11.	Fluoride	Mg/L	1.0	1.5	0.35
12.	Ca as Ca	Mg/L	75	200	226
13.	Mg as Mg	Mg/L	30	100	306
14.	Copper	Mg/L	0.05	1.5	NIL
15.	Iron	Mg/L	0.3	No Relaxation	0.35
16.	Manganese	Mg/L	0.1	0.3	0.54
17.	Sulphate	Mg/L	200	400	0.12
18.	Nitrate	Mg/L	45	No Relaxation	10

(*) Acceptable Limit & Permissible Limits as per IS 10500 : 2012, Drinking Water Specification

Royal Environment Auditing & Consultancy Service



Shippal
Analyst



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Ref. No. : 202/10/2012-13

Date :23/10/2012

REPORT OF EFFLUENT ANALYSIS

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

Source Of Sample Collection : Domestic Effluent After Treatment

Date of Sample Collection : 20/10/2012

Sr. No.	Parameters	Unit	GPCB limits	STP Inlet	STP Outlet
01.	pH	pH Unit	-----	7.92	7.56
02.	BOD (3 Days at 27°C)	Mg/L	20	175	16
03.	Suspended Solids	Mg/L	30	85	15
04.	Residual Chlorine	Mg/L	Min. 0.5	----	0.54

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Analyst