



Mahabal Enviro Engineers Pvt. Ltd.

Engineers, Consultants, Environmental Monitoring Laboratory & Contractors

Plot Nos. 13,14,17,18, Grampanchayat Bokhara, 8 km from Nagpur City,

Opp. Patel Petrol Pump, Chhindwara Road, Koradi, Dist.Nagapur-441111

Phone : 91-712-2612162 T/Fax: 91-712-2612212 Email: nagpur@mahabal.com

Stack Emission Monitoring Report

Report No.: ME-NG0657-180702-SA-RIPL-AMRAVATI		Date: 02.07.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901		Order Reference:
			SO No. 3382012035 dtd. 21.09.2015.
Sample Description /Type	Stack Emission Monitoring	Sample Collected by	Laboratory
Sampling Location	Unit No.2	Sample Quantity/Packing	Thimble: 1 X 1 No. SO ₂ : 30 mL X 1No.PVC Bottle NO _x : 25 mL X 1No.PVC Bottle Bladder: 1L X 1 No.
Date of Sampling	22.06.2018	Date of Receipt of Sample	23.06.2018
Sampling Procedure	As per Method Reference		
Date of Start of Analysis	24.06.2018	Date of Completion of Analysis	30.06.2018

Stack No.	Unit No.2			
Stack attached to	ESP of Boiler Unit No.2			
Material of construction	M.S.			
Stack height above ground level (Meter)	275.0			
Stack diameter (Meter)	4.6			
Stack shape at top	Round			
Type of fuel	Coal			
Fuel Consumption (t/h)	117			
ESP Fields (28 No's.)	In Service (28 No's)			
Load at the time of monitoring	196 MW			
Parameter	Unit	Result	Limit as Per Consent	Method Reference
Flue gas Temperature	°C	124	-	IS 11255 (Part 3):2008
Flue gas Velocity	m/s	29.3	-	IS 11255 (Part 3):2008
Total gas quantity	Nm ³ /h	1315168	-	IS 11255 (Part 3):2008
Particulate Matter (PM)	mg/Nm ³	38	50	IS 11255 (Part 1):1985 RA 2003
Sulphur Dioxide (SO ₂)	mg/Nm ³	578	-	IS 11255 (Part 2):1985 RA 2003



Report No.0657 cont...

Parameter	Unit	Result	Limit as Per Consent	Method Reference
Sulphur Dioxide (SO ₂)	kg/day	18244	52230	IS 11255 (Part 2):1985 RA 2003
Oxides of Nitrogen(NO _x)	mg/Nm ³	178	-	IS 11255 (Part 7):2005
Carbon Dioxide (CO ₂)	%	11.8	-	IS 13270:1992, RA 2009
Remarks :				

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FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.


Kishor C. Yeole
BRANCH MANAGER



Note:

1. The result listed refers only to the tested sample(s) and applicable parameter(s).
2. This report is not to be reproduced except in full, without written approval of the laboratory.



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Stack Emission Monitoring Report

Report No.: ME-NG0658-180702-SA-RIPL-AMRAVATI		Date: 02.07.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901		Order Reference:
			SO No. 3382012035 dtd. 21.09.2015.
Sample Description /Type	Stack Emission Monitoring	Sample Collected by	Laboratory
Sampling Location	Unit No.3	Sample Quantity/Packing	Thimble: 1 X 1 No. SO ₂ : 30 mL X 1No.PVC Bottle NO _x : 25 mL X 1No.PVC Bottle Bladder: 1L X 1 No.
Date of Sampling	22.06.2018	Date of Receipt of Sample	23.06.2018
Sampling Procedure	As per Method Reference		
Date of Start of Analysis	25.06.2018	Date of Completion of Analysis	30.06.2018

Stack No.	Unit No.3			
Stack attached to	ESP of Boiler Unit No.3			
Material of construction	M.S.			
Stack height above ground level (Meter)	275.0			
Stack diameter (Meter)	4.6			
Stack shape at top	Round			
Type of fuel	Coal			
Fuel Consumption (t/h)	114			
ESP Fields (28 No's.)	In Service (28 No's)			
Load at the time of monitoring	194 MW			
Parameter	Unit	Result	Limit as Per Consent	Method Reference
Flue gas Temperature	°C	127	-	IS 11255 (Part 3):2008
Flue gas Velocity	m/s	29.0	-	IS 11255 (Part 3):2008
Total gas quantity	Nm ³ /h	1291939	-	IS 11255 (Part 3):2008
Particulate Matter (PM)	mg/Nm ³	36	50	IS 11255 (Part 1):1985 RA 2003
Sulphur Dioxide (SO ₂)	mg/Nm ³	558	-	IS 11255 (Part 2):1985 RA 2003



Report No.0658 cont...

Parameter	Unit	Result	Limit as Per Consent	Method Reference
Sulphur Dioxide (SO ₂)	kg/day	17302	52230	IS 11255 (Part 2):1985 RA 2003
Oxides of Nitrogen(NO _x)	mg/Nm ³	232	-	IS 11255 (Part 7):2005
Carbon Dioxide (CO ₂)	%	12.1	-	IS 13270:1992, RA 2009
Remarks :				

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Stack Emission Monitoring Report

Report No.: ME-NG0503-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901		Order Reference:
			SO No. 3382012035 dtd. 21.09.2015.
Sample Description /Type	Stack Emission Monitoring	Sample Collected by	Laboratory
Sampling Location	Unit No.4	Sample Quantity/Packing	Thimble: 1 X 1 No. SO ₂ : 50 mL X 1No.PVC Bottle NO _x : 25 mL X 1No.PVC Bottle Bladder: 1L X 1 No.
Date of Sampling	08.06.2018	Date of Receipt of Sample	09.06.2018
Sampling Procedure	As per Method Reference		
Date of Start of Analysis	11.06.2018	Date of Completion of Analysis	18.06.2018

Stack No.	Unit No.4			
Stack attached to	ESP of Boiler Unit No.4			
Material of construction	M.S.			
Stack height above ground level (Meter)	275.0			
Stack diameter (Meter)	4.6			
Stack shape at top	Round			
Type of fuel	Coal			
Fuel Consumption (t/h)	135			
ESP Fields (28 No's.)	In Service (28 No's)			
Load at the time of monitoring	270 MW			
Parameter	Unit	Result	Limit as Per Consent	Method Reference
Flue gas Temperature	°C	132	-	IS 11255 (Part 3):2008
Flue gas Velocity	m/s	29.4	-	IS 11255 (Part 3):2008
Total gas quantity	Nm ³ /h	1293589	-	IS 11255 (Part 3):2008
Particulate Matter (PM)	mg/Nm ³	38	50	IS 11255 (Part 1):1985 RA 2003
Sulphur Dioxide (SO ₂)	mg/Nm ³	547	-	IS 11255 (Part 2):1985 RA 2003



Report No.0503 cont...

Parameter	Unit	Result	Limit as Per Consent	Method Reference
Sulphur Dioxide (SO ₂)	kg/day	16982	52230	IS 11255 (Part 2):1985 RA 2003
Oxides of Nitrogen(NO _x)	mg/Nm ³	236	-	IS 11255 (Part 7):2005
Carbon Dioxide (CO ₂)	%	12.1	-	IS 13270:1992, RA 2009
Remarks :				

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FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.


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BRANCH MANAGER



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Stack Emission Monitoring Report

Report No.: ME-NG0504-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901		Order Reference:
			SO No. 3382012035 dtd. 21.09.2015.
Sample Description /Type	Stack Emission Monitoring	Sample Collected by	Laboratory
Sampling Location	Unit No.5	Sample Quantity/Packing	Thimble: 1 X 1 No. SO ₂ : 50 mL X 1No.PVC Bottle NO _x : 25 mL X 1No.PVC Bottle Bladder: 1L X 1 No.
Date of Sampling	08.06.2018	Date of Receipt of Sample	09.06.2018
Sampling Procedure	As per Method Reference		
Date of Start of Analysis	11.06.2018	Date of Completion of Analysis	21.06.2018

Stack No.	Unit No.5			
Stack attached to	ESP of Boiler Unit No.5			
Material of construction	M.S.			
Stack height above ground level (Meter)	275.0			
Stack diameter (Meter)	4.6			
Stack shape at top	Round			
Type of fuel	Coal			
Fuel Consumption (t/h)	136			
ESP Fields (28 No's.)	In Service (28 No's)			
Load at the time of monitoring	270 MW			
Parameter	Unit	Result	Limit as Per Consent	Method Reference
Flue gas Temperature	°C	132	-	IS 11255 (Part 3):2008
Flue gas Velocity	m/s	29.8	-	IS 11255 (Part 3):2008
Total gas quantity	Nm ³ /h	1311189	-	IS 11255 (Part 3):2008
Particulate Matter (PM)	mg/Nm ³	32	50	IS 11255 (Part 1):1985 RA 2003
Sulphur Dioxide (SO ₂)	mg/Nm ³	562	-	IS 11255 (Part 2):1985 RA 2003



Report No.0504 cont...

Parameter	Unit	Result	Limit as Per Consent	Method Reference
Sulphur Dioxide (SO ₂)	kg/day	17685	52230	IS 11255 (Part 2):1985 RA 2003
Oxides of Nitrogen(NO _x)	mg/Nm ³	232	-	IS 11255 (Part 7):2005
Carbon Dioxide (CO ₂)	%	12.3	-	IS 13270:1992, RA 2009
Remarks :				

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FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.


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BRANCH MANAGER



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Ambient Air Quality Monitoring Report

Report No.: ME-NG0505-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901	Order Reference:	
		SO No. 3382012035 dtd. 21.09.2015.	
Sample Description/Type	Ambient Air Quality Monitoring	Sample Collected by	Laboratory
Sampling Location	1) Near Site Office 2) Terrace of WTP Plant Building 3) Terrace of Bachelor Guest House	Sample Quantity/Packing	Filter Paper (PM ₁₀): 3 X 3 No. Filter Paper (PM _{2.5}): 1 X 3 No. SO ₂ : 30mL X18 No. PVC Bottle NO ₂ : 30mL X18 No. PVC Bottle NH ₃ : 30 mL X18 No. PVC Bottle O ₃ : 10 mL X 72 No. PVC Bottle 3 X 12 No. Charcoal Tubes 3 X 3 No. Rubber Bladder
Date of Sampling	08.06.2018 & 09.06.2018	Date of Receipt of Sample	09.06.2018
Sampling Procedure	As per Method reference		
Date of Start of Analysis	11.06.2018	Date of Completion of Analysis	20.06.2018

Meteorological Data/Environmental Conditions					
Avg. Wind Velocity	Prominent Wind Direction	Relative Humidity (%)		Temperature (°C)	
		Max.	Min.	Max.	Min.
2.8 km/h	SE	84	64	38.0	22.0
Location	1) Near Site Office			Duration of Survey : 24 hours	
Parameter	Unit	Result	#NAAQM Standard	Method Reference	
Sulphur Dioxide (SO ₂)	µg/m ³	11.2	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6	
Nitrogen Dioxide (NO ₂)	µg/m ³	13.7	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10	
Particulate Matter (size less than 10µm) or PM ₁₀	µg/m ³	78	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14	
Particulate Matter (size less than 2.5µm) or PM _{2.5}	µg/m ³	38	60	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13,Page No.15-30	
Ozone (O ₃)	µg/m ³	<19.6	180	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13,Page No.31-34	
Lead (as Pb)	µg/m ³	<0.02	1.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55	

Report No.0505 Cont...

Parameter	Unit	Result	#NAAQM Standard	Method Reference
Carbon Monoxide(CO)	mg/m ³	0.72	4.0	IS 5182 (Part 10): 1999 RA 2003
Ammonia (NH ₃)	µg/m ³	28.4	400	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.35-39
Benzene (C ₆ H ₆)	µg/m ³	<1.1	5.0	IS 5182 (Part 11): 2006
Benzo (a) Pyrene (Particulate phase only)	ng/m ³	<0.5	1.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.40-47
Arsenic (as As)	ng/m ³	<0.3	6.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
Nickel (as Ni)	ng/m ³	<3	20.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
Mercury (as Hg)	µg/m ³	<0.06	-	Method of analysis of Hg & MoF Japan
Location	2) Terrace of WTP Plant			Duration of Survey : 24 hours
Sulphur Dioxide (SO ₂)	µg/m ³	9.8	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6
Nitrogen Dioxide (NO ₂)	µg/m ³	11.3	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10
Particulate Matter (size less than 10µm) or PM ₁₀	µg/m ³	76	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14
Particulate Matter (size less than 2.5µm) or PM _{2.5}	µg/m ³	36	60	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.15-30
Ozone (O ₃)	µg/m ³	<19.6	180	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.31-34
Lead (as Pb)	µg/m ³	<0.02	1.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
Carbon Monoxide(CO)	mg/m ³	0.72	4.0	IS 5182 (Part 10): 1999 RA 2003
Ammonia (NH ₃)	µg/m ³	27.1	400	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.35-39
Benzene (C ₆ H ₆)	µg/m ³	<1.1	5.0	IS 5182 (Part 11): 2006
Benzo(a)Pyrene (Particulate phase only)	ng/m ³	<0.5	1.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.40-47
Arsenic (as As)	ng/m ³	<0.3	6.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
Nickel (as Ni)	ng/m ³	<3	20.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55

Report No.0505 Cont...

Parameter	Unit	Result	#NAAQM Standard	Method Reference
Location	2) Terrace of WTP Plant			Duration of Survey : 24 hours
Mercury (as Hg)	µg/m ³	<0.06	-	Method of analysis of Hg & MoF Japan
Parameter	Unit	Result	#NAAQM Standard	Method Reference
Location	3) Terrace of Bachelor Guest House			Duration of Survey : 24 hours
Sulphur Dioxide (SO ₂)	µg/m ³	7.4	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6
Nitrogen Dioxide (NO ₂)	µg/m ³	9.7	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10
Particulate Matter (size less than 10µm) or PM ₁₀	µg/m ³	68	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14
Particulate Matter (size less than 2.5µm) or PM _{2.5}	µg/m ³	34	60	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.15-30
Ozone (O ₃)	µg/m ³	<19.6	180	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.31-34
Lead (as Pb)	µg/m ³	<0.02	1.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
Carbon Monoxide(CO)	mg/m ³	0.70	4.0	IS 5182 (Part 10): 1999 RA 2003
Ammonia (NH ₃)	µg/m ³	25.9	400	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.35-39
Benzene (C ₆ H ₆)	µg/m ³	<1	5.0	IS 5182 (Part 11): 2006
Benzo(a)Pyrene (Particulate phase only)	ng/m ³	<0.5	1.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.40-47
Arsenic (as As)	ng/m ³	<0.3	6.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
Nickel (as Ni)	ng/m ³	<3	20.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
Mercury (as Hg)	µg/m ³	<0.06	-	Method of analysis of Hg & MoF Japan
Remarks: N.D. - Not Detected; TWA - Time Weighted Average., #- NAAQS specified as: 24h. TWA in case of Sulphur Dioxide, Nitrogen Dioxide, PM ₁₀ , PM _{2.5} , Lead and Ammonia; 1h. TWA in case of Carbon Monoxide and Ozone; Annual TWA in case of Benzene, Benzo (a) Pyrene, Arsenic and Nickel.				

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Report No.: ME-NG0660-180702-SA-RIPL-AMRAVATI		Date: 02.07.2018	
Name and address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901		Order Reference:
			SO No. 3382012035 dtd. 21.09.2015.
Sample Description/Type	Ambient Air Quality Monitoring	Sample Collected by	Laboratory
Sampling Location	1) Near Wagholi gate 2) Mr.Rahul Nakade House Village-Dawargaon 3) Ramkirshna Temple, Village-Kapustalani	Sample Quantity/Packing	Filter Paper (PM ₁₀): 3 X 3 No. Filter Paper (PM _{2.5}): 1 X 3 No. SO ₂ : 30mL X18 No. PVC Bottle NO ₂ : 30 mLX18 No. PVC Bottle NH ₃ : 10mL X18 No. PVC Bottle O ₃ : 10 mL X72 No. PVC Bottle 3 X 12 No. Charcoal Tubes 3 X 3 No. Rubber Bladder
Date of Sampling	22.06.2018 & 23.06.2018	Date of Receipt of Sample	23.06.2018
Sampling Procedure	As per Method Reference		
Date of Start of Analysis	25.06.2018	Date of Completion of Analysis	30.06.2018

Meteorological Data/Environmental Conditions					
Avg. Wind Velocity	Prominent Wind Direction	Relative Humidity (%)		Temperature (°C)	
		Max.	Min.	Max.	Min.
2.9 km/h	SE	88	64	38.0	22.0
Location : 1) Near Wagholi gate			Duration of Survey 24 hours		
Parameter	Unit	Result	#NAAQM Standard	Method Reference	
Sulphur Dioxide (SO ₂)	µg/m ³	12.0	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6	
Nitrogen Dioxide (NO ₂)	µg/m ³	13.9	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10	
Particulate Matter (size less than 10µm) or PM ₁₀	µg/m ³	74	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14	
Particulate Matter (size less than 2.5µm) or PM _{2.5}	µg/m ³	38	60	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13,Page No.15-30	
Ozone (O ₃)	µg/m ³	<19.6	180	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13,Page No.31-34	



Report No.0660 cont...

Parameter	Unit	Result	#NAAQM Standard	Method Reference
Lead (as Pb)	µg/m ³	<0.02	180	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
Carbon Monoxide (CO)	mg/m ³	0.72	4.0	IS 5182 (Part 10):1999 RA 2003
Ammonia (NH ₃)	µg/m ³	26.5	400	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.35-39
Benzene (C ₆ H ₆)	ng/m ³	<1.1	5.0	IS 5182 (Part 11): 2006
Benzo(a)Pyrene (Particulate phase only)	µg/m ³	<0.5	1.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.40-47
Arsenic (as As)	ng/m ³	<0.3	6.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
Nickel (as Ni)	ng/m ³	<3	20.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
Mercury (as Hg)	µg/m ³	<0.06	-	Method of analysis of Hg & MoF Japan
Location : 2) Mr.Rahul Nakade House Village-Dawargaon				Duration of Survey 24 hours
Parameter	Unit	Result	#NAAQM Standard	Method Reference
Sulphur Dioxide (SO ₂)	µg/m ³	9.6	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6
Nitrogen Dioxide (NO ₂)	µg/m ³	10.3	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10
Particulate Matter (size less than 10µm) or PM ₁₀	µg/m ³	58	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14
Particulate Matter (size less than 2.5µm) or PM _{2.5}	µg/m ³	34	60	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13,Page No.15-30
Ozone (O ₃)	µg/m ³	<19.6	180	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13,Page No.31-34
Lead (as Pb)	µg/m ³	<0.02	180	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
Carbon Monoxide (CO)	mg/m ³	0.70	4.0	IS 5182 (Part 10):1999 RA 2003
Ammonia (NH ₃)	µg/m ³	25.6	400	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.35-39
Benzene (C ₆ H ₆)	ng/m ³	<1.0	5.0	IS 5182 (Part 11): 2006
Benzo(a)Pyrene (Particulate phase only)	µg/m ³	<0.5	1.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.40-47
Arsenic (as As)	ng/m ³	<0.3	6.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
Nickel (as Ni)	ng/m ³	<3	20.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
Mercury (as Hg)	µg/m ³	<0.06	-	Method of analysis of Hg & MoF Japan

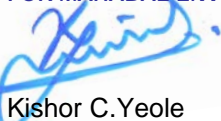


Report No.0660 cont...

Parameter	Unit	Result	#NAAQM Standard	Method Reference
Location : 3) Ramkirshna Temple Vill- Kapustalani			Duration of Survey 24 hours	
Sulphur Dioxide (SO ₂)	µg/m ³	7.8	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.1-6
Nitrogen Dioxide (NO ₂)	µg/m ³	9.2	80	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.7-10
Particulate Matter (size less than 10µm) or PM ₁₀	µg/m ³	70	100	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.11-14
Particulate Matter (size less than 2.5µm) or PM _{2.5}	µg/m ³	38	60	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13,Page No.15-30
Ozone (O ₃)	µg/m ³	<19.6	180	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13,Page No.31-34
Lead (as Pb)	µg/m ³	<0.02	1.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
Carbon Monoxide (CO)	mg/m ³	0.70	4.0	IS 5182 (Part 10):1999 RA 2003
Ammonia (NH ₃)	µg/m ³	26.4	400	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.35-39
Benzene (C ₆ H ₆)	ng/m ³	<1.0	5.0	IS 5182 (Part 11): 2006
Benzo(a)Pyrene (Particulate phase only)	µg/m ³	<0.5	1.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.40-47
Arsenic (as As)	ng/m ³	<0.3	6.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
Nickel (as Ni)	ng/m ³	<3	20.0	CPCB Guidelines for the Measurement of Ambient Air Pollutants, Volume I, 2012-13, Page No.48-55
Mercury (as Hg)	µg/m ³	<0.06	-	Method of analysis of Hg & MoF Japan
Remarks: N.D. - Not Detected; TWA - Time Weighted Average., #- NAAQS specified as: 24h. TWA in case of Sulphur Dioxide, Nitrogen Dioxide, PM ₁₀ , PM _{2.5} , Lead and Ammonia; 1h. TWA in case of Carbon Monoxide and Ozone; Annual TWA in case of Benzene, Benzo (a) Pyrene, Arsenic and Nickel.				

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FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.


Kishor C. Yeole
BRANCH MANAGER

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Opp. Patel Petrol Pump, Chhindwara Road, Koradi, Dist. Nagpur-441111

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Water Sample Analysis Report

Report No.: ME-NG0515-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901	Order Reference:	
		Service Order No. 3382014804 dtd. 19.08.2017	
Sample Description/Type	Surface Water/Grab	Sample Collected by	Laboratory
Sampling Location	Back side of Ash Dyke area well of Mr. Vasant Pachghare	Sample Quantity/Packing	3 L X 1 No. PVC Can 1 L X 1 No. Glass Bottle
Date of Sampling	10.06.2018	Date of Receipt of Sample	10.06.2018
Sampling Procedure	IS: 3025(Part I):1987 RA 2003; APHA 23 rd Ed. 2017, 1060-B, 1-40;		
Date of Start of Analysis	11.06.2018	Date of Completion of Analysis	26.06.2018
Water Level Depth	-		

Sr. No.	Parameter	Unit	Result	Inland Surface water (EPA rule 1986)	Method Reference
1.	Colour	Hazen	<1	-	APHA 23 rd Ed. 2017, 2120-B, 2-6
2.	Odour	-	Agreeable	-	IS 3025 (Part 05):1984, Reaffirmed 2006
3.	Taste	-	Disagreeable	-	IS 3025 (Part 7 & 8):1984, Reaffirmed 2006
4.	Turbidity	NTU	2.8	-	APHA 23 rd Ed. 2017, 2130-B, 2-13
5.	pH	-	7.4	5.5 to 9.0	APHA 23 rd Ed. 2017, 4500-H ⁺ -B, 4-95
6.	Total Dissolved Solids	mg/L	448	-	IS 3025 (Part 16):1984 Reaffirmed 2006, Ed.2.1(1999-12)
7.	Suspended Solids	mg/L	20	100 Max.	APHA 23 rd Ed. 2017, 2540-D, 2-69
8.	Residual Free Chlorine	ppm	N.D.	1.0 Max.	APHA 23 rd Ed. 2017, 4500-Cl G, 4-72
9.	Total Hardness (as CaCO ₃)	mg/L	250	-	APHA 23 rd Ed. 2017, 2340-C, 2-48
10.	Alkalinity Total (as CaCO ₃)	mg/L	188	-	IS 3025 (Part 23):1986 Reaffirmed 2009 Amds 1
11.	Chloride(as Cl)	mg/L	57.3	-	APHA 23 rd Ed. 2017, 4500-Cl-B, 4-75
12.	Sulphate (as SO ₄)	mg/L	20.2	-	APHA 23 rd Ed. 2017, 4500- SO ₄ -E, 4-199



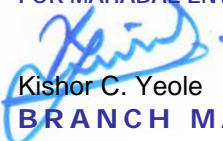
Report No.0515 Cont...

Sr. No.	Parameter	Unit	Result	Inland Surface water (EPA rule 1986)	Method Reference
13.	Nitrate (as NO ₃)	mg/L	30.6	-	APHA 23 rd Ed. 2017, 4500-NO ₃ , E 4-131
15.	Calcium (as Ca)	mg/L	62.8	-	APHA 23 rd Ed. 2017, 3500-Ca-B, 3-69
14.	Magnesium (as Mg)	mg/L	22.7	-	APHA 23 rd Ed. 2017, 3500-Mg- B, 3-86
16.	Fluoride(as F)	mg/L	0.517	2.0 Max.	APHA 23 rd Ed. 2017, 4500-F, D, 4-90
17.	Boron(as B)	mg/L	<0.1	-	APHA 23 rd Ed. 2017, 4500-B B, 4-27
18.	Dissolved Oxygen	mg/L	6.5	-	APHA 23 rd Ed. 2017, 4500-O, B & C, 4-144, 4-146
19.	Oil and Grease	mg/L	N.D.	10 Max.	IS 3025 (Part 39): 1991, Reaffirmed 2009, Amds.1
20.	Iron (as Fe)	mg/L	0.352	3.0 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
21.	Manganese (as Mn)	mg/L	<0.04	2.0 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20 AAS Method
22.	Cadmium (as Cd)	mg/L	N.D.	2.0 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
23.	Copper (as Cu)	mg/L	N.D.	3.0 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
24.	Chromium Hexa (as Cr ⁶⁺)	mg/L	N.D.	0.1 Max.	APHA 23 rd Ed. 2017, 3500- Cr-B, 3-71
25.	Lead (as Pb)	mg/L	<0.1	0.1 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
26.	Zinc (as Zn)	mg/L	0.027	5.0 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
27.	Arsenic (as As)	mg/L	N.D.	0.2 Max.	APHA 23 rd Ed. 2017, 3114-C, 3-40
28.	Mercury (as Hg)	mg/L	N.D.	0.01 Max.	APHA 23 rd Ed. 2017, 3112-B, 3-25
29.	Selenium (as Se)	mg/L	N.D.	0.05 Max.	APHA 23 rd Ed. 2017, 3114-C, 3-40
30.	Aluminium (as Al)	mg/L	0.026	-	APHA 23 rd Ed. 2017, 3500-Al-B, 3-63
31.	Cyanide (as CN)	mg/L	N.D.	0.2 Max.	APHA 23 rd Ed. 2017, 4500-CN, C & E, 4-44 & 4-46
32.	Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	N.D.	1.0 Max.	APHA 23 rd Ed. 2017, 5530- B & C, 5-49, 5-50

Remarks: Limit is EPA Rule 1986 of Schedule VI (rule 3A) of General Standard for Discharge of Environmental Pollutants Part A Effluents Detected.

-END-

FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.


Kishor C. Yeole
BRANCH MANAGER



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Water Sample Analysis Report

Report No.: ME-NG0507-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901	Order Reference:	
		SO No. 3382012035 dtd. 21.09.2015.	
Sample Description/Type	Ground Water/Grab	Sample Collected by	Laboratory
Sampling Location	Well Water of Shri Madhukarrao Dhote field, Village-Kapustalni	Sample Quantity/Packing	3 L X 1 No. PVC Can 1 L X 1 No. Glass Bottle
Date of Sampling	10.06.2018	Date of Receipt of Sample	10.06.2018
Sampling Procedure	IS: 3025(Part I):1987 RA 2003; APHA 23 rd Ed. 2017, 1060-B, 1-40;		
Date of Start of Analysis	11.06.2018	Date of Completion of Analysis	26.06.2018
Water Level Depth	5.28 meter from ground level		

Sr. No.	Parameter	Unit	Result	Acceptable Limit for Drinking water (IS 10500:2012)	Method Reference
1.	Colour	Hazen	<1	5 Max.	APHA 23 rd Ed. 2017, 2120-B, 2-6
2.	Odour	-	Agreeable	Agreeable	IS 3025 (Part 05):1984, Reaffirmed 2006
3.	Taste	-	Agreeable	Agreeable	IS 3025 (Part 7 & 8):1984, Reaffirmed 2006
4.	Turbidity	NTU	0.2	1 Max.	APHA 23 rd Ed. 2017, 2130-B, 2-13
5.	pH	-	7.7	6.5 to 8.5	APHA 23 rd Ed. 2017, 4500-H ⁺ -B, 4-95
6.	Total Dissolved Solids	mg/L	520	500 Max.	IS 3025 (Part 16):1984 Reaffirmed 2006, Ed.2.1(1999-12)
7.	Suspended Solids	mg/L	10	--	APHA 23 rd Ed. 2017, 2540-D, 2-69
8.	Residual Free Chlorine	ppm	<0.05	0.2 Min.	APHA 23 rd Ed. 2017, 4500-Cl G, 4-72
9.	Total Hardness (as CaCO ₃)	mg/L	330	200 Max.	APHA 23 rd Ed. 2017, 2340-C, 2-48
10.	Alkalinity Total (as CaCO ₃)	mg/L	286	200 Max	IS 3025 (Part 23):1986 Reaffirmed 2009 Amds 1
11.	Chloride(as Cl)	mg/L	92.0	250 Max.	APHA 23 rd Ed. 2017, 4500-Cl-B, 4-75



Report No.0507 Cont...

Sr. No.	Parameter	Unit	Result	Acceptable Limit for Drinking water (IS 10500:2012)	Method Reference
12.	Sulphate (as SO ₄)	mg/L	58.7	200 Max	APHA 23 rd Ed. 2017, 4500- SO ₄ -E, 4-199
13.	Nitrate (as NO ₃)	mg/L	40.6	45 Max	APHA 23 rd Ed. 2017, 4500-NO ₃ , E 4-131
14.	Calcium (as Ca)	mg/L	104	75 Max.	APHA 23 rd Ed. 2017, 3500-Ca-B, 3-69
15.	Magnesium (as Mg)	mg/L	17.1	30 Max.	APHA 23 rd Ed. 2017, 3500-Mg- B, 3-86
16.	Fluoride(as F)	mg/L	0.712	1.0 Max.	APHA 23 rd Ed. 2017, 4500-F, D, 4-90
17.	Boron(as B)	mg/L	<0.1	0.5 Max.	APHA 23 rd Ed. 2017, 4500-B B, 4-27
18.	Dissolved Oxygen	mg/L	6.6	--	APHA 23 rd Ed. 2017, 4500-O, B & C, 4-144, 4-146
19.	Oil and Grease	mg/L	N.D.	--	IS 3025 (Part 39): 1991, Reaffirmed 2009, Amds.1
20.	Iron (as Fe)	mg/L	0.39	0.3 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
21.	Manganese (as Mn)	mg/L	<0.04	0.1 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20 AAS Method
22.	Cadmium (as Cd)	mg/L	N.D.	0.003 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
23.	Copper (as Cu)	mg/L	N.D.	0.05 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
24.	Chromium Hexa (as Cr ⁶⁺)	mg/L	N.D.	--	APHA 23 rd Ed. 2017, 3500- Cr-B, 3-71
25.	Lead (as Pb)	mg/L	<0.01	0.01 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
26.	Zinc (as Zn)	mg/L	0.023	5 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
27.	Arsenic (as As)	mg/L	N.D.	0.01 Max.	APHA 23 rd Ed. 2017, 3114-C, 3-40
28.	Mercury (as Hg)	mg/L	N.D.	0.001 Max.	APHA 23 rd Ed. 2017, 3112-B, 3-25
29.	Selenium (as Se)	mg/L	N.D.	0.01 Max.	APHA 23 rd Ed. 2017, 3114-C, 3-40
30.	Aluminium (as Al)	mg/L	<0.020	0.03 Max.	APHA 23 rd Ed. 2017, 3500-Al-B, 3-63
31.	Cyanide (as CN)	mg/L	N.D.	0.05 Max.	APHA 23 rd Ed. 2017, 4500-CN, C & E, 4-44 & 4-46
32.	Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	N.D.	0.001 Max.	APHA 23 rd Ed. 2017, 5530- B & C, 5-49, 5-50
Remarks: N.D. – Not Detected					

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FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.

Kishor C. Yeole

BRANCH MANAGER

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Water Sample Analysis Report

Report No.: ME-NG0511-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901	Order Reference:	
		SO No. 3382012035 dtd. 21.09.2015.	
Sample Description/Type	Ground Water/Grab	Sample Collected by	Laboratory
Sampling Location	Borewell- Gram Panchayat Digargoan	Sample Quantity/Packing	3 L X 1 No. PVC Can 1 L X 1 No. Glass Bottle
Date of Sampling	09.06.2018	Date of Receipt of Sample	10.06.2018
Sampling Procedure	IS: 3025(Part I):1987 RA 2003; APHA 23 rd Ed. 2017, 1060-B, 1-40;		
Date of Start of Analysis	10.06.2018	Date of Completion of Analysis	26.06.2018

Sr. No.	Parameter	Unit	Result	Acceptable Limit for Drinking water (IS 10500:2012)	Method Reference
1.	Colour	Hazen	<1	5 Max.	APHA 23 rd Ed. 2017, 2120-B, 2-6
2.	Odour	-	Agreeable	Agreeable	IS 3025 (Part 05):1984, Reaffirmed 2006
3.	Taste	-	Agreeable	Agreeable	IS 3025 (Part 7 & 8):1984, Reaffirmed 2006
4.	Turbidity	NTU	2.8	1 Max.	APHA 23 rd Ed. 2017, 2130-B, 2-13
5.	pH	-	7.2	6.5 to 8.5	APHA 23 rd Ed. 2017, 4500-H ⁺ -B, 4-95
6.	Total Dissolved Solids	mg/L	844	500 Max.	IS 3025 (Part 16):1984 Reaffirmed 2006, Ed.2.1(1999-12)
7.	Suspended Solids	mg/L	12	--	APHA 23 rd Ed. 2017, 2540-D, 2-69
8.	Residual Free Chlorine	ppm	<0.05	0.2 Min.	APHA 23 rd Ed. 2017, 4500-CI G, 4-72
9.	Total Hardness (as CaCO ₃)	mg/L	510	200 Max.	APHA 23 rd Ed. 2017, 2340-C, 2-48
10.	Alkalinity Total (as CaCO ₃)	mg/L	424	200 Max	IS 3025 (Part 23):1986 Reaffirmed 2009 Amds 1
11.	Chloride(as Cl)	mg/L	108	250 Max.	APHA 23 rd Ed. 2017, 4500-CI-B, 4-75
12.	Sulphate (as SO ₄)	mg/L	56.0	200 Max	APHA 23 rd Ed. 2017, 4500- SO ₄ -E, 4-199



Report No.0511 Cont...

Sr. No.	Parameter	Unit	Result	Acceptable Limit for Drinking water (IS 10500:2012)	Method Reference
13.	Nitrate (as NO ₃)	mg/L	58.9	45 Max	APHA 23 rd Ed. 2017, 4500-NO ₃ , E 4-131
14.	Calcium (as Ca)	mg/L	117	75 Max.	APHA 23 rd Ed. 2017, 3500-Ca-B, 3-69
15.	Magnesium (as Mg)	mg/L	53.0	30 Max.	APHA 23 rd Ed. 2017, 3500-Mg- B, 3-86
16.	Fluoride(as F)	mg/L	0.428	1.0 Max.	APHA 23 rd Ed. 2017, 4500-F, D, 4-90
17.	Boron(as B)	mg/L	<0.1	0.5 Max.	APHA 23 rd Ed. 2017, 4500-B B, 4-27
18.	Dissolved Oxygen	mg/L	6.7	--	APHA 23 rd Ed. 2017, 4500-O, B & C, 4-144, 4-146
19.	Oil and Grease	mg/L	N.D.	--	IS 3025 (Part 39): 1991, Reaffirmed 2009, Amds.1
20.	Iron (as Fe)	mg/L	0.528	0.3 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
21.	Manganese (as Mn)	mg/L	<0.04	0.1 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20 AAS Method
22.	Cadmium (as Cd)	mg/L	N.D.	0.003 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
23.	Copper (as Cu)	mg/L	N.D.	0.05 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
24.	Chromium Hexa (as Cr ⁶⁺)	mg/L	N.D.	--	APHA 23 rd Ed. 2017, 3500- Cr-B, 3-71
25.	Lead (as Pb)	mg/L	<0.01	0.01 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
26.	Zinc (as Zn)	mg/L	0.118	5 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
27.	Arsenic (as As)	mg/L	N.D.	0.01 Max.	APHA 23 rd Ed. 2017, 3114-C, 3-40
28.	Mercury (as Hg)	mg/L	N.D.	0.001 Max.	APHA 23 rd Ed. 2017, 3112-B, 3-25
29.	Selenium (as Se)	mg/L	N.D.	0.01 Max.	APHA 23 rd Ed. 2017, 3114-C, 3-40
30.	Aluminium (as Al)	mg/L	<0.005	0.03 Max.	APHA 23 rd Ed. 2017, 3500-Al-B, 3-63
31.	Cyanide (as CN)	mg/L	N.D.	0.05 Max.	APHA 23 rd Ed. 2017, 4500-CN, C & E, 4-44 & 4-46
32.	Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	N.D.	0.001 Max.	APHA 23 rd Ed. 2017, 5530- B & C, 5-49, 5-50
Remarks: N.D. – Not Detected					

-----END-----

FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.

Kishor C.Yeole

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Water Sample Analysis Report

Report No.: ME-NG0512-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901	Order Reference:	
		SO No. 3382012035 dtd. 21.09.2015.	
Sample Description/Type	Ground Water/Grab	Sample Collected by	Laboratory
Sampling Location	Well Water Gram Panchayat Pimpal Vihargaon	Sample Quantity/Packing	3 L X 1 No. PVC Can 1 L X 1 No. Glass Bottle
Date of Sampling	10.06.2018	Date of Receipt of Sample	10.06.2018
Sampling Procedure	IS: 3025(Part I):1987 RA 2003; APHA 23 rd Ed. 2017, 1060-B, 1-40;		
Date of Start of Analysis	11.06.2018	Date of Completion of Analysis	26.06.2018
Water Level Depth	3.28 meter from ground level		

Sr. No.	Parameter	Unit	Result	Acceptable Limit for Drinking water (IS 10500:2012)	Method Reference
1.	Colour	Hazen	<1	5 Max.	APHA 23 rd Ed. 2017, 2120-B, 2-6
2.	Odour	-	Agreeable	Agreeable	IS 3025 (Part 05):1984, Reaffirmed 2006
3.	Taste	-	Agreeable	Agreeable	IS 3025 (Part 7 & 8):1984, Reaffirmed 2006
4.	Turbidity	NTU	0.4	1 Max.	APHA 23 rd Ed. 2017, 2130-B, 2-13
5.	pH	-	7.6	6.5 to 8.5	APHA 23 rd Ed. 2017, 4500-H ⁺ -B, 4-95
6.	Total Dissolved Solids	mg/L	372	500 Max.	IS 3025 (Part 16):1984 Reaffirmed 2006, Ed.2.1(1999-12)
7.	Suspended Solids	mg/L	<5	-	APHA 23 rd Ed. 2017, 2540-D, 2-69
8.	Residual Free Chlorine	ppm	<0.05	0.2 Min.	APHA 23 rd Ed. 2017, 4500-Cl G, 4-72
9.	Total Hardness (as CaCO ₃)	mg/L	250	200 Max.	APHA 23 rd Ed. 2017, 2340-C, 2-48
10.	Alkalinity Total (as CaCO ₃)	mg/L	212	200 Max	IS 3025 (Part 23):1986 Reaffirmed 2009 Amds 1
11.	Chloride(as Cl)	mg/L	12.2	250 Max.	APHA 23 rd Ed. 2017, 4500-Cl-B, 4-75
12.	Sulphate (as SO ₄)	mg/L	20.8	200 Max	APHA 23 rd Ed. 2017, 4500- SO ₄ -E, 4-199



Report No.0512 Cont...

Sr. No.	Parameter	Unit	Result	Acceptable Limit for Drinking water (IS 10500:2012)	Method Reference
13.	Nitrate (as NO ₃)	mg/L	8.28	45 Max	APHA 23 rd Ed. 2017, 4500-NO ₃ , E 4-131
14.	Calcium (as Ca)	mg/L	68.2	75 Max.	APHA 23 rd Ed. 2017, 3500-Ca-B, 3-69
15.	Magnesium (as Mg)	mg/L	19.5	30 Max.	APHA 23 rd Ed. 2017, 3500-Mg- B, 3-86
16.	Fluoride(as F)	mg/L	0.718	1.0 Max.	APHA 23 rd Ed. 2017, 4500-F, D, 4-90
17.	Boron(as B)	mg/L	<0.1	0.5 Max.	APHA 23 rd Ed. 2017, 4500-B B, 4-27
18.	Dissolved Oxygen	mg/L	6.8	-	APHA 23 rd Ed. 2017, 4500-O, B & C, 4-144, 4-146
19.	Oil and Grease	mg/L	N.D.	-	IS 3025 (Part 39): 1991, Reaffirmed 2009, Amds.1
20.	Iron (as Fe)	mg/L	0.225	0.3 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
21.	Manganese (as Mn)	mg/L	N.D.	0.1 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20 AAS Method
22.	Cadmium (as Cd)	mg/L	N.D.	0.003 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
23.	Copper (as Cu)	mg/L	N.D.	0.05 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
24.	Chromium Hexa (as Cr ⁶⁺)	mg/L	N.D.	-	APHA 23 rd Ed. 2017, 3500- Cr-B, 3-71
25.	Lead (as Pb)	mg/L	N.D.	0.01 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
26.	Zinc (as Zn)	mg/L	0.022	5 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
27.	Arsenic (as As)	mg/L	N.D.	0.01 Max.	APHA 23 rd Ed. 2017, 3114-C, 3-40
28.	Mercury (as Hg)	mg/L	N.D.	0.001 Max.	APHA 23 rd Ed. 2017, 3112-B, 3-25
29.	Selenium (as Se)	mg/L	N.D.	0.01 Max.	APHA 23 rd Ed. 2017, 3114-C, 3-40
30.	Aluminium (as Al)	mg/L	0.003	0.03 Max.	APHA 23 rd Ed. 2017, 3500-Al-B, 3-63
31.	Cyanide (as CN)	mg/L	N.D.	0.05 Max.	APHA 23 rd Ed. 2017, 4500-CN, C & E, 4-44 & 4-46
32.	Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	N.D.	0.001 Max.	APHA 23 rd Ed. 2017, 5530- B & C, 5-49, 5-50

Remarks: N.D. – Not Detected

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FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.

Kishor C.Yeole

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Opp. Patel Petrol Pump, Chhindwara Road, Koradi, Dist.Nagpur-441111

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Water Sample Analysis Report

Report No.: ME-NG0508-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901	Order Reference:	
		SO No. 3382012035 dtd. 21.09.2015.	
Sample Description/Type	Ground Water/Grab	Sample Collected by	Laboratory
Sampling Location	Well Water of Shri Arun Ghathode Vill. Rasalpur	Sample Quantity/Packing	3 L X 1 No. PVC Can 1 L X 1 No. Glass Bottle
Date of Sampling	10.06.2018	Date of Receipt of Sample	10.06.2018
Sampling Procedure	IS: 3025(Part I):1987 RA 2003; APHA 23 rd Ed. 2017, 1060-B, 1-40;		
Date of Start of Analysis	11.06.2018	Date of Completion of Analysis	26.06.2018
Water Level Depth	9.2 meter from ground level		

Sr. No.	Parameter	Unit	Result	Acceptable Limit for Drinking water (IS 10500:2012)	Method Reference
1.	Colour	Hazen	<1.1	5 Max.	APHA 23 rd Ed. 2017, 2120-B, 2-6
2.	Odour	-	Agreeable	Agreeable	IS 3025 (Part 05):1984, Reaffirmed 2006
3.	Taste	-	Agreeable	Agreeable	IS 3025 (Part 7 & 8):1984, Reaffirmed 2006
4.	Turbidity	NTU	0.84	1 Max.	APHA 23 rd Ed. 2017, 2130-B, 2-13
5.	pH	-	7.2	6.5 to 8.5	APHA 23 rd Ed. 2017, 4500-H ⁺ -B, 4-95
6.	Total Dissolved Solids	mg/L	1036	500 Max.	IS 3025 (Part 16):1984 Reaffirmed 2006, Ed.2.1(1999-12)
7.	Suspended Solids	mg/L	<5	--	APHA 23 rd Ed. 2017, 2540-D, 2-69
8.	Residual Free Chlorine	ppm	<0.05	0.2 Min.	APHA 23 rd Ed. 2017, 4500-Cl G, 4-72
9.	Total Hardness (as CaCO ₃)	mg/L	400	200 Max.	APHA 23 rd Ed. 2017, 2340-C, 2-48
10.	Alkalinity Total (as CaCO ₃)	mg/L	346	200 Max	IS 3025 (Part 23):1986 Reaffirmed 2009 Amds 1
11.	Chloride(as Cl)	mg/L	112	250 Max.	APHA 23 rd Ed. 2017, 4500-Cl-B, 4-75
12.	Sulphate (as SO ₄)	mg/L	184	200 Max	APHA 23 rd Ed. 2017, 4500- SO ₄ -E, 4-199



Report No.0508 Cont...

Sr. No.	Parameter	Unit	Result	Acceptable Limit for Drinking water (IS 10500:2012)	Method Reference
13.	Nitrate (as NO ₃)	mg/L	34.6	45 Max	APHA 23 rd Ed. 2017, 4500-NO ₃ , E 4-131
14.	Calcium (as Ca)	mg/L	121	75 Max.	APHA 23 rd Ed. 2017, 3500-Ca-B, 3-69
15.	Magnesium (as Mg)	mg/L	23.8	30 Max.	APHA 23 rd Ed. 2017, 3500-Mg- B, 3-86
16.	Fluoride(as F)	mg/L	0.812	1.0 Max.	APHA 23 rd Ed. 2017, 4500-F, D, 4-90
17.	Boron(as B)	mg/L	<0.1	0.5 Max.	APHA 23 rd Ed. 2017, 4500-B B, 4-27
18.	Dissolved Oxygen	mg/L	6.8	--	APHA 23 rd Ed. 2017, 4500-O, B & C, 4-144, 4-146
19.	Oil and Grease	mg/L	N.D.	--	IS 3025 (Part 39): 1991, Reaffirmed 2009, Amds.1
20.	Iron (as Fe)	mg/L	0.252	0.3 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
21.	Manganese (as Mn)	mg/L	<0.04	0.1 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20 AAS Method
22.	Cadmium (as Cd)	mg/L	N.D.	0.003 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
23.	Copper (as Cu)	mg/L	N.D.	0.05 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
24.	Chromium Hexa (as Cr ⁶⁺)	mg/L	N.D.	--	APHA 23 rd Ed. 2017, 3500- Cr-B, 3-71
25.	Lead (as Pb)	mg/L	<0.01	0.01 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
26.	Zinc (as Zn)	mg/L	0.020	5 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
27.	Arsenic (as As)	mg/L	N.D.	0.01 Max.	APHA 23 rd Ed. 2017, 3114-C, 3-40
28.	Mercury (as Hg)	mg/L	N.D.	0.001 Max.	APHA 23 rd Ed. 2017, 3112-B, 3-25
29.	Selenium (as Se)	mg/L	N.D.	0.01 Max.	APHA 23 rd Ed. 2017, 3114-C, 3-40
30.	Aluminium (as Al)	mg/L	0.020	0.03 Max.	APHA 23 rd Ed. 2017, 3500-Al-B, 3-63
31.	Cyanide (as CN)	mg/L	N.D.	0.05 Max.	APHA 23 rd Ed. 2017, 4500-CN, C & E, 4-44 & 4-46
32.	Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	N.D.	0.001 Max.	APHA 23 rd Ed. 2017, 5530- B & C, 5-49, 5-50
Remarks: N.D. – Not Detected					

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FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.

Kishor C. Yeole

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Water Sample Analysis Report

Report No.: ME-NG0510-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901	Order Reference:	
		SO No. 3382012035 dtd. 21.09.2015.	
Sample Description/Type	Ground Water/Grab	Sample Collected by	Laboratory
Sampling Location	Well Water of Shri Shyamroaji Zode House Village-Talkhanda	Sample Quantity/Packing	3 L X 1 No. PVC Can 1 L X 1 No. Glass Bottle
Date of Sampling	10.06.2018	Date of Receipt of Sample	10.06.2018
Sampling Procedure	IS: 3025(Part I):1987 RA 2003; APHA 23 rd Ed. 2017, 1060-B, 1-40;		
Date of Start of Analysis	11.06.2018	Date of Completion of Analysis	26.06.2018
Water Level Depth	4.58 meter from ground level		

Sr. No.	Parameter	Unit	Result	Acceptable Limit for Drinking water (IS 10500:2012)	Method Reference
1.	Colour	Hazen	<1	5 Max.	APHA 23 rd Ed. 2017, 2120-B, 2-6
2.	Odour	-	Agreeable	Agreeable	IS 3025 (Part 05):1984, Reaffirmed 2006
3.	Taste	-	Agreeable	Agreeable	IS 3025 (Part 7 & 8):1984, Reaffirmed 2006
4.	Turbidity	NTU	1.9	1 Max.	APHA 23 rd Ed. 2017, 2130-B, 2-13
5.	pH	-	7.7	6.5 to 8.5	APHA 23 rd Ed. 2017, 4500-H ⁺ -B, 4-95
6.	Total Dissolved Solids	mg/L	362	500 Max.	IS 3025 (Part 16):1984 Reaffirmed 2006, Ed.2.1(1999-12)
7.	Suspended Solids	mg/L	12	--	APHA 23 rd Ed. 2017, 2540-D, 2-69
8.	Residual Free Chlorine	ppm	<0.05	0.2 Min.	APHA 23 rd Ed. 2017, 4500-Cl G, 4-72
9.	Total Hardness (as CaCO ₃)	mg/L	250	200 Max.	APHA 23 rd Ed. 2017, 2340-C, 2-48
10.	Alkalinity Total (as CaCO ₃)	mg/L	214	200 Max	IS 3025 (Part 23):1986 Reaffirmed 2009 Amds 1
11.	Chloride(as Cl)	mg/L	34.7	250 Max.	APHA 23 rd Ed. 2017, 4500-Cl-B, 4-75



Report No.0510 Cont...

Sr. No.	Parameter	Unit	Result	Acceptable Limit for Drinking water (IS 10500:2012)	Method Reference
12.	Sulphate (as SO ₄)	mg/L	49.8	200 Max	APHA 23 rd Ed. 2017, 4500- SO ₄ -E, 4-199
13.	Nitrate (as NO ₃)	mg/L	0.612	45 Max	APHA 23 rd Ed. 2017, 4500-NO ₃ , E 4-131
14.	Calcium (as Ca)	mg/L	39.3	75 Max.	APHA 23 rd Ed. 2017, 3500-Ca-B, 3-69
15.	Magnesium (as Mg)	mg/L	36.9	30 Max.	APHA 23 rd Ed. 2017, 3500-Mg- B, 3-86
16.	Fluoride(as F)	mg/L	0.578	1.0 Max.	APHA 23 rd Ed. 2017, 4500-F, D, 4-90
17.	Boron(as B)	mg/L	<0.1	0.5 Max.	APHA 23 rd Ed. 2017, 4500-B B, 4-27
18.	Dissolved Oxygen	mg/L	6.6	--	APHA 23 rd Ed. 2017, 4500-O, B & C, 4-144, 4-146
19.	Oil and Grease	mg/L	N.D.	--	IS 3025 (Part 39): 1991, Reaffirmed 2009, Amds.1
20.	Iron (as Fe)	mg/L	0.442	0.3 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
21.	Manganese (as Mn)	mg/L	<0.04	0.1 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20 AAS Method
22.	Cadmium (as Cd)	mg/L	N.D.	0.003 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
23.	Copper (as Cu)	mg/L	N.D.	0.05 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
24.	Chromium Hexa (as Cr ⁶⁺)	mg/L	N.D.	--	APHA 23 rd Ed. 2017, 3500- Cr-B, 3-71
25.	Lead (as Pb)	mg/L	<0.01	0.01 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
26.	Zinc (as Zn)	mg/L	0.017	5 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
27.	Arsenic (as As)	mg/L	N.D.	0.01 Max.	APHA 23 rd Ed. 2017, 3114-C, 3-40
28.	Mercury (as Hg)	mg/L	N.D.	0.001 Max.	APHA 23 rd Ed. 2017, 3112-B, 3-25
29.	Selenium (as Se)	mg/L	N.D.	0.01 Max.	APHA 23 rd Ed. 2017, 3114-C, 3-40
30.	Aluminium (as Al)	mg/L	<0.012	0.03 Max.	APHA 23 rd Ed. 2017, 3500-Al-B, 3-63
31.	Cyanide (as CN)	mg/L	N.D.	0.05 Max.	APHA 23 rd Ed. 2017, 4500-CN, C & E, 4-44 & 4-46
32.	Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	N.D.	0.001 Max.	APHA 23 rd Ed. 2017, 5530- B & C, 5-49, 5-50
Remarks: N.D. – Not Detected					

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FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.


Kishor C. Yeole
BRANCH MANAGER



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Water Sample Analysis Report

Report No.: ME-NG0509-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901	Order Reference:	
		SO No. 3382012035 dtd. 21.09.2015.	
Sample Description/Type	Ground Water/Grab	Sample Collected by	Laboratory
Sampling Location	Dugwell of Field of Mr. Bhaskar Harde Wagholi Village	Sample Quantity/Packing	3 L X 1 No. PVC Can 1 L X 1 No. Glass Bottle
Date of Sampling	10.06.2018	Date of Receipt of Sample	10.06.2018
Sampling Procedure	IS: 3025(Part I):1987 RA 2003; APHA 23 rd Ed. 2017, 1060-B, 1-40;		
Date of Start of Analysis	11.06.2018	Date of Completion of Analysis	26.06.2018

Sr. No.	Parameter	Unit	Result	Acceptable Limit for Drinking water (IS 10500:2012)	Method Reference
1.	Colour	Hazen	<1	5 Max.	APHA 23 rd Ed. 2017, 2120-B, 2-6
2.	Odour	-	Agreeable	Agreeable	IS 3025 (Part 05):1984, Reaffirmed 2006
3.	Taste	-	Agreeable	Agreeable	IS 3025 (Part 7 & 8):1984, Reaffirmed 2006
4.	Turbidity	NTU	2.9	1 Max.	APHA 23 rd Ed. 2017, 2130-B, 2-13
5.	pH	-	7.3	6.5 to 8.5	APHA 23 rd Ed. 2017, 4500-H ⁺ -B, 4-95
6.	Total Dissolved Solids	mg/L	526	500 Max.	IS 3025 (Part 16):1984 Reaffirmed 2006, Ed.2.1(1999-12)
7.	Suspended Solids	mg/L	15	--	APHA 23 rd Ed. 2017, 2540-D, 2-69
8.	Residual Free Chlorine	ppm	<0.05	0.2 Min.	APHA 23 rd Ed. 2017, 4500-CI G, 4-72
9.	Total Hardness (as CaCO ₃)	mg/L	350	200 Max.	APHA 23 rd Ed. 2017, 2340-C, 2-48
10.	Alkalinity Total (as CaCO ₃)	mg/L	128	200 Max	IS 3025 (Part 23):1986 Reaffirmed 2009 Amds 1
11.	Chloride(as Cl)	mg/L	63.1	250 Max.	APHA 23 rd Ed. 2017, 4500-CI-B, 4-75
12.	Sulphate (as SO ₄)	mg/L	117	200 Max	APHA 23 rd Ed. 2017, 4500- SO ₄ -E, 4-199



Report No.0509Cont...

Sr. No.	Parameter	Unit	Result	Acceptable Limit for Drinking water (IS 10500:2012)	Method Reference
13.	Nitrate (as NO ₃)	mg/L	12.6	45 Max	APHA 23 rd Ed. 2017, 4500-NO ₃ , E 4-131
14.	Calcium (as Ca)	mg/L	94.2	75 Max.	APHA 23 rd Ed. 2017, 3500-Ca-B, 3-69
15.	Magnesium (as Mg)	mg/L	27.9	30 Max.	APHA 23 rd Ed. 2017, 3500-Mg- B, 3-86
16.	Fluoride(as F)	mg/L	0.512	1.0 Max.	APHA 23 rd Ed. 2017, 4500-F, D, 4-90
17.	Boron(as B)	mg/L	<0.1	0.5 Max.	APHA 23 rd Ed. 2017, 4500-B B, 4-27
18.	Dissolved Oxygen	mg/L	6.6	--	APHA 23 rd Ed. 2017, 4500-O, B & C, 4-144, 4-146
19.	Oil and Grease	mg/L	N.D.	--	IS 3025 (Part 39): 1991, Reaffirmed 2009, Amds.1
20.	Iron (as Fe)`	mg/L	0.278	0.3 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
21.	Manganese (as Mn)	mg/L	<0.04	0.1 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20 AAS Method
22.	Cadmium (as Cd)	mg/L	N.D.	0.003 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
23.	Copper (as Cu)	mg/L	N.D.	0.05 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
24.	Chromium Hexa (as Cr ⁶⁺)	mg/L	N.D.	--	APHA 23 rd Ed. 2017, 3500- Cr-B, 3-71
25.	Lead (as Pb)	mg/L	<0.01	0.01 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
26.	Zinc (as Zn)	mg/L	0.023	5 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
27.	Arsenic (as As)	mg/L	N.D.	0.01 Max.	APHA 23 rd Ed. 2017, 3114-C, 3-40
28.	Mercury (as Hg)	mg/L	N.D.	0.001 Max.	APHA 23 rd Ed. 2017, 3112-B, 3-25
29.	Selenium (as Se)	mg/L	N.D.	0.01 Max.	APHA 23 rd Ed. 2017, 3114-C, 3-40
30.	Aluminium (as Al)	mg/L	<0.02	0.03 Max.	APHA 23 rd Ed. 2017, 3500-Al-B, 3-63
31.	Cyanide (as CN)	mg/L	N.D.	0.05 Max.	APHA 23 rd Ed. 2017, 4500-CN, C & E, 4-44 & 4-46
32.	Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	N.D.	0.001 Max.	APHA 23 rd Ed. 2017, 5530- B & C, 5-49, 5-50

Remarks: N.D. – Not Detected

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FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.

Kishor C.Yeole

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Water Sample Analysis Report

Report No.: ME-NG0513-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901		Order Reference:
			SO No. 3382012035 dtd. 21.09.2015.
Sample Description/Type	Surface water/Grab	Sample Collected by	Laboratory
Sampling Location	Malegaon Pond	Sample Quantity/Packing	3 L X 1 No. PVC Can 1 L X 1 No. Glass Bottle
Date of Sampling	09.06.2018	Date of Receipt of Sample	09.06.2018
Sampling Procedure	IS:3025(Part I):1987 RA 2003; APHA 23 rd Ed. 2017, 1060-B, 1-40;		
Date of Start of Analysis	11.06.2018	Date of Completion of Analysis	26.06.2018

Sr. No.	Parameter	Unit	Result	Method Reference
1	Colour	Hazen	<1	APHA 23 rd Ed. 2017, 2120-B, 2-6
2	Odour	-	Disagreeable	IS 3025 (Part 05):1984, Reaffirmed 2006
3	Taste	-	NA	IS 3025 (Part 7 & 8):1984, Reaffirmed 2006
4	Turbidity	NTU	18	APHA 23 rd Ed. 2017, 2130-B, 2-13
5	pH	-	8.1	APHA 23 rd Ed. 2017, 4500-H ⁺ -B, 4-95
6	Total Dissolved Solids	mg/L	264	IS 3025 (Part 16):1984 Reaffirmed 2006, Ed.2.1(1999-12)
7	Total Suspended Solids	mg/L	94	APHA 23 rd Ed. 2017, 2540-D, 2-69
8	Free Chlorine (Residual)	mg/L	<0.05	APHA 23 rd Ed. 2017, 4500-Cl G, 4-72
9	Total Hardness (as CaCO ₃)	mg/L	140	APHA 23 rd Ed. 2017, 2340-C, 2-48
10	Alkalinity Total (as CaCO ₃)	mg/L	128	IS 3025 (Part 23):1986 Reaffirmed 2009 Amds 1
11	Chloride (as Cl)	mg/L	32.4	APHA 23 rd Ed. 2017, 4500-Cl-B, 4-75
12	Sulphate (as SO ₄)	mg/L	37.2	APHA 23 rd Ed. 2017, 4500- SO ₄ -E, 4-199
13	Nitrate (as NO ₃)	mg/L	0.748	APHA 23 rd Ed. 2017, 4500-NO ₃ , E 4-131



Report No.0513 cont.

Sr. No.	Parameter	Unit	Result	Method Reference
14	Calcium(as Ca)	mg/L	38.4	APHA 23 rd Ed. 2017, 3500-Ca-B, 3-69
15	Magnesium (as Mg)	mg/L	10.8	APHA 23 rd Ed. 2017, 3500-Mg- B, 3-86
16	Fluoride(as F)	mg/L	0.474	APHA 23 rd Ed. 2017, 4500-F, D, 4-90
17	Boron(as B)	mg/L	<0.1	APHA 23 rd Ed. 2017, 4500-B B, 4-27
18	Dissolved Oxygen	mg/L	6.5	APHA 23 rd Ed. 2017, 4500-O, B & C, 4-144, 4-146
19	Oil and Grease	mg/L	N.D.	IS 3025 (Part 39): 1991, Reaffirmed 2009, Amds.1
20	Iron (as Fe)	mg/L	0.785	APHA 23 rd Ed. 2017, 3111-B, 3-20
21	Manganese (as Mn)	mg/L	0.15	APHA 23 rd Ed. 2017, 3111-B, 3-20 AAS Method
22	Cadmium (as Cd)	mg/L	0.016	APHA 23 rd Ed. 2017, 3111-B, 3-20
23	Copper (as Cu)	mg/L	0.005	APHA 23 rd Ed. 2017, 3111-B, 3-20
24	Chromium Hexa (as Cr ⁶⁺)	mg/L	0.008	APHA 23 rd Ed. 2017, 3500- Cr-B, 3-71
25	Lead (as Pb)	mg/L	N.D.	APHA 23 rd Ed. 2017, 3111-B, 3-20
26	Zinc (as Zn)	mg/L	0.015	APHA 23 rd Ed. 2017, 3111-B, 3-20
27	Arsenic (as As)	mg/L	N.D.	APHA 23 rd Ed. 2017, 3114-C, 3-40
28	Mercury (as Hg)	mg/L	N.D.	APHA 23 rd Ed. 2017, 3112-B, 3-25
29	Selenium (as Se)	mg/L	N.D.	APHA 23 rd Ed. 2017, 3114-C, 3-40
30	Aluminium (as Al)	mg/L	0.003	APHA 23 rd Ed. 2017, 3500-Al-B, 3-63
31	Cyanide (as CN)	mg/L	N.D.	APHA 23 rd Ed. 2017, 4500-CN, C & E, 4-44 & 4-46
32	Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	N.D.	APHA 23 rd Ed. 2017, 5530- B & C, 5-49, 5-50
Remarks: N.D. – Not Detected,				

-----END-----

FOR MAHABAL ENVIRO ENGINEERS PVT. LTD.


Kishor C. Yeole
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Water Sample Analysis Report

Report No.: ME-NG0514-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901	Order Reference:	
		SO No. 3382012035 dtd. 21.09.2015.	
Sample Description/Type	Surface water/Grab	Sample Collected by	Laboratory
Sampling Location	Wagholi Pond	Sample Quantity/Packing	3 L X 1 No. PVC Can 1 L X 1 No. Glass Bottle
Date of Sampling	09.06.2018	Date of Receipt of Sample	09.06.2018
Sampling Procedure	IS: 3025(Part I):1987 RA 2003; APHA 23 rd Ed. 2017, 1060-B, 1-40;		
Date of Start of Analysis	11.06.2018	Date of Completion of Analysis	26.06.2018

Sr. No.	Parameter	Unit	Result	Method Reference
1	Colour	Hazen	2	APHA 23 rd Ed. 2017, 2120-B, 2-6
2	Odour	-	Disagreeable	IS 3025 (Part 05):1984, Reaffirmed 2006
3	Taste	-	NA	IS 3025 (Part 7 & 8):1984, Reaffirmed 2006
4	Turbidity	NTU	2.8	APHA 23 rd Ed. 2017, 2130-B, 2-13
5	pH	-	7.4	APHA 23 rd Ed. 2017, 4500-H ⁺ -B, 4-95
6	Total Dissolved Solids	mg/L	663	IS 3025 (Part 16):1984 Reaffirmed 2006, Ed.2.1(1999-12)
7	Total Suspended Solids	mg/L	15	APHA 23 rd Ed. 2017, 2540-D, 2-69
8	Free Chlorine (Residual)	mg/L	0.058	APHA 23 rd Ed. 2017, 4500-Cl G, 4-72
9	Total Hardness (as CaCO ₃)	mg/L	350	APHA 23 rd Ed. 2017, 2340-C, 2-48
10	Alkalinity Total (as CaCO ₃)	mg/L	174	IS 3025 (Part 23):1986 Reaffirmed 2009 Amds 1
11	Chloride (as Cl)	mg/L	79.5	APHA 23 rd Ed. 2017, 4500-Cl-B, 4-75
12	Sulphate (as SO ₄)	mg/L	17.2	APHA 23 rd Ed. 2017, 4500- SO ₄ -E, 4-199
13	Nitrate (as NO ₃)	mg/L	1.28	APHA 23 rd Ed. 2017, 4500-NO ₃ , E 4-131



Report No.0514 cont.

Sr. No.	Parameter	Unit	Result	Method Reference
14	Calcium (as Ca)	mg/L	88.1	APHA 23 rd Ed. 2017, 3500-Ca-B, 3-69
15	Magnesium (as Mg)	mg/L	31.6	APHA 23 rd Ed. 2017, 3500-Mg- B, 3-86
16	Fluoride(as F)	mg/L	0.728	APHA 23 rd Ed. 2017, 4500-F, D, 4-90
17	Boron(as B)	mg/L	<0.1	APHA 23 rd Ed. 2017, 4500-B B, 4-27
18	Dissolved Oxygen	mg/L	6.5	APHA 23 rd Ed. 2017, 4500-O, B & C, 4-144, 4-146
19	Oil and Grease	mg/L	N.D.	IS 3025 (Part 39): 1991, Reaffirmed 2009, Amds.1
20	Iron (as Fe)	mg/L	0.528	APHA 23 rd Ed. 2017, 3111-B, 3-20
21	Manganese (as Mn)	mg/L	<0.04	APHA 23 rd Ed. 2017, 3111-B, 3-20 AAS Method
22	Cadmium (as Cd)	mg/L	N.D.	APHA 23 rd Ed. 2017, 3111-B, 3-20
23	Copper (as Cu)	mg/L	N.D.	APHA 23 rd Ed. 2017, 3111-B, 3-20
24	Chromium Hexa (as Cr ⁶⁺)	mg/L	0.018	APHA 23 rd Ed. 2017, 3500- Cr-B, 3-71
25	Lead (as Pb)	mg/L	<0.1	APHA 23 rd Ed. 2017, 3111-B, 3-20
26	Zinc (as Zn)	mg/L	0.013	APHA 23 rd Ed. 2017, 3111-B, 3-20
27	Arsenic (as As)	mg/L	N.D.	APHA 23 rd Ed. 2017, 3114-C, 3-40
28	Mercury (as Hg)	mg/L	N.D.	APHA 23 rd Ed. 2017, 3112-B, 3-25
29	Selenium (as Se)	mg/L	N.D.	APHA 23 rd Ed. 2017, 3114-C, 3-40
30	Aluminium (as Al)	mg/L	<0.004	APHA 23 rd Ed. 2017, 3500-Al-B, 3-63
31	Cyanide (as CN)	mg/L	N.D.	APHA 23 rd Ed. 2017, 4500-CN, C & E, 4-44 & 4-46
32	Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	N.D.	APHA 23 rd Ed. 2017, 5530- B & C, 5-49, 5-50
Remarks: N.D. – Not Detected,				

-----END-----

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Effluent Sample Analysis Report

Report No.: ME-NG526-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901	Order Reference:	
		SO No. 3382012035 dtd. 21.09.2015.	
Sample Description/Type	Industrial Effluent	Sample Collected by	Laboratory
Sampling Location	Boiler Blow down	Sample Quantity/Packing	2L X 1 No. PVC Can 1L X 1 No. Glass Bottle
Date of Sampling	10.06.2018	Date of Receipt of Sample	10.06.2018
Sampling Procedure	IS 3025 (Part-I):1987, RA 2003 and APHA 23 rd Ed. 2017, 1060-B, 1-40		
Date of Start of Analysis	11.06.2018	Date of Completion of Analysis	18.06.2018

Sr. No.	Parameter	Unit	Result	Limit as per Consent	Method Reference
1	Suspended Solids	mg/L	<5	100 Max.	APHA 23 rd Ed. 2017, 2540-D, 2-69
2	Copper total (as Cu)	mg/L	N.D.	1.0 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
3	Iron total (as Fe)	mg/L	0.128	1.0 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
4	Oil & Grease	mg/L	N.D.	10 Max.	IS 3025 (Part 39): 1991, Reaffirmed 2009, Amds.1

Remarks: N.D. – Not Detected

-----END-----

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Effluent Sample Analysis Report

Report No.: ME-NG0527-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901.	Order Reference:	
		SO No. 3382012035 dtd. 21.09.2015.	
Sample Description/Type	Industrial Effluent	Sample Collected by	Laboratory
Sampling Location	Condensers Cooling Water Discharge	Sample Quantity/Packing	2 L X 1 No. PVC Can
Date of Sampling	10.06.2018	Date of Receipt of Sample	10.06.2018
Sampling Procedure	IS 3025 (Part-I):1987, RA 2003 and APHA 23 rd Ed. 2017, 1060-B, 1-40		
Date of Start of Analysis	11.06.2018	Date of Completion of Analysis	11.06.2018

Sr. No.	Parameter	Unit	Result	Limit as per Consent	Method Reference
1	pH	-	7.5	6.5 to 8.5	APHA 23 rd Ed. 2017, 4500-H ⁺ -B, 4-95
2	Temperature	°C	38	Not to exceed 5°C higher than the intake water temp.	APHA 23 rd Ed. 2017, 2550-B, 2-74
3	Free Available Chlorine	mg/L	<0.05	0.5 Max.	APHA 23 rd Ed. 2017, 4500-Cl G, 4-72

Remarks: Temp. & Free Available Chlorine recorded at the time of sampling.

-----END-----

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Effluent Sample Analysis Report

Report No.: ME-NG0528-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901.	Order Reference:	
		SO No. 3382012035 dtd. 21.09.2015.	
Sample Description/Type	Industrial Effluent	Sample Collected by	Laboratory
Sampling Location	Cooling Tower - Blow Down	Sample Quantity/Packing	2 L X 1 No. PVC Can
Date of Sampling	10.06.2018	Date of Receipt of Sample	10.06.2018
Sampling Procedure	IS 3025 (Part-I):1987, RA 2003 and APHA 23 rd Ed. 2017, 1060-B, 1-40		
Date of Start of Analysis	11.06.2018	Date of Completion of Analysis	16.06.2018

Sr. No.	Parameter	Unit	Result	Limit as per Consent	Method Reference
1	Total Free Chlorine (Residual)	mg/L	<0.05	0.5 Max.	APHA 23 rd Ed. 2017, 4500-Cl G, 4-72
2	Phosphate Total (as PO ₄)	mg/L	1.48	5.0 Max.	APHA 23 rd Ed. 2017, 4500-P B, 4-160, E, 4-164
3	Chromium Total (as Cr)	mg/L	<0.1	0.2 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20
4	Zinc (as Zn)	mg/L	0.023	1.0 Max.	APHA 23 rd Ed. 2017, 3111-B, 3-20

Remarks: Free Available Chlorine tested on field.

-----END-----

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Effluent Sample Analysis Report

Report No.: ME-NG0529-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901	Order Reference:	
		SO No. 3382012035 dtd. 21.09.2015.	
Sample Description/Type	Industrial Effluent	Sample Collected by	Laboratory
Sampling Location	DM Plant Effluent (N-Pit)	Sample Quantity/Packing	2 L X 1 No. PVC Can 1 L X 1 No. Glass Bottle
Date of Sampling	10.06.2018	Date of Receipt of Sample	10.06.2018
Sampling Procedure	IS 3025 (Part-I):1987, RA 2003 and APHA 23 rd Ed. 2017, 1060-B, 1-40		
Date of Start of Analysis	11.06.2018	Date of Completion of Analysis	20.06.2018

Sr. No.	Parameter	Unit	Result	Limit as per Consent	Method Reference
1	pH	-	7.7	5.5 to 9.0	APHA 23 rd Ed. 2017, 4500-H ⁺ -B, 4-95
2	Total Dissolved Solids (TDS)	mg/L	538	2100 Max.	IS 3025 (Part 16):1984 Reaffirmed 2006, Ed.2.1(1999-12)
3	Suspended Solids	mg/L	<5	100 Max.	APHA 23 rd Ed. 2017, 2540-D, 2-69
4	Biochemical Oxygen Demand (BOD at 3 days at 27°C)	mg/L	18	30 Max.	IS 3025 (Part 44): 1993, Reaffirmed 2009
5	Chemical Oxygen Demand (COD)	mg/L	56	250 Max.	APHA 23 rd Ed. 2017, 5220-B, 5-18
6	Oil & Grease	mg/L	N.D.	10 Max.	IS 3025 (Part 39): 1991, Reaffirmed 2009, Amds.1

Remarks: N. D. - Not Detected

-----END-----

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Page 1 of 1

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Phone: 2582 0658/ 3139/ 1663/ 3154 Fax: 91-22-25823543 thane@mahabal.com



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Noise Level Monitoring Report

Report No.: ME-NG0506-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901	Order Reference:	
		SO No. 3382012035 dtd. 21.09.2015.	
Sample Description/Type	Noise Level Monitoring	Sample Collected by	Laboratory
Date of Sampling	10.06.2018		
Sampling Procedure	Instrument Catalogue & User manual		

Location	Unit	Result		Norms as per factory Act.	
		Min.	Max.	Maximum Exposure duration per Day	Limit
Green Point gate	dB(A)	68.2	72.4	8 h	90 Max.
Wagholi gate	dB(A)	77.4	81.2		
Near Material gate	dB(A)	72.2	77.6		
Near Labour Colony	dB(A)	65.6	68.2		
Near Bachelor Colony Building	dB(A)	63.2	68.5		

Remark: : Limit from The Factories Act, 1948, The Maharashtra Factory Rules, 1963, Schedule XXIV Page No. 283-284

-----END-----

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Effluent Sample Analysis Report

Report No. : ME-NG0530-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901	Order Reference:	
		3382012035 Dt.21.09.2015	
Sample Description/Type	Industrial Effluent	Sample Collected by	Laboratory
Sampling Location	Plant STP Outlet	Sample Quantity/Packing	2 L X 1 No. PVC Can 100mL X 1 No. PVC Can
Date of Sampling	10.06.2018	Date of Receipt of Sample	10.06.2018
Sampling Procedure	IS:3025(Part I): 1987 RA2003, APHA 23 rd Ed. 2017, 1060-B, 1-40		
Date of Start of Analysis	11.06.2018	Date of Completion of Analysis	18.06.2018

Sr. No.	Parameter	Unit	Result	Limit as per MPCB Consent	Method Reference
1	Biochemical Oxygen Demand (3 days 27°C)	mg/L	9.0	30 Max.	IS 3025 (Part 44): 1993, Reaffirmed 2009
2	Chemical Oxygen Demand	mg/L	28	100 Max.	APHA 23 rd Ed. 2017, 5220-B, 5-18

Remarks:

END

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Effluent Sample Analysis Report

Report No. : ME-NG0531-180630-SA-RIPL-AMRAVATI		Date: 30.06.2018	
Name and Address of Customer	RATTANINDIA POWER LIMITED Plot No.D-2 & D-2 (PART) at Additional MIDC, Village-Nandgaonpeth, Tal & Dist: Amravati 444 901	Order Reference:	
		3382012035 Dt.21.09.2015	
Sample Description/Type	Domestic Effluent	Sample Collected by	Laboratory
Sampling Location	Colony STP-Outlet	Sample Quantity/Packing	2 L X 1 No. PVC Can 100mL X 1 No. PVC Can
Date of Sampling	10.06.2018	Date of Receipt of Sample	10.06.2018
Sampling Procedure	IS:3025(Part I): 1987 RA2003, APHA 23 rd Ed. 2017, 1060-B, 1-40		
Date of Start of Analysis	11.06.2018	Date of Completion of Analysis	18.06.2018

Sr. No.	Parameter	Unit	Result	Limit as per MPCB Consent	Method Reference
1	Biochemical Oxygen Demand (3 days 27°C)	mg/L	14	30 Max.	IS 3025 (Part 44): 1993, Reaffirmed 2009
2	Chemical Oxygen Demand	mg/L	44	100 Max.	APHA 23 rd Ed. 2017, 5220-B, 5-18

Remarks:

END

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