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Ref: GVPGL-RJY/O&M/17/93

Date: 05/09/2017

The Regional Environmental Engineer
Andhra Pradesh Pollution Control Board,
2-532, Shanthinagar,
Opp. DIC office, Ramanayyapeta,
Kakinada- 533 005

Sub: Submission of Environmental Audit report (Form-V) for 2016-2017

Dear Sir,

We are here with submitting Environmental Audit Report (Form-V) for 2016-2017. Kindly acknowledge.

Thanking you,

Yours faithfully,

For GMR Vemagiri Power Generation Limited



Mathews.P
Plant Head

Encl: As above cc: APPCB- Hyderabad; MOEF- Chennai.

**ENVIRONMENTAL STATEMENT
(FORM-V)**

05th September 2017

**GMR Vemagiri Power Generation Limited
Vemagiri Village
Kadiyam Mandal
East Godavari District
Andhra Pradesh.**

Form - V
(See rule 14)

As per Rule -14 of Environmental [Protection] Rules, 1986 and amendments there of

Environmental Audit report for the financial year ending the 31st March-2017

PART - A

i)	Name and address of the owner/occupier of the industry, operation or process	A.SAHA GMR Vemagiri Power Génération Limited, Vemagiri Village, Kadium Mandal, East Godavari District, Andhra Pradesh-533125. Phone No : 0883-2452313-316 Fax No : 0883-2452312
ii)	Industry category Primary: (STC Code) Secondary: (STC Code)	-----
iii)	Production Capacity units	388.5 MW
iv)	Year of Establishment	Commercial operation date :16 th Sep2006
v)	Date of the last environmental audit report submitted	September, 2016

PART – B

a) Water consumption			
Purpose of water consumption		Water consumption per day [m³/day]	
		During the previous financial year 2015-16	During the current financial year 2016- 2017
i)	DM plant	32.23	13.03
ii)	Cooling	2634	1134
iii)	Domestic	12.78	10.05
iv)	Gardening	0	0
v)	PLF %	10.44	9.14
Name of the Product		Water consumption per unit of product [m3/kWh]	
		During the previous financial year 2015-2016	During the current financial year 2016- 2017
Electrical Power		0.001612	0.001347
b) Raw material consumption			
Name of raw material	Name of products	Consumption of raw material per unit of energy output (Power – Sm3/ kWh)	
		During the previous financial year 2015-2016	During the current financial year 2016- 2017
Natural gas	Electrical Power	0.18841	0.18224

Note: Consumption of water during the year 2016-17 is given in Annexure – I
 Details of consumption of natural gas and power generation are given in Annexure – II.

PART – C

Pollution Generated
(Parameters as specified in the consent issued)

Pollutants	Quantity of pollutants discharged (mass/Day)	Concentration of pollutants discharged (mass/volume)	Percentage of variation from prescribed standards with reasons
a) Total <u>27.3</u> M³/Day of water is generated from ETP.			
1. pH	7.13		Nil
2. TSS	0.471 kg/day	17.24 mg/l	
3. Iron as Fe	0.008 kg/day	0.31 mg/l	
4. Phosphates	0.010 kg/day	0.39 mg/l	
5. Oil & Grease	BDL kg/day	BDL mg/l	
Note : 1) Treated effluent analysis statement for the year 2016-17 is given in Annexure – III. 2) Treated effluent quantity statement for the year 2016-17 is given in Annexure – IV.			
b) Stack gas emissions			
1	Stack – I	Oxides of Nitrogen(PPM)	5.70
		Particulate Matter(mg/Nm ³)	2.44
Note: Stack gas emission statement for the year 2016-17 is given in Annexure – V			
c) Ambient Air Quality (AAQ)			
Note: Ambient Air Quality Monitoring Statement for the year 2016-17 is given In Annexure-VI			
d) Noise Level Monitoring			
Note: Noise Monitoring Statement for the year 2016-17 is given in Annexure – VII.			

PART – D

Hazardous Wastes

[As specified under Hazardous Wastes (Management and Handling) rules, 1989]

Hazardous Wastes	Total Quantity (KL)	
	During the previous financial year 2015– 2016	During the current financial year 2016 – 2017
a) From process	1.0	0.4
b) From others	Nil	Nil
c) From pollution control facilities	Nil	Nil

Note: Hazardous Waste Annual return Form IV for the year 2016-17 is given in Annexure – VIII.

PART – E

Solid Wastes

	Total Quantity (M.Tones / Year)	
	During the previous financial year 2015-2016	During the current financial year 2016-2017
a) From process	Nil	Nil
b) From Pollution control Facilities	Nil	Nil
c) Quantity recycled or reutilized within the unit	Nil	Nil

FORM –F

Please specify the characteristics (in terms of concentration and quantum) of Hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes

1. Hazardous waste: Hazardous waste Management Form 4(Annual report) as annexure VIII.
2. Solid Waste: NIL

FORM – G

Impact of pollution control measures on conservation of natural resources and consequently on the cost of production.

Storm water pond is constructed in our plant to collect the rain water from entire plant. Over flow of this rain water is being used as feed water and gardening for our plant requirements. Due to which intake water from river is reduced and running hours of the river water pump is also reduced.

FORM – H

Additional investment proposal for environmental protection including abatement of pollution.

All necessary investments for environment protection required are implemented. Further improvement if necessary will be reviewed and action will be taken.

- CEMS for stack gas monitoring
- GVPGL developed greenbelt as per the guide lines.
- Routine green belt maintenance
- Monitoring of environmental parameters with weather monitoring station.
- Operation and maintenance of environment equipment.
- Online connectivity data to APPCB Web site.

FORM – I

Any other particulars for improving the quality of the environment

1. Fully-fledged environmental laboratory was setup for continuous analysis of various streams of waste water, such that any deviations observed are corrected immediately.
2. Water meters are used to determine the quantities and for identification of the areas of conservation time to time.
3. Most of the water generated in the plant is being utilized for green belt purpose after treating water, which is resulted in huge water conservation.
4. Continual plantation programmes are taken for mitigating environmental pollutions.

ANNEXURE – I**RAW WATER CONSUMPTION (m3)
STATEMENT FOR THE FINANCIAL YEAR 2016– 2017**

Month	DM Plant	Cooling Make	Domestic	Gardening	Total Consumption	PLF %
April-16	414.3	0	472	0	886.3	0
May-16	1080	102332	403	0	103815	29.87
June-16	790	166910	295	0	167995.3	42.15
July-16	417.29	0	251	0	668.29	0
August-16	782.5	111469	262	0	112513.5	29.59
September-16	857	33150	291	0	34298	8.03
October-16	0	0	363	0	363	0
November-16	163.8	0	365	0	528.8	0
December-16	178.8	0	313	0	491.8	0
January-17	0	0	197	0	197	0
February-17	0	0	161	0	161	0
March-17	0	0	297	0	297	0
Total / Year	4683.69	413861.3	3670	0	422214.99	
Average/ day	12.8	1133.9	10.1	0	1156.8	
APPCB Limit KL/DAY	384	14000	16	186	14586	

Note: APPCB: Andhra Pradesh Pollution Control Board.

ANNEXURE – II

NATURAL GAS AND POWER GENERATION STATEMENT FOR THE FINANCIAL YEAR 2016 – 2017

Month	Natural Gas Consumption	Gross Power Generation
	24 hrs basis	
	(SCM)	MU
April-16	0	0
May-16	15665909	86.13
June-16	21400019	117.63
July-16	0	0
August-16	15441110	85.35
September-16	4261117	22.42
October-16	372692	2.02
November-16	0	0
December-16	0	0
January-17	0	0
February-17	0	0
March-17	0	0
Total / Year	57140847	313.55
Average/ day	156550	0.859

Note: SCM: Standard Cubic Meter
MU: Million Units

ANNEXURE - III
TREATED EFFLUENT ANALYSIS STATEMENT FOR THE FINANCIAL YEAR 2016 – 2017

Month	pH	Total residual Chlorine (mg/ltr)	Suspended solids (mg/ltr)	Dissolved Phosphates (mg/ltr)		Oil & Grease (mg/ltr)	Copper (mg/l)	Iron (mg/l)	BOD (mg/l)	COD (mg/l)	Temp. Deg C
April-16	0	0	0	0	0	0	0	0	0	0	0
May-16	7.39	BDL	12	0.42	BDL	BDL	BDL	0.55	14	28.8	0.4
June-16	7.56	BDL	14.3	0.4	BDL	BDL	BDL	0.54	20	32	0.5
July-16	7.57	BDL	18	0.38	BDL	BDL	BDL	0.45	25.5	30	0.4
August-16	8.17	BDL	29.2	0.62	BDL	BDL	BDL	0.42	26.2	31.6	0.4
September-16	7.97	BDL	24.5	0.52	BDL	BDL	BDL	0.52	21	29	0.5
October-16	7.86	BDL	16.6	0.55	BDL	BDL	BDL	0.24	22.4	29.2	0.1
November-16	7.78	BDL	15	0.52	BDL	BDL	BDL	0.19	30	23.5	0.2
December-16	7.27	BDL	19.3	0.41	BDL	BDL	BDL	0.26	30	25.3	0.3
January-17	8.41	BDL	17.2	0.36	BDL	BDL	BDL	0.2	23.4	28.4	0.2
February-17	8.09	BDL	24	0.25	BDL	BDL	BDL	0.2	22	26	0.2
March-17	7.5	BDL	16.8	0.22	BDL	BDL	BDL	0.2	21.5	24.5	0.2
Average	7.13	BDL	17.24	0.39	BDL	BDL	BDL	0.31	21.33	25.69	0.28
APPCB Limit	6.5 to 8.5	<1.0	<100	<5.0	<10	<3.0	<3.0	<3.0	<30.0	<250	5 ⁰ C

Note: APPCB: Andhra Pradesh Pollution Control Board.
BDL: Below Detectable Limit.

ANNEXURE - IV

TREATED EFFLUENT (m3) QUANTITY STATEMENT FOR THE FINANCIAL YEAR 2016- 2017

S.No	Month	Cooling Tower Blow Down	D.M.Plant Regeneration, Back Wash & Boiler Blow Down	Floor Wash and other Wash Effluents	Domestic Effluents	Total Quantity Effluents Generated
1	April-16	0	105	0	30	3620
2	May-16	376	1315	0	31	31
3	June-16	1346.3	2496	0	30	30
4	July-16	0	138	0	31	31
5	August-16	1093	1057	0	30	280
6	September-16	37.6	1051	0	31	2753
7	October-16	0	0	0	30	671
8	November-16	0	0	0	30	80
9	December-16	0	237	0	31	31
10	January-17	0	159	0	31	4315
11	February-17	0	128	0	30	2030
12	March-17	0	65	0	31	631
Total / Year		2852.9	6751	0	366	9969.9
Average KL/Day		7.8	18.5	0.0	1.0	27.3
APPCB Limit KL/Day		2064	359	1	10	

ANNEXURE - V

**STACK EMISSION STATEMENT FOR THE FINANCIAL YEAR 2016-2017
OXIDES OF NITROGEN (PPM) AND PM**

S.No	Month	Oxides of Nitrogen in PPM	PM in mg/Nm³
1	April-16	0	0
2	May-16	16.79	7.29
3	June-16	17.33	7.57
4	July-16	0	0
5	August-16	17.23	7.45
6	September-16	17	7.0
7	October-16	0	0
8	November-16	0	0
9	December-16	0	0
10	January-17	0	0
11	February-17	0	0
12	March-17	0	0
Average		5.70	2.44
APPCB Limit		50	115

Note: APPCB: Andhra Pradesh Pollution Control Board.

ANNEXURE - VI

AMBIENT AIR QUALITY ADMIN BUILDING (PLANT SITE) STATEMENT FOR THE FINANCIAL YEAR 2016-2017

S.No	Month	PM ₁₀	PM _{2.5}	SO ₂	Nox
		[µg/m ³]	[µg/m ³]	[µg/m ³]	[µg/m ³]
1	April - 16	50.2	15.4	4.8	5.5
2	May - 16	50.2	15.4	4.8	5.5
3	June - 16	44.1	13.9	4.4	5.0
4	July-16	45.0	13.9	4.3	5.0
5	August-16	42.8	13.4	4.1	4.8
6	September-16	42.8	13.0	4.0	4.7
7	October-16	40.9	12.8	3.6	4.3
8	November-16	39.6	12.2	3.6	4.1
9	December-16	39.3	11.8	3.8	4.1
10	January-17	39.9	11.9	3.8	4.1
11	February-17	38.7	11.7	3.6	4.0
12	March-17	36.3	10.2	2.9	2.8
Average		42.48	12.97	3.98	4.49
APPCB Limit		100	60	80	80

Note: APPCB: Andhra Pradesh Pollution Control Board.

ANNEXURE – VII

**NOISE LEVELS STATEMENT FOR THE FINANCIAL YEAR 2016-2017
AMBIENT NOISE LEVEL MEASUREMENTS dB [A]**

S.No	Month	Plant site [Main Gate]	
		Day Equivalent	Night Equivalent
1	April – 16	63.2	55.5
2	May – 16	58.9	52.1
3	June – 16	56.7	53.2
4	July-16	54.8	54.1
5	August-16	56	55.2
6	September-16	55.4	54
7	October-16	53.5	52.3
8	November-16	55.5	53.7
9	December-16	55.8	54.1
10	January-17	52.7	50.9
11	February-17	58.4	56.7
12	March-17	56.2	55.8
Average		56.42	53.96
APPCB Limit		75.0	70.0

Note: APPCB: Andhra Pradesh Pollution Control Board.

ANNEXURE – VIII

FORM-IV STATEMENT FOR THE YEAT 2016-17.

[See rules 5(6) and 22 (2)]

FORM FOR FILLING ANNUAL RETURNS THE OCCUPIER OR OPERATOR OF FACILITY

[To be submitted by occupier/operator of disposal facility to State Pollution Control Board/Pollution Control Committee by 30th June of every year for the preceding period April to March]

For the period : **April 2016-March 2017**

Authorization No: **APPCB/VSP/RJY/647/CFO/HO/2015. Dated: 28.10.2015**

1.	Name and address of the Occupier and Operator Facility	GMR Vemagiri Power Generation Limited Vemagiri Village Kadiyam Mandal East Godavari District\, Andhra Pradesh	
2.	Name of the authorized person and full address with telephone and fax number:	Mathews. P Plant Head GMR Vemagiri Power Generation Limited Vemagiri Village Kadiyam Mandal East Godavari District Andhra Pradesh	
3.	Description of Hazardous wastes	Waste Oil	Used Oil Filters
4.	Quantity of Hazardous wastes (in KL)	0.4	Nil
5.	Description of storage	Barrels	NA
6.	Description of Treatment	NA	NA

7.	Details of transportation	Name & address of consignee	Mode of packing	Mode of transportation	Date of transportation
		M/s Sri Srinivasa Lubricants, Plot # E4 &E5, Proddatur, Kadappa district, Andhra Pradesh	Sealed Barrels	6 tyre Lorry	11 th June 2016
8.	Detail of disposal of hazardous waste	Used Oil	Sealed Barrels – 5 no's (Qty – 900 ltrs.)	6 tyre Lorry	11 th June 2016
9.	Quantity of useful materials sent back to the manufacturers* and others#	Not applicable			