Information to be provided for Monitoring of the Project

1. Raw Material Consumption & Steel Production:

Total Raw Material Consumption	Unit	2012-13	2013-14	2014-15
Purchase Coke	Tonne	8,00,163	4,44,728	91,518
Coking Coal (Incl HMC)	Tonne	55,62,519	63,23,023	69,68,056
Non-Coking Coal	Tonne	9,69,915	12,04,696	12,88,171
Middling Coal	Tonne	1,08,492	65,471	70,229
Iron Ore	Tonne	140,52,514	158,18,309	155,60,418
Purchase Pellet	Tonne	55,753	54,083	4,45,525
Lime Stone	Tonne	27,37,554	30,61,571	30,57,311
Dolomite & Pyroxenite	Tonne	4,80,829	6,69,743	7,98,312
Quartzite and Other materials	Tonne	63,019	66,364	34,861
Ferro Manganese - High Carbon Lumps	Tonne	15,822	14,343	11,364
Ferro Manganese - Medium Carbon	Tonne	6,569	11,650	11,662
Zinc & Zinc Alloys	Tonne	15,477	14,446	12,990
Total Crude Steel Production	Tonne	81,30,153	91,55,087	93,31,080
Total Saleable Steel	Tonne	79,41,247	89,30,835	90,72,620

2. Water Consumption, Recycling & Energy Consumption:

Parameters	Unit	2012-13	2013-14	2014-15
Specific Water Consumption	m^3/tcs	5.92	5.58	5.54
Water Consumed from Industrial Use	m^3/day	1,31,925	1,39,826	1,41,619
Effluent Recycled	m^3/day	13,121	17,601	35,003
Water Consumed from Domestic Use	m^3/day	1,82,282	1,89,874	1,94,214
Specific Energy Consumption	Gcal/tcs	6.08	6.02	6.012

3. Solid Waste Generation and Utilization:

Parameters	Unit	2012-13	2013-14	2014-15
BF Slag Generated	Tonne	27,82,041	32,14,518	34,26,943
BF Slag Utilized	Tonne	26,33,446	29,44,810	33,91,553
LD Slag Generated	Tonne	15,70,371	16,74,135	17,45,806
LD Slag Utilized	Tonne	8,85,333	14,60,893	5,18,149
Mill Sludge & Scale Generated	Tonne	1,22,142	1,48,202	1,02,292
Mill Sludge & Scale Utilized	Tonne	99,029	1,08,912	90,035
Process Dust Generated	Tonne	1,69,497	1,92,801	1,69,452
Process Dust Utilized	Tonne	1,64,715	1,73,054	2,41,085
BF Sludge Generated	Tonne	83,142	84,948	1,44,843
BF Sludge Utilized	Tonne	66,749	96,830	1,00,036
Iron Oxide Generated	Tonne	5,968	7,805	2,454
Iron Oxide Utilized	Tonne	6,033	7,700	2,686
Coal Tar Sludge Generated	Tonne	3,964	4,968	4,623
Coal Tar Sludge Utilized	Tonne	3,958	4,968	4,623
BOT Sludge Generated	Tonne	316	811	490
BOT Sludge Utilized	Tonne	316	811	490

4. Plantation, Environmental Expenditure & Occupational Health:

Parameters	Unit	2012-13	2013-14	2014-15
Plantation	Nos	45,929	39,276	28,576
Cumulative Environmental Expenditure	₹ Lakhs	37,544	39,729	41,809
Occupational Health Surveillance/Check-up	Nos.	16,144	16,643	16,662
No. of occupational diseases reported	Nos	0	0	0

5. Month Wise Quality of Iron Ore (2012-13 to 2014-15):

2012-13

Parameters	Units	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	2012-13
Noamundi-Blended fines														
Total Fe	%	65.67	65.36	65.65	65.23	64.99	65.30	65.24	65.13	65.54	65.72	65.79	65.47	65.42
SiO_2	%	1.37	1.68	1.41	1.93	2.09	1.67	1.89	1.81	1.38	1.42	1.41	1.65	1.64
Al_2O_3	%	2.06	2.11	2.06	2.11	2.34	2.20	2.25	2.26	2.23	2.17	2.12	2.12	2.17
Phos.	%	0.10	0.10	0.10	0.09	0.10	0.09	0.09	0.10	0.09	0.09	0.08	0.09	0.09
Joda-Classifier fines														
Total Fe	%	65.63	65.73	65.55	65.35	65.50	65.64	65.71	65.64	65.50	65.78	65.41	65.67	65.59
SiO_2	%	1.80	1.82	1.87	2.05	2.06	1.88	1.87	1.89	1.95	2.17	2.02	1.80	1.93
Al_2O_3	%	1.98	1.95	1.97	1.99	1.87	1.86	1.73	1.78	1.92	1.59	1.88	1.92	1.87
Phos.	%	0.07	0.07	0.07	0.07	0.07	0.06	0.07	0.07	0.07	0.06	0.07	0.07	0.07

2013-14

Parameters	Units	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	2013-14
Noamundi-Blended fines														
Total Fe	%	65.10	65.06	65.11	65.02	64.96	64.80	65.00	64.94	64.73	64.82	65.05	64.79	64.95
SiO_2	%	1.89	2.06	1.73	1.81	1.79	2.05	1.64	1.92	2.02	2.04	1.66	2.08	1.89
Al_2O_3	%	2.27	2.21	2.27	2.26	2.25	2.21	2.23	2.22	2.31	2.29	2.29	2.37	2.26
Phos.	%	0.08	0.08	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.08	0.09	0.07	0.09
Joda-Classifier fines														
Total Fe	%	64.73	64.82	64.86	65.08	64.63	64.47	64.74	65.24	64.79	65.12	64.99	65.11	64.88
SiO_2	%	2.25	1.97	2.06	1.89	2.18	2.58	2.47	2.02	2.30	2.00	2.28	1.98	2.17
Al_2O_3	%	2.07	2.07	2.16	2.11	2.20	2.12	2.01	1.91	2.04	1.95	1.90	1.96	2.04
Phos.	%	0.07	0.07	0.07	0.08	0.08	0.07	0.06	0.06	0.07	0.07	0.08	0.09	0.07

2014-15

Parameters	Units	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	2014-15
Noamundi-Blended fines														
Total Fe	%	64.95	64.69	64.49	64.34	64.51	-	-	-	-	64.78	65.07	64.83	64.71
SiO_2	%	2.17	2.08	2.30	2.64	2.77	-	-	-	-	2.16	1.93	1.96	2.25
Al_2O_3	%	2.31	2.50	2.59	2.49	2.30	-	-	-	-	2.57	2.48	2.62	2.48
Phos.	%	0.08	0.07	0.07	0.07	0.07	-	-	-	-	0.08	0.07	0.08	0.07
Joda-Classifier fines														
Total Fe	%	64.03	64.34	64.31	-	65.20	64.52	64.21	63.91	63.56	-	-	-	64.26
SiO_2	%	2.36	2.46	2.55	-	2.11	2.36	2.89	3.19	3.27	-	-	-	2.65
Al_2O_3	%	2.56	2.29	2.23	-	1.82	2.11	2.05	2.10	2.49	-	-	-	2.21
Phos.	%	0.09	0.07	0.07	-	0.08	0.08	0.06	0.07	0.07	-	-	-	0.07

6. Data on Accidents/Fatality:

Parameter	2010-11	2011-12	2012-13	2013-14	2014-15	Location	Major Primary Reasons	Measures / action taken		
								Preventive measures currently in place	Preventive measures proposed due to accidents	Action Taken
Reportable accidents (LTI)	65	80	97	103	50	Jamshedpur Works	• Slip/Trip/Fall • Fire/Explosion • Material handling • Burn Injury • Road Incident • Skidding • Hit or Press by Object • Collision/Dashing • Electrical Flash • Hydraulic / Pneumatic • Fall from height • Medical Ailment • Cut by Sharp edge • Energy isolation • Equipment machinery damage	1. Model work place system to improve work environment and reduce the slip/ trip/ fall cases 2. Elimination of man-machine intervention in material handling process. 3. Free bus services increased to commute mainly contract workers within the plant. 4. Fire and Gas audit system. 5. Deployment of speed monitoring cameras. 6. Safety Excellence centre & specialized training centre developed with NTTF to impart job specific training to contract employees. 7. Blind spot elimination of Heavy vehicles. 8. Fatality Risk control Program for identifying unsafe conditions/acts having fatality potential. 9. Safety training to regular & contract employees.	1. Road Safety Audit to improve behavioural aspect of road users and also imparting them defensive driving training. 2. Focused safety audit & observation on Slip / Trip/Fall hazard areas. 3. Training and counselling to employees to improve safety culture. 4. Pre start up safety review introduced in MSDs.	1. Rescued the injured persons to the First Aid Station for immediate medical treatment. 2. Containment action taken to prevent reoccurrence . 3. Investigation team formed to find out the root causes.
Fatal accidents	2	5	3	5	2	Jamshedpur Works	• Run Over • Hit or Press by Object • Collapse of material from side wall of excavated pit • Fire/Explosion • Heat Burn • Gas Exposure / Asphyxiation • Fall from height • Rail			

7. Environmental Monitoring Data (April 2014 to March 2015):

a. Stack Particulate Matter Emission Monitoring Report (Manual Monitoring)

	Manual Monitoring data (mg/Nm^3)												
Stack Location	**Norm* (mg/Nm^3)**	**Apr-14**	**May-14**	**Jun-14**	**Jul-14**	**Aug-14**	**Sep-14**	**Oct-14**	**Nov-14**	**Dec-14**	**Jan-15**	**Feb-15**	**Mar-15**
Battery#3	50	-	28	-	-	-	-	-	-	-	-	-	-
Battery#5	50	-	46	38	-	-	-	-	-	11	-	36	49
Battery#6	50	49	21	34	-	-	-	-	23	33	35	-	-
Battery#7	50	33	-	17	-	-	-	-	49	26	20	32	-
Battery#8	50	20	27	24	28	39	-	-	-	18	12	-	-
Battery#9	50	14	22	-	-	18	-	-	-	13	13	-	-
Battery#10	50	31	-	-	25	-	-	-	-	-	-	-	-
Battery#10 Dedusting	50	-	-	-	-	-	3	-	-	-	-	-	-
SP#1 waste gas	150	21	40	34	-	-	-	15	25		18	18	
SP#1 Dedusting	150	17	125	46	-	25	-	-	-	45	34	-	-
SP#2 waste gas	150	-	63	76	-	-	-	-	48			39	-
SP#2 Dedusting	150	-	-	-	-	-	-	-	-	-	-	19	-
SP#3 Combined	150	-	-	-	68	-	93	-	-	-	-	-	-
SP#4 Combined	150	-	-	-	-	-	-	-	-	-	-	-	-
F Bl.Furnace Cast House	100	-	-	-	-	18	-	25	7	15	15	-	-
F Bl.Furnace Stock House	100	-	17	-	-	24	17	-	13		10	-	-
G Bl. Furnace Cast House	100	50	17	-	15	-	9	-	-	19	12	10	-
G Bl.Furnace Stock House	100	-	-	92	-	-	59	-	-	-	-	-	-
H Bl.Furnace Cast House	100	13	-	8	-	-	17	7	8	10	11	-	18
H Bl.Furnace Stock House	100	19	24	10	-	-	-	14	-	11	17	-	13
I Bl.Furnace Cast House	100	8	14	-	6	-	13	7	-	10	13	-	11
I Bl.Furnace Stock House	100	23	13	26	21	19	54	39	38	24	27	-	25
LD #1 Sec. Emission	100	31	11	-	12	-	-	13	-	-	-	-	-
LD # 1 LF # 1	150	-	25	10	-	-	36	5	-	10		13	-
LD # 1 LF # 2	150	-	32	-	-	-	-	-	-	-	-	-	-
LD # 1 LF # 3	150	24	31	20	-	-	13	-	-	-	-	-	-
LD # 2 Sec. Emission 1	100	32	43	24	-	-	29	-	-	-	10	-	-
LD # 2 Sec. Emission 2	100	-	36	18	-	-	-	-	8	-	13	-	-
LD#2 LF# 1	150	23	16	-	-	-	3	-	6	-	10	-	-
LD#2 LF# 2	150	17	18	22	-	-	6	-	-	-	15	-	-
LD#3 Sec. Emission	100	9	-	-	-	-	15	-	17	-	10	-	10
LD#3 LF#1	150	26	55	14	-	2	-	3	-	10	-	12	-
LD#3 LF#2	150	18	59	15	-	7	-	18	-	15	-	15	-
Pellet Plant Wind Box	150	26	26	24	16	19	32	9	8	-	10	12	10
Pellet Plant Hood	150	-	16	12	11	10	12	6	6	-	-	10	13
Pellet Plant central dedusting	150	17	18	-	13	12	21	-	-	-	-	20	-

Manual Monitoring data (mg/Nm^3)													
Stack Location	**Norm* (mg/Nm^3)**	**Apr-14**	**May-14**	**Jun-14**	**Jul-14**	**Aug-14**	**Sep-14**	**Oct-14**	**Nov-14**	**Dec-14**	**Jan-15**	**Feb-15**	**Mar-15**
Pellet Plant combined dryer	150	20	29	30	21	40	69	-	-	-	-		47
Pellet Plant Grinding Mill 1	150	-	40	40	55	57	24	28	32	-	-	27.35	42
Pellet Plant Grinding Mill 2	150	39	33	22	35	35	-	13	13	-	-	16	21
Lime Plant MK# 1	150	4	9	4	33	13	-	-	20	-	20	-	17
Lime Plant MK# 2	150	3	16	9	21	9	-	36	8	-	12	-	10
Lime Plant MK# 3&4	150	-	-	-	-	9	-	6	10	-		10	
Lime Plant MK# 5	150	6	-	5	-	-	-	-	-	-	-	-	10
Lime Plant MK# 6	150	14	5	4	5	5	-	5		10			10
Lime Plant DE#12	150	23	26	24	34	-	-	-	34		10		10
Lime Plant MK# 7	150	5	12	7	11	5	-	9	-	12	-	11	-
Lime Plant DE#1B	150	9	-	3	4	65	-	*2*	-	10	10		-
Lime Plant MK# 7 DE 15	150	10	4	3	8	-	10	-	-	10		10	10
Lime Plant MK# 7 DE 16	150	-	-	-	-	-	-	-	-	-	-	-	-
Lime Plant MK# 8	150	8	9	13	18	-	-	15	26	-	19	-	26
Lime Plant MK# 9	150	11	11	15	19	18	-	39	32	-	22	-	25
Lime Plant DE#9	150	-	49	64	-	59	-	-	-	25	-	41	22
Power House#3 Boiler 5	350	-	21	13	5	-	-	-	-	-	-	-	30
Power House#3 Boiler 6	350	-	10	8	11	-	-	-	-	-	-	-	22
Power House#3 Boiler 7&8	350	44	4	93	-	-	-	-	-	-	-	-	32
Power House#4 Boiler 1 & 2	350	22	9	-	-	-	30	-	-	-	-	-	-
Power House#4 Boiler 3	350	36	17	-	-	-	-	-	-	-	-	-	-
Power House#4 Boiler 4	350	25	48	-	-	65	11	-	43	-	-	-	-
Power House#5 Boiler A	350	21	15	-	13	-	11	-	7	-	14	-	26
Power House#5 Boiler B&C	350	-	11	23	-	-	8	-	6	-	-	-	16
SGDP#1	150	-	-	-	85	-	-	-	-	-	-	31	-
SGDP#2	150	-	38	26	53	-	-	15	-	-	-	17	-
CRM PLTCM	150	28	4	-	-	-	-	-	-	13	-	-	-
CRM SPM	150	3	-	-	-	-	-	-	-	-	-	-	-
CRM CGL-1	150	8	7	9	-	-	-	-	-	-	-	-	-
CRM BAF	150	22	5	-	16	23	23	7	-	10	23	10	23
CRM ARP	150	40	-	-	-	-	-	44	49	-	30	-	-
CRM ECL	150	-	6	-	-	-	-	-	-	-	-	-	-
MM	150	-	38	50	34	-	-	-	-	37	-	-	-
WRM	150	40	37	-	38	-	30	-	21		-	-	-
NBM	150	-	32	-	40	-	-	-	-	22	-	-	-
HSM Reheating Furnace-1	150	-	-	76	-	-	32	-	-	-		25	-
HSM Reheating Furnace-2	150	-	-	51	-	-	20	-	-	-	13	10	-

b. Stack Particulate Matter Emission Monitoring Report (Online Monitoring)

	Online Monitoring data (mg/Nm^3)												
Stack Location	**Norm* (mg/Nm^3)**	**Apr-14**	**May-14**	**Jun-14**	**Jul-14**	**Aug-14**	**Sep-14**	**Oct-14**	**Nov-14**	**Dec-14**	**Jan-15**	**Feb-15**	**Mar-15**
Battery#3	50	48	44	45	46	34	37	50	-	-	-	-	-
Battery#5	50	32	45	34	33	34	30	27	13	16	32	39	41
Battery#6	50	33	35	28	24	22	33	24	29	47	41	47	48
Battery#7	50	23	33	35	39	30	37	39	29	25	16	21	28
Battery#8	50	46	27	37	44	47	38	28	25	24	16	19	23
Battery#9	50	32	48	39	43	35	27	46	37	26	13	9	16
Battery#10	50	-	-	-	-	49	41	47	39	39	40	39	40
SP#1 waste gas	150	-	-	63	30	28	34	47	39	41	30	34	19
SP#1 Dedusting	150	69	56	42	50	34	43	39		47	49	32	31
SP#2 waste gas	150	50	51	54	58	34	55	48	37	29	47	38	35
SP#2 Dedusting	150	137	140	83	43	55	63	49	49	-	-	-	-
SP#3 Combined	150	140	118	78	134	99	128	-	-	-	-	-	-
SP#4 Combined	150	134	114	141	136	148	83	-	-	-	-	-	-
F Bl.Furnace Stock House	100	42	53	42	45	38	37	32	28	47	17	14	18
G Bl. Furnace Cast House	100	9	10	21	7	9	7	11	14	22	18	27	36
G Bl.Furnace Stock House	100	94	54	81	79	64	65	-	-	-	-	-	-
H Bl.Furnace Cast House	100	19	10	4	3	4	6	10	-	6	6	12	17
H Bl.Furnace Stock House	100	19	13	12	9	12	11	19	-	23	23	33	24
I Bl.Furnace Cast House	100	3	2	3	2	5	2	10	10	10	10	13	8
I Bl.Furnace Stock House	100	5	6	6	6	8	8	10	12	11	11	11	20
LD # 2 Sec. Emission 1	100	30	62	50	21	67	27	-	19	16	10	12	26
LD # 2 Sec. Emission 2	100	38	69	49	15	41	38	-	30	20	22	21	28
LD#2 LF# 1	150	-	-	-	-	-	-	25	-	-	-	-	-
LD#2 LF# 2	150	-	-	-	-	-	-	22	-	-	-	-	-
LD#3 Sec. Emission	100	16	20	27	20	31	27	13	17	19	22	24	16
LD#3 LF#1	150	18	20	22	22	12	7	10	-	-	-	-	-
LD#3 LF#2	150	42	84	28	35	8	9	10	10	10	10	10	10
Pellet Plant Wind Box	150	-	-	-	-	34	32	-	-	-	-	-	42
Pellet Plant Hood	150	-	-	-	-	11	6	-	15	-	-	-	26
Pellet Plant central dedusting	150	-	-	-	-	12	10	12	18	-	-	-	21
Pellet Plant combined dryer	150	-	-	-	-	32	35	41	34	-	-	-	30
Lime Plant MK# 7	150	-	-	-	-	-	25	23	22	23	29	31	30
Lime Plant MK# 7 DE 15	150	11	13	15	17	20	23	29	28	29	30	34	35
Lime Plant MK# 7 DE 16	150	16	18	20	22	24	24	-	-	-	-	-	-
Lime Plant MK# 8	150	-	-	9	10	12	8	10	10	10	10	13	17
Lime Plant MK# 9	150	-	-	7	9	8	7	10	10	10	11	18	22
Power House#4 Boiler 4	350	34	29	28	28	34	23	-	-	-	-	-	-

Note - Standards applicable as per Environment (Protection) (Third Amendment) Rules, 2012 issued in Gazette of India Notification no. GSR 277 (E) –Dated March 31, 2012

c. Ambient Air Quality Monitoring Report (Works and Town)

1. April 2014

Sampling Area	Sample Location	Parameters											
		PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	NH_3	O_3	Pb	As	Ni	C_6H_6	BaP
		$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	ng/m^3	ng/m^3	$\mu g/m^3$	ng/m^3
Inside Works	West Plant First Air Centre	65	46	29	30	987	27	98	<0.5	<1.0	<1.0	<1.0	<0.5
	Cold Rolling Mill	50	39	31	24	1006	41	87	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 3 Gate	79	35	26	47	870	28	92	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 6 Gate	74	44	39	45	952	45	105	<0.5	<1.0	<1.0	<1.0	<0.5
Outside Works	River Pump House	81	-	11	21	-	-	-	-	-	-	-	-
	Southern Sewage Treatment Plant	70	-	8	15	-	-	-	-	-	-	-	-
	Golmuri	85	-	18	29	-	-	-	-	-	-	-	-
	Burmamines	87	-	18	30	-	-	-	-	-	-	-	-

2. May 2014

Sampling Area	Sample Location	Parameters											
		PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	NH_3	O_3	Pb	As	Ni	C_6H_6	BaP
		$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	ng/m^3	ng/m^3	$\mu g/m^3$	ng/m^3
Inside Works	West Plant First Air Centre	89	35	60	65	1142	33	86	<0.5	<1.0	<1.0	<1.0	<0.5
	Cold Rolling Mill	88	41	50	52	1211	34	104	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 3 Gate	86	40	55	59	540	21	95	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 6 Gate	80	42	58	60	756	32	79	0.5	<1.0	<1.0	<1.0	<0.5
Outside Works	River Pump House	80	-	12	32	-	-	-	-	-	-	-	-
	Southern Sewage Treatment Plant	77	-	16	29	-	-	-	-	-	-	-	-
	Golmuri	85	-	10	24	-	-	-	-	-	-	-	-
	Burmamines	88	-	13	26	-	-	-	-	-	-	-	-

3. June 2014

Sampling Area	Sample Location	Parameters											
		PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	NH_3	O_3	Pb	As	Ni	C_6H_6	BaP
		$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	ng/m^3	ng/m^3	$\mu g/m^3$	ng/m^3
Inside Works	West Plant First Air Centre	81	43	50	58	1185	30	77	<0.5	<1.0	<1.0	<1.0	<0.5
	Cold Rolling Mill	80	35	51	54	1257	36	92	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 3 Gate	84	48	47	55	516	22	105	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 6 Gate	84	43	54	60	789	34	91	0.3	<1.0	<1.0	<1.0	<0.5
Outside Works	River Pump House	78	-	15	28	-	-	-	-	-	-	-	-
	Southern Sewage Treatment Plant	90	-	19	33	-	-	-	-	-	-	-	-
	Golmuri	80	-	12	21	-	-	-	-	-	-	-	-
	Burmamines	82	-	16	28	-	-	-	-	-	-	-	-

4. July 2014

Sampling Area	Sample Location	Parameters											
		PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	NH_3	O_3	Pb	As	Ni	C_6H_6	BaP
		$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	ng/m^3	ng/m^3	$\mu g/m^3$	ng/m^3
Inside Works	West Plant First Air Centre	75	40	52	57	1098	34	78	<0.5	<1.0	<1.0	<1.0	<0.5
	Cold Rolling Mill	84	36	55	50	1128	28	84	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 3 Gate	77	45	44	52	496	26	96	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 6 Gate	81	39	51	63	795	41	107	0.4	<1.0	<1.0	<1.0	<0.5
Outside Works	River Pump House	73	-	21	26	-	-	-	-	-	-	-	-
	Southern Sewage Treatment Plant	86	-	23	38	-	-	-	-	-	-	-	-
	Golmuri	77	-	15	25	-	-	-	-	-	-	-	-
	Burmamines	88	-	22	33	-	-	-	-	-	-	-	-

5. Aug 2014

Sampling Area	Sample Location	Parameters											
		PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	NH_3	O_3	Pb	As	Ni	C_6H_6	BaP
		$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	ng/m^3	ng/m^3	$\mu g/m^3$	ng/m^3
Inside Works	West Plant First Air Centre	82	32	39	36	1010	34	98	<0.5	<1.0	<1.0	<1.0	<0.5
	Cold Rolling Mill	65	30	40	41	890	28	84	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 3 Gate	79	48	36	34	550	26	76	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 6 Gate	82	29	48	45	670	41	90	<0.5	<1.0	<1.0	<1.0	<0.5
Outside Works	River Pump House	70	-	22	31	-	-	-	-	-	-	-	-
	Southern Sewage Treatment Plant	81	-	16	29	-	-	-	-	-	-	-	-
	Golmuri	69	-	18	28	-	-	-	-	-	-	-	-
	Burmamines	78	-	20	26	-	-	-	-	-	-	-	-

6. Sep 2014

Sampling Area	Sample Location	Parameters											
		PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	NH_3	O_3	Pb	As	Ni	C_6H_6	BaP
		$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	ng/m^3	ng/m^3	$\mu g/m^3$	ng/m^3
Inside Works	West Plant First Air Centre	70	30	41	45	1184	37	81	<0.5	<1.0	<1.0	<1.0	<0.5
	Cold Rolling Mill	76	41	40	44	1054	30	76	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 3 Gate	69	38	41	48	410	24	94	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 6 Gate	72	33	43	51	820	39	102	<0.5	<1.0	<1.0	<1.0	<0.5
Outside Works	River Pump House	78	57	25	29	1205	42	117	<0.5	<1.0	<1.0	<1.0	<0.5
	Southern Sewage Treatment Plant	76	49	21	27	1157	51	123	<0.5	<1.0	<1.0	<1.0	<0.5
	Golmuri	74	61	15	21	1310	38	95	0.6	<1.0	<1.0	<1.0	<0.5
	Burmamines	82	69	26	32	1201	47	105	0.8	<1.0	<1.0	<1.0	<0.5

7. Oct 2014

Sampling Area	Sample Location	Parameters											
		PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	NH_3	O_3	Pb	As	Ni	C_6H_6	BaP
		$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	ng/m^3	ng/m^3	$\mu g/m^3$	ng/m^3
Inside Works	West Plant First Air Centre	74	35	44	41	1241	23	41	<0.5	<1.0	<1.0	<1.0	<0.5
	Cold Rolling Mill	71	-	38	40	1154	25	37	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 3 Gate	75	32	45	42	524	29	39	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 6 Gate	70	35	39	47	910	26	23	<0.5	<1.0	<1.0	<1.0	<0.5
Outside Works	River Pump House	81	-	22	27	-	-	-	<0.5	<1.0	<1.0	<1.0	<0.5
	Southern Sewage Treatment Plant	66	-	19	23	-	-	-	<0.5	<1.0	<1.0	<1.0	<0.5
	Golmuri	69	-	20	26	-	-	-	<0.5	<1.0	<1.0	<1.0	<0.5
	Burmamines	78	-	25	33	-	-	-	<0.5	<1.0	<1.0	<1.0	<0.5

8. Nov 2014

Sampling Area	Sample Location	Parameters											
		PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	NH_3	O_3	Pb	As	Ni	C_6H_6	BaP
		$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	ng/m^3	ng/m^3	$\mu g/m^3$	ng/m^3
Inside Works	West Plant First Air Centre	64	28	35	39	1184	30	75	<0.5	<1.0	<1.0	<1.0	<0.5
	Cold Rolling Mill	68	45	41	46	1238	31	72	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 3 Gate	71	33	37	41	498	22	71	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 6 Gate	66	32	42	49	954	39	84	<0.5	<1.0	<1.0	<1.0	<0.5
Outside Works	River Pump House	67	37	20	18	980	22	79	<0.5	<1.0	<1.0	<1.0	<0.5
	Southern Sewage Treatment Plant	79	33	22	20	1043	35	75	<0.5	<1.0	<1.0	<1.0	<0.5
	Golmuri	72	29	18	24	987	20	82	<0.5	<1.0	<1.0	<1.0	<0.5
	Burmamines	81	42	23	30	1087	36	80	<0.5	<1.0	<1.0	<1.0	<0.5

9. Dec 2014

Sampling Area	Sample Location	Parameters											
		PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	NH_3	O_3	Pb	As	Ni	C_6H_6	BaP
		$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	ng/m^3	ng/m^3	$\mu g/m^3$	ng/m^3
Inside Works	West Plant First Air Centre	80	26	29	35	1282	26	72	<0.5	<1.0	<1.0	<1.0	<0.5
	Cold Rolling Mill	66	41	38	41	1179	33	69	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 3 Gate	72	37	33	36	587	24	73	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 6 Gate	70	30	37	40	891	38	80	<0.5	<1.0	<1.0	<1.0	<0.5
Outside Works	River Pump House	62	35	24	22	856	21	67	<0.5	<1.0	<1.0	<1.0	<0.5
	Southern Sewage Treatment Plant	75	28	28	27	1123	27	72	<0.5	<1.0	<1.0	<1.0	<0.5
	Golmuri	69	27	20	21	1042	19	76	<0.5	<1.0	<1.0	<1.0	<0.5
	Burmamines	82	43	26	32	997	31	74	<0.5	<1.0	<1.0	<1.0	<0.5

10. Jan 2015

Sampling Area	Sample Location	Parameters											
		PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	NH_3	O_3	Pb	As	Ni	C_6H_6	BaP
		$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	ng/m^3	ng/m^3	$\mu g/m^3$	ng/m^3
Inside Works	West Plant First Air Centre	77	22	30	33	1180	22	62	<0.5	<1.0	<1.0	<1.0	<0.5
	Cold Rolling Mill	72	39	34	45	1249	24	58	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 3 Gate	69	33	27	38	547	30	70	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 6 Gate	81	28	31	32	798	26	78	<0.5	<1.0	<1.0	<1.0	<0.5
Outside Works	River Pump House	66	32	25	28	810	25	71	<0.5	<1.0	<1.0	<1.0	<0.5
	Southern Sewage Treatment Plant	70	33	22	19	1035	20	69	<0.5	<1.0	<1.0	<1.0	<0.5
	Golmuri	78	30	27	20	1124	27	78	<0.5	<1.0	<1.0	<1.0	<0.5
	Burmamines	80	37	26	24	1054	24	64	<0.5	<1.0	<1.0	<1.0	<0.5

11. Feb 2015

Sampling Area	Sample Location	Parameters											
		PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	NH_3	O_3	Pb	As	Ni	C_6H_6	BaP
		$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	ng/m^3	ng/m^3	$\mu g/m^3$	ng/m^3
Inside Works	West Plant First Air Centre	65	19	33	30	1220	24	54	<0.5	<1.0	<1.0	<1.0	<0.5
	Cold Rolling Mill	74	22	14	35	940	23	34	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 3 Gate	71	28	12	29	840	27	36	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 6 Gate	77	25	9	31	710	18	31	<0.5	<1.0	<1.0	<1.0	<0.5
Outside Works	River Pump House	57	31	8	25	700	21	36	<0.5	<1.0	<1.0	<1.0	<0.5
	Southern Sewage Treatment Plant	72	29	21	26	1126	24	65	<0.5	<1.0	<1.0	<1.0	<0.5
	Golmuri	70	35	31	24	1042	23	71	<0.5	<1.0	<1.0	<1.0	<0.5
	Burmamines	73	33	8	28	800	20	29	<0.5	<1.0	<1.0	<1.0	<0.5

12. Mar 2015

Sampling Area	Sample Location	Parameters											
		PM_{10}	$PM_{2.5}$	SO_2	NO_x	CO	NH_3	O_3	Pb	As	Ni	C_6H_6	BaP
		$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	ng/m^3	ng/m^3	$\mu g/m^3$	ng/m^3
Inside Works	West Plant First Air Centre	63	22	36	34	1047	20	43	<0.5	<1.0	<1.0	<1.0	<0.5
	Cold Rolling Mill	70	25	20	39	824	20	30	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 3 Gate	70	23	19	28	940	23	34	<0.5	<1.0	<1.0	<1.0	<0.5
	Power House # 6 Gate	73	20	15	26	768	21	25	<0.5	<1.0	<1.0	<1.0	<0.5
Outside Works	River Pump House	55	23	7	76	730	18	26	<0.5	<1.0	<1.0	<1.0	<0.5
	Southern Sewage Treatment Plant	65	21	18	24	994	21	61	<0.5	<1.0	<1.0	<1.0	<0.5
	Golmuri	63	28	23	23	1087	27	66	<0.5	<1.0	<1.0	<1.0	<0.5
	Burmamines	64	27	13	25	720	23	31	<0.5	<1.0	<1.0	<1.0	<0.5

- : No Data/could not monitored

Note: Standards applicable as per National Ambient Air Quality Standards vide Notification No.: B-29016/20/90/PCI-L dated 18th November 2009.

d. Effluent Quality Monitoring Report

Sample Location	Parameter	UoM	Apr-14			May-14			Jun-14			Jul-14			Aug-14			Sep-14		
			Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg
Susun Gharia	Ammonical Nitrogen (as N)	mg/L	39	10	23	28.0	8.4	19.3	31	7	18	28	11	21	38	14	23	23	11	18
	Free Cyanide (as CN^-)	mg/L	0.17	0.11	0.13	0.15	0.10	0.12	0.15	0.10	0.12	0.14	0.10	0.12	0.14	0.10	0.12	0.14	0.10	0.12
	Oil & Grease	mg/L	3.0	0.4	1.5	3.0	1.2	2.1	3.2	1.2	1.8	2.6	1.0	1.8	2.4	1.0	1.5	2.2	1.0	1.5
	Total Suspended solids	mg/L	71	10	47	68	13	45	57	22	40	45	20	31	51	21	35	58	28	41
	Chemical Oxygen Demand, COD	mg/L	67	19	38	75	25	44	58	26	40	84	62	71	57	21	40	42	15	25
	Biological Oxygen Demand, BOD	mg/L	5	4	5	16	4	10	14	10	13	16	10	13	11	5	7	10	6	8
	pH	-	8.3	7.9	8.1	8.4	7.9	8.2	8.3	7.9	8.1	8.20	7.80	8.08	8.3	7.7	8.1	8.2	7.8	8.1
Garam Nala	**Parameter**	UoM	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**
	Oil & Grease	mg/L	1.0	0.4	0.7	1.2	0.4	0.7	1.2	0.4	0.7	1.6	0.4	0.9	1.2	0.4	0.8	1.2	0.4	0.8
	Total Suspended solids	mg/L	37	10	19	49	9	25	32	4	17	36	13	26	30	10	19	30	10	19
	Chemical Oxygen Demand, COD	mg/L	16	9	12	14	10	12	15	6	11	26	10	16	22	10	18	22	10	18
	Biological Oxygen Demand, BOD	mg/L	16	12	14	14	2	7	5	2	3	5	3	3	12	3	8	12	3	8
	pH	mg/L	8.3	7.4	8.0	8.4	7.5	8.1	8.3	7.1	7.8	8.15	7.58	7.90	8.2	7.2	7.9	8.2	7.2	7.9
Ram Mandir Nala	**Parameter**	UoM	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**
	Oil & Grease	mg/L	1.8	0.6	0.8	1.8	0.8	1.1	1.8	0.6	1.1	1.8	0.6	1.2	1.4	0.6	0.9	1.8	0.4	1.0
	Total Suspended solids	mg/L	68	10	32	43	18	27	41	12	26	55	22	35	28	15	22	45	19	29
	Chemical Oxygen Demand, COD	mg/L	19	5	12	34	5	20	49	26	35	50	27	36	16	11	13	24	16	20
	Biological Oxygen Demand, BOD	mg/L	6	3	4	8	6	7	8	5	6	6	4	5	4	2	3	7	4	5
	pH	mg/L	8.4	7.5	7.8	8.4	7.5	8.1	8.2	7.1	7.9	8.28	7.65	8.09	8.2	7.4	7.9	8.2	7.5	8.0
HSM Drain	**Parameter**	UoM	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**
	Oil & Grease	mg/L	4.0	1.2	2.0	2.8	1.2	2.2	3.2	1.2	2.2	3.4	1.6	2.6	3.6	2.0	2.8	3.2	1.6	2.3
	Total Suspended solids	mg/L	89	24	44	74	26	47	55	23	39	65	25	45	55	26	44	51	20	39
	Chemical Oxygen Demand, COD	mg/L	94	29	58	99	37	75	85	30	54	74	54	63	65	32	47	17	10	13
	Biological Oxygen Demand, BOD	mg/L	15	1	8	37	14	23	21	15	18	13	9	11	10	5	7	6	4	5
	pH	mg/L	8.2	7.4	8.0	8.4	7.5	8.0	8.3	7.8	8.1	8.21	7.60	8.01	8.2	7.4	7.9	8.3	7.9	8.1

Sample Location	Parameter	UoM	Oct-14			Nov-14			Dec-14			Jan-15			Feb-15			Mar-15		
			Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg
Susun Gharia	Ammonical Nitrogen (as N)	mg/L	24.0	8.5	17.6	26.0	6.1	13.8	28.2	4.9	18.4	24.2	13.0	18.0	26.5	12.4	19.4	36.0	12.0	19.5
	Free Cyanide (as CN-)	mg/L	0.19	0.12	0.16	0.19	0.1	0.2	0.18	0.1	0.1	0.19	0.1	0.2	0.18	0.1	0.2	0.18	0.1	0.1
	Oil & Grease	mg/L	4.0	1.6	2.3	4.0	1.6	2.4	3.8	0.8	2.6	3.6	1.6	2.3	3.0	1.2	2.3	3.2	1.2	2.0
	TotalSuspendedsolids	mg/L	65.0	30.0	46.5	60.0	34.0	42.9	77.0	15.0	55.2	44.0	21.0	35.1	73.0	35.0	49.4	62.0	21.0	41.0
	Chemical Oxygen Demand, COD	mg/L	110.0	24.0	69.7	99.0	60.0	82.6	65.0	24.0	46.0	48.0	38.0	44.3	30.0	13.0	23.0	76.0	18.0	52.3
	Biological Oxygen Demand, BOD	mg/L	17.0	8.0	13.7	16.0	14.0	15.0	8.0	6.0	7.3	13.0	11.0	12.0	5.0	4.0	4.5	10.4	1.1	7.1
	pH	-	8.4	7.9	8.2	8.4	7.2	8.1	8.5	7.3	8.1	8.2	6.9	7.7	8.5	8.0	8.3	8.4	7.7	8.1
Garam Nala	**Parameter**	UoM	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**
	Oil & Grease	mg/L	1.6	0.8	1.2	1.6	0.8	1.2	1.6	0.6	1.1	1.2	0.4	0.8	1.6	0.6	1.0	1.2	0.4	0.9
	TotalSuspendedsolids	mg/L	35.0	12.0	21.3	28.0	12.0	18.9	28.0	15.0	19.8	26.0	12.0	18.2	50.0	10.0	23.3	29.0	7.0	18.0
	Chemical Oxygen Demand, COD	mg/L	45.0	42.0	43.5	32.0	29.0	30.3	48.0	11.0	25.7	42.0	22.0	32.7	28.0	21.0	24.3	46.0	21.0	34.3
	Biological Oxygen Demand, BOD	mg/L	8.0	2.0	4.7	8.0	6.0	7.0	7.0	3.0	4.7	11.0	5.0	8.0	7.6	4.0	6.2	19.7	5.0	10.2
	pH	mg/L	8.4	7.2	7.9	8.4	7.0	7.8	8.5	7.5	8.1	8.3	6.8	7.7	8.3	7.2	7.9	8.2	7.0	7.9
Ram Mandir Nala	**Parameter**	UoM	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**
	Oil & Grease	mg/L	2.8	1.0	1.5	2.2	1.2	1.7	2.4	0.6	1.8	1.4	0.4	0.8	1.6	0.6	0.9	1.4	0.6	1.0
	Total Suspendesolids	mg/L	48.0	13.0	27.5	38.0	15.0	26.7	35.0	12.0	25.4	21.0	11.0	15.7	52.0	12.0	26.6	52.0	14.0	25.4
	Chemical Oxygen Demand, COD	mg/L	60.0	36.0	48.0	29.0	20.0	24.0	20.0	12.0	15.7	32.0	23.0	28.0	26.0	12.0	17.7	41.0	30.0	35.7
	Biological Oxygen Demand, BOD	mg/L	6.0	3.0	4.3	5.0	3.0	4.0	4.0	2.0	3.3	10.0	7.0	8.3	3.0	1.0	1.7	5.8	4.2	4.9
	pH	mg/L	8.2	7.2	7.5	8.0	7.1	7.5	8.4	7.6	8.0	8.2	7.6	7.9	8.2	7.7	7.9	8.3	7.2	8.0
HSM Drain	**Parameter**	UoM	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**	**Max**	**Min**	**Avg**
	Oil & Grease	mg/L	5.6	2.4	3.7	4.8	1.8	3.5	4.8	1.0	3.4	4.0	1.4	2.4	4.0	1.6	2.5	3.8	1.2	2.4
	Total Suspended solids	mg/L	78.0	32.0	51.6	70.0	32.0	50.4	76.0	22.0	55.3	52.0	28.0	38.5	56.0	28.0	41.8	69.0	22.0	43.8
	Chemical Oxygen Demand, COD	mg/L	65.0	44.0	51.7	51.0	41.0	46.0	35.0	30.0	32.3	87.0	12.0	47.0	48.0	35.0	42.3	32.0	23.0	26.3
	Biological Oxygen Demand, BOD	mg/L	15.0	13.0	14.0	16.0	10.0	12.6	14.0	3.0	6.8	17.0	14.0	15.5	13.2	2.5	6.6	15.2	6.9	11.7
	pH	mg/L	8.4	7.8	8.2	8.4	7.8	8.1	8.5	7.4	8.1	8.3	7.0	7.8	8.3	7.5	7.9	8.4	7.5	8.1

Note: Standards applicable as per Environment (Protection) (Third Amendment) Rules, 2012 issued in Gazette of India Notification vide No.: G. S. R. 277 (E) dated March 31, 2012.

e. River Monitoring Report

DATE	SAMPLING LOCATION	SAMPLE TYPE	TSS	pH	TDS	BOD	COD	Fe	Zn	Cr (VI)	Mn	SO4-2	Cl-	TH	Cu	Pb	NO3	Cd	DO	Ni
			mg/L	-	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Apr-14	KHARKHAI RIVER (NEAR ADITYAPUR BRIDGE)	**RW**	13	8.0	340	13	24	NT	0.49	NT	0	49	50	274	NT	0	0.39	0.05	5.8	0.02
	KHARKHAI RIVER (NEAR DUMUHANI)	**RW**	6	8.1	140	11	41	NT	0.31	NT	0	7	25	88	NT	0	NT	NT	5.2	0.03
	SWARNREKHA RIVER(NEAR MANGO BRIDGE)	**RW**	19	8.6	130	12	38	NT	0.65	NT	0.1	14	35	87	0	0.1	0.13	NT	5.2	0.05
	SWARNREKHA RIVER(NEAR BAGUN HATU)	**RW**	23	7.8	230	4	15	0.56	0.24	0.02	0.2	27	65	109	0	0	0.58	NT	4.8	0.12
May-14	KHARKHAI RIVER (NEAR ADITYAPUR BRIDGE)	**RW**	15	7.9	420	7	13	0.59	0.32	NT	0.1	57	53	280	NT	0	0.28	NT	5.0	0.04
	KHARKHAI RIVER (NEAR DUMUHANI)	**RW**	12	8.4	340	8	17	0.22	0.35	NT	0.1	11	23	84	NT	0.1	0.20	0.03	4.6	0.05
	SWARNREKHA RIVER(NEAR MANGO BRIDGE)	**RW**	25	8.1	140	10	5	0.06	0.58	NT	0.1	21	36	81	0	0.1	0.22	NT	5.7	0.07
	SWARNREKHA RIVER(NEAR BAGUN HATU)	**RW**	20	7.9	230	6	NT	0.24	0.18	0.04	0	35	64	115	0.1	0	0.51	NT	4.2	0.15
Jun-14	KHARKHAI RIVER (NEAR ADITYAPUR BRIDGE)	**RW**	35	7.7	240	4	1	NT	0.35	NT	0	50	51	250	NT	0	0.40	0.03	5.8	0.03
	KHARKHAI RIVER (NEAR DUMUHANI)	**RW**	12	8.0	350	2	2	NT	0.25	NT	0	12	20	85	NT	0.1	0.15	NT	4.2	0.06
	SWARNREKHA RIVER(NEAR MANGO BRIDGE)	**RW**	20	7.8	180	6	NT	NT	0.08	NT	0.1	14	39	82	0	0.1	0.11	NT	6.7	0.04
	SWARNREKHA RIVER(NEAR BAGUN HATU)	**RW**	15	8.7	170	4	NT	0.4	0.26	NT	0.2	28	65	102	0.1	0	0.47	NT	4.0	0.10
Jul-14	KHARKHAI RIVER (NEAR ADITYAPUR BRIDGE)	**RW**	52	7.9	40	11	34	NT	0.52	NT	0	50	60	279	NT	0	0.43	0.03	7.6	0.04
	KHARKHAI RIVER (NEAR DUMUHANI)	**RW**	24	7.8	50	12	57	NT	0.34	NT	0	9	40	93	NT	0.1	NT	NT	7.3	0.07
	SWARNREKHA RIVER (RPH)	**RW**	22	7.9	40	9	35	NT	0.63	NT	0.1	16	25	89	0	0.1	0.15	NT	7.7	0.08
	SWARNREKHA RIVER(NEAR BAGUN HATU)	**RW**	25	8.0	80	5	17	0.60	0.26	0.04	0.3	24	55	112	0	0	0.62	NT	7.0	0.14
Aug-14	KHARKHAI RIVER (NEAR ADITYAPUR BRIDGE)	**RW**	42	8.6	140	6	38	0.14	1.20	0.03	0.1	51	50	110	NT	NT	0.18	NT	6.4	0.18
	KHARKHAI RIVER (NEAR DUMUHANI)	**RW**	29	7.8	110	3	12	0.08	1.10	0.03	0.1	18	25	94	NT	NT	1.40	NT	5.2	0.18
	SWARNREKHA RIVER(NEAR MANGO BRIDGE)	**RW**	43	8.1	160	4	19	0.12	0.90	0.03	0.2	13	35	98	NT	NT	1.60	NT	4.8	0.21
	SWARNREKHA RIVER(NEAR BAGUN HATU)	**RW**	45	7.9	110	5	35	0.11	0.80	0.03	0.2	25	31	116	NT	NT	1.50	NT	5.0	0.17
Sep-14	KHARKHAI RIVER (NEAR ADITYAPUR BRIDGE)	**RW**	125	8.1	100	8	8.8	0.17	0.27	0.07	0.2	43	47	210	0.1	0	NT	NT	6.2	0.06
	KHARKHAI RIVER (NEAR DUMUHANI)	**RW**	150	8.1	110	7	NT	0.10	0.35	0.08	0.1	9	20	76	0.1	0	NT	NT	4.8	0.01
	SWARNREKHA RIVER(NEAR MANGO BRIDGE)	**RW**	130	8.2	120	9	6.7	0.16	0.59	0.02	0.2	26	38	72	0.1	0	NT	0.18	6.1	0.07

	SWARNREKHA RIVER(NEAR BAGUN HATU)	**RW**	184	8.1	270	9	4	0.12	0.38	0.04	0.2	30	44	98	0.1	0	3.50	NT	5.2	0.10
DATE	**SAMPLING LOCATION**	**SAMPLE TYPE**	**TSS**	**pH**	**TDS**	**BOD**	**COD**	**Fe**	**Zn**	**Cr (VI)**	**Mn**	**SO4-2**	**Cl-**	**TH**	**Cu**	**Pb**	**NO3**	**Cd**	**DO**	**Ni**
			mg/L	**-**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Oct-14	KHARKHAI RIVER (NEAR ADITYAPUR BRIDGE)	**RW**	16	8.1	180	NT	NT	0.15	0.40	0.08	0.1	50	16	189	0.1	0	2.30	0.1	7.2	0.07
	KHARKHAI RIVER (NEAR DUMUHANI)	**RW**	16	8.0	140	8	NT	0.12	0.22	0.09	0.1	22	18	77	0	0	1.00	NT	6.8	0.03
	SWARNREKHA RIVER(NEAR MANGO BRIDGE)	**RW**	10	8.3	130	NT	NT	0.15	0.16	0.02	0.2	27	16	63	0.1	0	0.50	0.14	5.5	0.05
	SWARNREKHA RIVER(NEAR BAGUN HATU)	**RW**	15	8.2	240	NT	NT	0.13	0.15	0.05	0.2	32	23	105	0.1	0	1.50	NT	5.9	0.08
Nov-14	KHARKHAI RIVER (NEAR ADITYAPUR BRIDGE)	**RW**	38	8.3	220	NT	24	0.13	0.50	0.07	0.2	42	50	165	0	0	NT	0.09	5.8	0.09
	KHARKHAI RIVER (NEAR DUMUHANI)	**RW**	32	8.3	140	4	16	0.14	0.42	0.02	0.2	18	24	43	0.1	0	NT	0.01	5.6	0.03
	SWARNREKHA RIVER(NEAR MANGO BRIDGE)	**RW**	13	8.1	200	2	14	0.12	0.22	0.04	0.2	17	30	59	0.1	0	NT	NT	6.2	0.08
	SWARNREKHA RIVER(NEAR BAGUN HATU)	**RW**	7	8.1	210	5	22	0.12	0.32	0.08	0	20	51	67	0	0	1.80	NT	4.8	0.02
Dec-14	KHARKHAI RIVER (NEAR ADITYAPUR BRIDGE)	**RW**	20	8.2	230	3	15	NT	0.49	NT	0.2	33	55	220	NT	0	1.04	0.03	4.8	0.02
	KHARKHAI RIVER (NEAR DUMUHANI)	**RW**	9	8.0	230	6	20	NT	0.38	NT	0.1	28	30	168	NT	0.1	NT	NT	5.5	0.09
	SWARNREKHA RIVER(NEAR MANGO BRIDGE)	**RW**	7	8.5	130	3	13	NT	0.68	NT	0.1	23	35	142	NT	0.1	0.84	NT	5.2	0.10
	SWARNREKHA RIVER(NEAR BAGUN HATU)	**RW**	31	8.4	220	2	18	NT	0.18	0.08	0.3	28	70	110	0	0.1	1.14	NT	6.2	0.20
Jan-15	KHARKHAI RIVER (NEAR ADITYAPUR BRIDGE)	**RW**	5	8.1	80	2	NT	0.2	0.26	NT	-	26	49	290	0	0	0.60	0.03	7.3	NT
	KHARKHAI RIVER (NEAR DUMUHANI)	**RW**	9	7.9	210	5	155	0.2	0.20	NT	0	17	39	210	0	0.1	0.40	0.05	4.9	0.01
	SWARNREKHA RIVER(NEAR MANGO BRIDGE)	**RW**	6	8.1	140	2	NT	0	0.33	NT	0	21	44	210	0	0	0.30	NT	8.9	0.04
	SWARNREKHA RIVER(NEAR BAGUN HATU)	**RW**	4	8.1	160	2	NT	NT	0.21	NT	-	22	41	142	0	0	0.22	NT	7.6	NT
Feb-15	KHARKHAI RIVER (NEAR ADITYAPUR BRIDGE)	**RW**	12	7.9	180	8	10	NT	0.41	NT	0	50	70	200	NT	0	2.10	0.04	6.2	NT
	KHARKHAI RIVER (NEAR DUMUHANI)	**RW**	10	8.0	200	5	8	NT	0.20	0.02	0	17	85	200	NT	0	NT	NT	5.5	NT
	SWARNREKHA RIVER(NEAR MANGO BRIDGE)	**RW**	9	8.0	130	3	12	NT	0.62	NT	0	17	65	300	NT	0	NT	NT	8.2	NT
	SWARNREKHA RIVER(NEAR BAGUN HATU)	**RW**	10	7.8	170	4	69	0.1	0.22	NT	0	30	115	400	0	0	NT	NT	7.0	NT
Mar-15	KHARKHAI RIVER (NEAR ADITYAPUR BRIDGE)	**RW**	12	7.7	530	8	16	NT	0.20	0.02	0	41	54	180	NT	0	2.18	NT	5.6	NT
	KHARKHAI RIVER (NEAR DUMUHANI)	**RW**	11	8.0	160	6	38	NT	0.21	0.01	0	24	28	160	NT	0	NT	0.03	7.2	NT
	SWARNREKHA RIVER(NEAR MANGO BRIDGE)	**RW**	14	8.2	180	3	NT	NT	0.40	NT	0	22	37	150	NT	0.1	NT	NT	4.6	NT
	SWARNREKHA RIVER(NEAR BAGUN HATU)	**RW**	10	7.9	240	3	11	0.1	0.23	NT	0	30	67	220	0.1	0.1	NT	NT	5.5	NT

f. Ground Water Monitoring Report

DATE	SAMPLING LOCATION	Sample Type	pH	TDS	Fe	Zn	Cr (VI)	SO4	Cl-	Cu	Pb	NO3	Cd	Ni	TH	Ca	Mg
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Jun-14	Parvati Ghat Dump site	GW	7.2	670	0.04	0.13	0.003	65	210	0.04	NT	4.2	0.06	0.11	780	210	159
	Jemco Dump site	GW	7.2	850	0.04	0.11	0.003	86	110	0.02	NT	3.5	NT	0.03	390	85	55.6
	Jugsalai muck dump site	GW	7.3	800	0.11	0.06	0.004	64	134	0.04	0.03	1.2	0.06	0.16	410	218	70.6
	Bara Site dump Site	GW	7.1	890	0.02	0.11	0.002	60	150	NT	0.02	2.8	-	0.06	330	50	84.2
Jul-14	CRM Groundwater	GW	6.2	340	0.04	0.02	0.040	-	60	0.03	0.02	0.2	-	NT	-	-	-
	Ram mandir	GW	7.2	490	0.10	NT	NT	-	65	NT	0.16	0.04	-	NT	-	-	-
Sep-14	Parvati Ghat Dump site	GW	7.1	750	0.02	0.11	0.004	78	224	0.01	0.06	3.7	0.02	0.19	850	187	142
	Jemco Dump site	GW	7.1	900	0.02	0.13	NT	97	104	0.01	NT	4.8	NT	0.04	370	55	49.9
	Jugsalai muck dump site	GW	7.2	760	0.10	0.07	0.006	52	128	0.02	0.01	1.2	0.1	0.11	360	147	65.5
	Bara Site dump Site	GW	7.0	680	0.04	0.13	NT	51	124	NT	0.02	2.6	0.02	0.07	219	65	80.4
Oct-14	Ram mandir	GW	7.1	400	NT	NT	NT	-	74	0.01	0.12	0.1	-	0.10	-	-	-
Dec-14	Parvati Ghat Dump site	GW	7.0	680	0.02	0.14	NT	70	169	0.03	-	2.8	-	0.13	770	156	113
	Jemco Dump site	GW	7.2	810	0.06	0.13	0.003	90	115	0.05	-	6.7	NT	0.02	390	48	42.8
	Jugsalai muck dump site	GW	7.2	790	0.15	0.1	0.004	56	110	0.02	-	2.0	-	0.14	240	107	57.9
	Bara Site dump Site	GW	7.1	850	0.07	0.1	NT	56	122	NT	0.03	3.1	NT	0.06	196	46	79.8
Jan-15	CRM Groundwater	GW	6.94	350	NT	NT	NT	_	148	NT	0.21	3.30	_	0.12	-	-	-
	Ram mandir Groundwater	GW	6.9	350	NT	NT	NT	-	148	NT	0.21	3.30	-	0.12	-	-	-
	Parvati Ghat Dump site	GW	9.2	570	-	0.51	NT	53	54	0.02	0.05	0.01	0.05	1.37	890	220	163
	Sonari Dump site	GW	6.8	180	-	0.51	NT	56	25	0.03	0.05	0.04	0.04	0.43	550	215	82.4
	Jemco Dump site	GW	7.1	500	0.75	0.42	NT	60	30	0.08	0.03	0.30	0.05	0.14	310	86	54.4
	Jugsalai muck dump site	GW	7.0	220	0.10	0.45	NT	52	20	0.01	0.02	0.04	0.06	0.46	510	212	72.4
	Bara Site dump Site	GW	7.2	300	0.05	0.44	NT	60	30	0.01	0.04	0.05	NT	0.03	340	42	72.4

Annexure – 1: Monitoring and Analysis Reports

DATE	SAMPLING LOCATION	SAMPLE TYPE	pH	TDS	Fe	Zn	Cr (VI)	SO4	Cl-	Cu	Pb	NO3	Cd	Ni	TH	Ca	Mg
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Feb-15	Ram mandir Groundwater	GW	7.4	611	NT	NT	NT	-	130	NT	0.15	3.00	-	0.15	-	-	-
	Parvati Ghat Dump site	GW	8.5	620	-	0.26	NT	58	46	0.04	0.05	0.10	0.02	1.28	520	180	150
	Sonari Dump site	GW	7.1	200	0.02	0.31	NT	75	29	0.02	0.03	0.14	0.02	0.23	510	207	73.4
	Jemco Dump site	GW	7.6	420	0.55	0.22	NT	55	30	0.06	0.02	0.30	0.03	1.04	240	76	55.8
	Jugsalai muck dump site	GW	7.1	280	0.07	0.34	NT	42	26	0.02	0.01	0.65	0.02	0.56	260	210	70
	Bara Site dump Site	GW	7.4	340	0.06	0.28	NT	63	22	0.01	0.06	0.88	0.02	0.04	370	53	64.2
Mar-15	Ram mandir Groundwater	GW	7.2	500	NT	0.04	0.020	-	82	NT	0.11	2.14	-	0.11	-	-	-
	Parvati Ghat Dump site	GW	6.6	530	0.03	0.16	NT	51	114	-	0.02	1.05	-	0.03	310	50	66.2
	Sonari Dump site	GW	7.0	550	NT	0.22	NT	60	42	0.02	0.01	0.18	0.02	0.29	240	135	64.2
	Jemco Dump site	GW	6.7	440	0.24	0.18	NT	43	106	0.04	NT	1.08	0.02	1.02	160	54	50.2
	Jugsalai muck dump site	GW	7.2	570	0.13	0.24	0.002	42	30	0.03	-	1.17	0.05	0.34	230	120	45.2
	Bara Site dump Site	GW	7.1	890	NT	0.12	NT	67	120	0.03	-	2.24	0.03	1.22	420	210	66.8

g. Noise Level Monitoring Report

Sl. No.	Area	Apr-14		May-14		Jun-14		Jul-14		Aug-14		Sep-14	
		Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time
A)	**SILENCE ZONE**												
1	TMH (Near Status)	66.3	60.4	44.6	33.1	66.2	61.9	68.3	60.2	44.0	41.0	55.2	54.1
2	JUSCO School Kadma	64.7	58.1	46.2	26.7	67.6	67.6	76.7	70.1	62.0	57.3	71.6	60.3
3	Kerala Public School Bistupur	71.1	61.2	43.5	31.2	68.5	64.2	74.2	65.1	55.0	49.2	54.2	50.3
4	South Park School Bistupur	68.5	54.2	40.5	21.1	63.6	59.8	71.2	54.1	58.0	47.5	58.7	51.1
5	Old Court Area (Jubilee Park)	75.7	68.1	48.2	23.4	77.2	75.3	78.9	53.2	60.0	52.7	70.2	66.2
B)	**RESIDENTIAL ZONE**												
1	Circuit House Area (North)	70.3	55.2	50.4	40.1	64.2	60.8	69.5	61.8	57.0	48.7	65.7	52.1
2	B.H. Area	68.2	48.9	46.8	26.4	62.7	61.2	71.5	66.2	68.3	54.5	71.2	60.4
3	Farm Area	64.7	57.2	49.1	32.5	63.4	60.1	73.2	54.1	66.8	52.3	67.8	56.2
4	Baridih Basti	66.2	56.4	51.8	41.6	70.3	65.2	69.1	62.7	70.0	55.6	69.1	55.4
5	Carriage Colony Burma Mines	69.4	54.3	52.4	40.3	69.8	63.9	70.3	58.4	68.7	57.4	68.6	57.2
6	Agrico Colony	71.2	59.7	49.9	39.8	70.1	66.7	74.5	64.3	67.6	53.1	65.9	50.3
7	South Park	70.1	66.2	52	36.4	64.3	58.5	73.7	52.4	66.9	56.5	68.7	55.2
C.	**COMMERCIAL ZONE**												
1	Sakchi Market	79.3	61.5	61.8	50.1	81.3	78.3	78.1	72.1	75.7	63.2	80.8	71.4
2	Golmuri Market	74.1	59.2	60.8	49.1	76.2	70.5	76.2	63.2	73.4	66.3	69.3	53.2
3	Burma Mines Market	70.8	58.1	61	43.5	72.8	68.7	73.1	62.4	74.6	64.1	72.7	60.8
4	Apna Bazar Bistupur	72.1	60.2	59.8	50.7	79.5	71.4	74.6	62.1	67.1	56.5	68.3	54.2
5	'R' Road Bistupur(Behind Nalanda Hotel)	75.8	57.3	63.9	46.2	73.7	69.8	70.3	61.9	69.7	58.3	70.6	50.7
D)	**INDUSTRIAL ZONE**												
1	EAST SIDE	70.5	60.1	62.5	60.0	66.1	65.9	71.2	66.4	68.6	73.5	75.9	65.3
2	WEST SIDE	69.5	49.5	68.9	66.8	60.4	69.8	69.5	58.2	67.4	67.2	77.4	61.8
3	NORTH	72.3	58.8	64.6	70.9	61.4	78.5	65.3	50.4	67.5	78.7	79.1	70.2
4	SOUTH	63.5	42.3	68.9	59.1	54.7	62.3	64.7	54.2	69.8	65.2	73.8	62.5
5	NORTH EAST	65.2	48.7	65.4	70.2	60.5	73.5	68.4	62.1	71.5	74.8	78.2	70.3
6	NORTH WEST	69.7	55.4	68.5	54.8	49.9	63.7	71.0	60.6	58.1	50.3	58.1	49.6
7	SOUTH EAST	66.4	50.4	70.1	57.8	55.4	67.9	73.1	62.2	55.3	59.2	69.3	55.6
8	SOUTH WEST	63.2	47.9	63.4	61.7	58.7	59.1	68.3	56.5	65.2	68.7	78.9	62.7

Sl. No.	Area	Oct-14		Nov-14		Dec-14		Jan-15		Feb-15		Mar-15	
		Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time	Day Time	Night Time
A)	**SILENCE ZONE**												
1	TMH (Near Status)	54	49	68	50	50	45	63	49	67	61	68	52
2	JUSCO School Kadma	56	53	70	53	65	60	67	53	71	65	73	55
3	Kerala Public School Bistupur	48	46	66	49	68	56	60	46	75	63	66	47
4	South Park School Bistupur	44	40	74	42	70	60	69	59	70	54	70	56
5	Old Court Area (Jubilee Park)	55	63	71	60	69	53	79	63	73	55	74	62
B)	**RESIDENTIAL ZONE**												
1	Circuit House Area (North)	54	53	69	50	51	47	79	60	69	50	64	58
2	B.H. Area	50	49	72	50	66	59	80	48	72	57	67	48
3	Farm Area	51	47	73	44	68	59	77	52	64	50	69	53
4	Baridih Basti	53	52	68	51	63	59	64	51	60	43	65	53
5	Carriage Colony Burma Mines	56	51	70	50	68	59	71	53	68	49	64	54
6	Agrico Colony	56	51	70	56	70	66	70	55	66	52	67	53
7	South Park	52	48	67	42	67	62	70	50	70	61	67	50
C.	**COMMERCIAL ZONE**												
1	Sakchi Market	64	61	74	65	79	66	83	64	72	56	74	61
2	Golmuri Market	65	60	76	53	71	68	76	63	74	50	75	62
3	Burma Mines Market	67	60	71	51	67	61	72	60	70	61	74	63
4	Apna Bazar Bistupur	64	60	69	53	70	59	69	61	76	61	71	62
5	'R' Road Bistupur (Behind Nalanda Hotel)	65	61	72	51	77	66	71	56	70	62	70	58
D)	**INDUSTRIAL ZONE**												
1	EAST SIDE	63	60	68	60	65	62	68	63	71	46	64	59
2	WEST SIDE	66	59	65	42	68	58	66	53	61	51	68	54
3	NORTH	68	58	75	58	70	55	72	59	76	60	73	59
4	SOUTH	59	51	71	54	62	60	65	50	70	46	64	50
5	NORTH EAST	70	69	63	50	74	66	70	65	76	61	70	53
6	NORTH WEST	53	50	62	53	65	54	60	54	65	53	65	54
7	SOUTH EAST	65	59	73	50	66	56	68	51	66	49	63	52
8	SOUTH WEST	69	72	65	44	66	59	67	66	70	60	63	54

Note: Standards applicable as per Noise Pollution (Regulation and Control) (Amendment) Rules, 2000 notified vide S. O. 1046 (E), dated 22-11-2000