



MSIL:PRDS:EGM:1112: 0024 18-May-2011

To
Ministry of Environment and Forest
Northern Regional Office
Bays No 24-25, Sector – 31 A,
Dakshin Marg
Chandigarh

Kind Attn: Mr. Surendra Kumar, Additional Director

Sub: Half yearly report for Compliance of Environmental Condition for Gas turbine.

Ref: Environment Clearance Letter from Moef – No. J-13011/71/2007-IA-II (T), dated 05.02.2008.

Dear Sir,

Enclosed please find herewith the half yearly report for the environment clearance issued for our Gas turbine.

Thanking You.

Yours Faithfully

Deepak Jain
Dy. General Manager (EGM)
Maruti Suzuki India Limited, Gurgaon.

MARUTI SUZUKI INDIA LIMITED

Regd. Office:
Plot No. 1, Nelson Mandela Road, Vasant
Kunj, New Delhi – 110070.
Ph: 011 – 46781000

Gurgaon Plant:
Palam Gurgaon Road, Gurgaon – 122015,
Haryana, India
Ph: 0124-2346721 Fax: 0124-2341304

Manesar Plant:
Plot No. 1, Phase -3A, IMT,
Manesar, Gurgaon-122051
Haryana, India

DATA SHEET

1.	Project Type	River Valley/Mining/Industry /Transportation Tourism/Thermal/Nuclear/Other (Specify)
2.	Name of the Project:	70 MW Gas turbine at Maruti Suzuki India Limited, Manesar, Haryana
3.	Clearance letter (s)/ O.M No. & dates:	No. J-13011/71/2007-IA.II(T) Dated: 5 th February, 2008
4.	Location: a) District (s) b) State (s) c) Latitudes/Longitudes	District: Gurgaon State: Haryana Latitude: 27 ⁰ 39' N to 28 ⁰ 32'N Longitude: 76 ⁰ 39'E to 77 ⁰ 20'E
5.	Address for correspondence: a) Address of Concerned Project Chief Engineer (with Pin Code/ Tel No./Telex/Fax No./E mail address) b) Address of executive Project Engineer/ Manager (with Pin Code/ Tel No./Telex/Fax No./Email address)	Mr. Deepak Jain Dy. General Manager (EGM) Production Services Division, Maruti Suzuki India Limited, Gurgaon, Haryana Ph: 0124 – 4393583 Deepak.Jain@maruti.co.in Mr. Sanjay Baronia Asst. General Manager (EM3) Production Services Division, Maruti Suzuki India Limited, Gurgaon, Haryana Ph: 0124 – 4392464 Sanjay.Baronia@maruti.co.in
6.	Salient Features: a) of the project b) of the environmental management plans	Salient Features of the project and Environmental Management Plan details is enclosed in Annexure A
7.	Break up of the project area: a) Submergence area : Forest & Non-forest b) Others	The project will be located within MSIL premises in the Industrial Area.
8.	Break up of the project affected population with enumeration of those losing house /dwelling units only, agricultural land only both dwelling units and agricultural land and landless laborers/artisans.	Not Applicable

	<p>a) SC/ST/Adivasis</p> <p>b) Others (Please indicate whether these figure are based on any scientific and systematic survey carried out or only provisional figures. If a survey has been carried out, give details and year of survey)</p>	
9.	<p>Financial details:</p> <p>a) Project cost as originally planned and subsequent revised estimates and the year or price reference.</p> <p>b) Allocations made for environmental management plans with item wise and year wise break up.</p> <p>c) Benefit cost ratio/Internal Rate of Return and the year of assessment.</p> <p>d) Whether (c) includes the cost of environment management as shown in b) above.</p> <p>e) Actual expenditure incurred on the project so far.</p> <p>f) Actual expenditure incurred on the environmental management plans so far:</p>	Enclosed in Annexure – B
10.	<p>Forest land requirement :</p> <p>a) The status of approval for diversion of forest land for non-forestry use.</p> <p>b) The status of clear felling.</p> <p>c) The status of compensatory afforestation of clear felling. If any.</p> <p>d) Comments on the viability & sustainability of compensatory afforestation programmes in the light of actual field experience so far.</p>	Not Applicable
11.	<p>The status of clear feeling in non-forest areas (such as submergence area of reservoir, approach road) if any, with quantitative information.</p>	Not Applicable
12.	<p>Status of construction.</p> <p>1. date of commencement (actual and/ or planned)</p> <p>2. b) Date of completion (actual and / or planned)</p>	<p>1. 3X10MW GT are under operation.</p> <p>2. 1X20MW GT is under operation.</p> <p>3. Remaining GT is under planning stage</p>
13.	<p>Reasons for the delay if the project is yet to start:</p>	Not Applicable

S No	Clearance Conditions	Compliance Status
1	No additional land shall be acquired in excess of 8500 m ² for any utilities / facilities relating to the project.	The project will be located within Maruti Suzuki India Limited premises at IMT Manesar and the power plant will be set within 8500 sq.m area.
2	NOC from BARC shall be obtained prior to start of construction of the project due to the proximity of the project to BARC observatory.	NOC obtained from BARC is placed at Annexure-1.
3	Gas shall only be used as fuel, however, HSD may be used as standby fuel for not more than 30 days in a year when gas is not available. However, the 3 turbines scheduled to be installed during 2008 may be operated on HSD till January, 2009 when gas would become available. Thereafter, gas shall be used as fuel.	Natural gas supply has commenced at Manesar plant
4	Dry Low NO _x burners shall be provided and it shall be ensured that NO _x emission from the stack is less than 100 ppm.	NO _x emissions are less than 100 ppm. The stack monitoring report are placed at Annexure-2.
5	The height of the stack shall be as per the standards prescribed under the Environment (Protection) Act in this regard or 30 m, whichever is more with continuous online monitoring system. Exit velocity shall not be less than 29 m/s.	All the stacks of the installed Gas Turbines are of 30 mts height. Continuous online monitoring system is under implementation.
6	Air cooled condensers shall be installed.	Air cooled condenser installed for the Gas Turbines
7	Water requirement shall not exceed the 2451 KL/day and shall be met from existing bore wells. The necessary prior permission for drawl of requisite quantity of groundwater for the project as applicable shall be obtained from the Competent Authority.	As air cooled condenser is installed for the Gas Turbines, the daily water requirement is very negligible and are met from the existing tube wells. Current water drawl is maintained within the quantity permitted by the Competent Authority.
8	Treated effluents conforming to the prescribed standards shall be recirculated and reused within the plant area, No effluents shall be discharged outside the plant boundary.	The treated effluents conform to the prescribed standards and are reused for the process requirements after recycling. Report is placed at Annexure-3.
9	Rainwater harvesting shall be practiced. A detailed scheme for rain water harvesting to recharge the ground water aquifer shall be prepared in consultation with central Ground water Authority/ State Ground Water Board and a copy of the same shall be submitted within three months to this Ministry.	Detailed rain water harvesting scheme has been submitted to the Central Ground Water Authority. The details of the lagoon and the cross section has been attached in Annexure-4.
10	Leq of Noise level shall be limited to 75 dBA and regular maintenance of equipments should be undertaken. For people working in high noise areas, personal protection devices should be provided.	Gas Turbines are provided with the acoustic enclosure to limit the noise level within 75 dBA at plant boundary. The persons working in high noise areas are provided with the personal protection devices.
11	A greenbelt shall be developed around the plant boundary with tree density of around 2500 trees per ha. The area under greenbelt shall be at least 1/3 rd of the total area.	Details of Green Belt are placed at Annex: 5
12	First aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	First aid and necessary sanitation arrangement has been made available for the drivers and other contract workers during construction phase.

13	Regular monitoring of the ambient quality shall be carried out in and around the power plant and records maintained. The location of monitoring stations and frequency of monitoring shall be decided in consultation with the state pollution Control Board. Periodic reports shall be submitted to the Regional Office of this Ministry at Chandigarh.	Ambient Air quality is being monitored quarterly at the locations fixed based on the modelling results from the PCRI and the reports are placed at Annexure-6.
14	The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the issue of this letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forest at http://envfor.nic.in .	Notice was published in Amar Ujala (Hindi) and Tribune (English).
15	A separate environment management cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.	Details of the Environment Management Cell is placed at Annexure-7.
16	Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards shall be submitted to this Ministry, the Regional Office. And the CPCB/SPCB	Half yearly compliance report will be submitted to MoEF Regional office.
17	Regional office of the Ministry of Environment & forests located at Chandigarh will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring.	Complied
18	Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. These cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure shall be reported to the Ministry.	Funds for EMP have been included in the project cost itself. It shall be utilised for this purpose only.
19	Full cooperation shall be extended to the Scientist/Officers from the Ministry/ Regional Office of the Ministry at Chandigarh/the CPCB/THE SPCB who would be Monitoring the Compliance of Environmental status.	Full Cooperation will be extended to the officials from SPCB / CPCB and MoEF.

SALIENT FEATURES OF PROJECT:

1. Name of the Project : Gas turbine at Maruti Suzuki India Limited,
Manesar, Haryana
2. Capacity : 70 MW
3. Location : Maruti Suzuki India Limited, IMT Manesar.
4. Total project cost : Rs. 389 Crores
5. Land Area : 8500 sq m

ENVIRONMENTAL MANAGEMENT PLAN***Water Pollution control***

- The Gas Turbine is air cooled hence the waste water generated shall be very minimum. Existing ETP will treat the effluent arising out of the plant operation and the treated waste water will be reused.

Air Pollution control:

- Stacks of the GT shall be maintained at 30m.
- Dry low NO_x burners will be installed in gas turbines and the NOX emissions will be below 100ppm.
- SPM and SO₂ emissions will be very low as natural gas is a clean fuel and ultra low sulphur diesel will be used initially or in case of emergency operation. Later on after the availability of natural gas, SPM and SO₂ emissions will further go down

Noise Pollution Control

- The noise from Gas Turbines will be controlled by acoustic enclosures. The noise level at the periphery of factory/premises will not exceed the ambient noise level.

Ground Water

- Rain water harvesting lagoons have been constructed to take care of surface run off and recharge the aquifers.

Green belt development

- Adequate green area will be developed with local area species having capacities to reduce SPM and noise levels.

Financial Details of the Project

SI No.	Description	Amount
1	Total cost of the project	Rs. 389 Crores
2	Expenditure towards Environmental protection	
	a. Dry Low NOX Burner	Rs. 35 Crore
	b. Air cooled cooling towers	Rs. 7 Crores
	c. Green Belt	Rs. 0.5 Crores
3	Expenditure incurred in project so far	Rs. 221 Crores
4	Expenditure on Environmental Management Plan so far	Rs. 14 Crores

ANNEXURE - 1
Fax Annex-1

राष्ट्र/टेल : 022 - 2550 5354
राष्ट्र/फैक्स : 022 - 2550 5151
022 - 2550 5353
ईमेल : ndsharma@barc.gov.in



सेंट्रल कॉम्प्लेक्स,
ट्रॉम्बे, मुंबई - 400 085.
Central Complex,
Trombay,
Mumbai - 400 085.

ड. शर्मा
नियंत्रक
D. Sharma
Controller

भारत सरकार
GOVERNMENT OF INDIA
भाभा परमाणु अनुसंधान केंद्र
BHABHA ATOMIC RESEARCH CENTRE

Ref: 14/8/91/Admin-I / 3281

April 16, 2008

Maruti Suzuki India Limited,
Palam Gurgaon Road,
Gurgaon, Haryana - 122 015

Kind Attn: Mr Vinay Varshney, Chief General Manager (Production Services)
Sub: NOC for Expansion of Power Plant at MSIL, IMT Manesar

Sir,

With reference to your letter MSIL:PRDS:EM2:1728 dated 18th February, 2008, we confirm that BARC has no objection in expansion of your power plant at IMT Manesar.

Thanking You,

Yours faithfully,
N. D. Sharma

(N. D. Sharma)
Controller
16/04/08

संचार अनुभाग / Communication Section
फैक्स परिप्रेषण / Fax Transmittion
दिनांक 29/5/08
Transmitted on at hrs



प्रदूषण नियन्त्रण अनुसंधान संस्थान
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रानीपुर, (उत्तराखण्ड) -249403

POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP/UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.)-249403

(Recognised under Environment (Protection) Act, 1986)

TEST REPORT

STACK EMISSION MONITORING

Lab. Ref.:PCRI: Air & Noise:2010-2011:1653

Date:08.02.2011

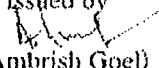
A. GENERAL INFORMATIONS:


1.	Name and address of Plant	:	M/S Maruti Suzuki India Ltd., Manesar (Haryana)
2.	Work Order No.	:	10-0076 O-991
3.	Date of sampling	:	13.01.2011
4.	Source of emission	:	Gas Turbine-I
5.	Construction Material of Stack	:	Mild Steel
6.	Stack Height from G.L.	:	30 m
7.	Internal diameter of stack	:	1.35 m
8.	Location of sampling point	:	Stack
9.	Method of sampling	:	Emission Regulations Part - III, IS: 11255, FID, NDIR and Electro Chemical Sensors
10.	Capacity	:	4.3 MW
11.	Load during sampling	:	2.5 MW
12.	Type of fuel used and consumption	:	1222 Nm ³ /Hour (Natural Gas)
13.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar U.K.

B. RESULTS OF FLUE GAS EMISSION MONITORING:

Sl. No.	Parameter	Unit	Value	Allowable Limit
1.	Flue Gas Temperature	^o C	398	-
2.	Flue Gas Velocity	m/Sec	12.5	-
3.	Emission Rate	m ³ /Sec	17.9	-
4.	Particulate Matter	mg/Nm ³	7	-
5.	Sulphur Dioxide	PPM	BDL	-
6.	Nitrogen Oxides	PPM	36	100
7.	Carbon Monoxide	PPM	14	-
8.	Carbon Dioxide	%	9.8	-
9.	Hydrocarbons (HC)	PPM	28	-

BDL: Below Detectable Limit,

Issued by

(Ambrish Goel)
Dy. GM (PCRI)

Checked by

(Bhoj Raj)
Sr. Manager (PCRI)

- Remarks:- (1) This report refers only to the particular sample/job submitted for testing.
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(3) Samples will be disposed off after one month from the date of issue of Test Certificate



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BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.)-249403

(Recognised under Environment (Protection) Act, 1986)

TEST REPORT

STACK EMISSION MONITORING

Lab. Ref.:PCRI: Air & Noise:2010-2011: 1654
Date:08.02.2011

A. GENERAL INFORMATIONS:

1.	Name and address of Plant	:	M/S Maruti Suzuki India Ltd., Manesar (Haryana)
2.	Work Order No.	:	10-0076-O-991
3.	Date of sampling	:	13.01.2011
4.	Source of emission	:	Gas Turbine-2
5.	Construction Material of Stack	:	Mild Steel
6.	Stack Height from G.L.	:	30 m
7.	Internal diameter of stack	:	1.35 m
8.	Location of sampling point	:	Stack
9.	Method of sampling	:	Emission Regulations Part - III, IS: 11255, FID, NDIR and Electro Chemical Sensors
10.	Capacity	:	4.3 MW
11.	Load during sampling	:	2.6 MW
12.	Type of fuel used and consumption	:	1261 Nm ³ /hour (Natural Gas)
13.	Sample collection by	:	PCRI.B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF FLUE GAS EMISSION MONITORING:

Sl. No.	Parameter	Unit	Value	Allowable Limit
1.	Flue Gas Temperature	"C	338	-
2.	Flue Gas Velocity	m/Sec	12.2	-
3.	Emission Rate	m ³ /Sec	17.4	-
4.	Particulate Matter	mg/Nm ³	6	-
5.	Sulphur Dioxide	PPM	BDL	-
6.	Nitrogen Oxides	PPM	31	100
7.	Carbon Monoxide	PPM	21	-
8.	Hydrocarbons (HC)	PPM	30	-
9.	Carbon Dioxide	%	9.6	-

BDL: Below Detectable Limit,

Issued by
(Signature)
(Ambrish Goel)
Dy. GM (PCR)

Checked by
(Signature)
(Bhoj Raj)
Sr. Manager (PCR)

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(Recognised under Environment (Protection) Act, 1986)

TEST REPORT

STACK EMISSION MONITORING

Lab. Ref.:PCRI: Air & Noise:2010-2011:1655

Date:08.02.2011

A. GENERAL INFORMATIONS:

1.	Name and address of Plant	:	M/S Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	10-0076-O-991
3.	Date of sampling	:	13.01.2011
4.	Source of emission	:	Gas Turbine-3
5.	Construction Material of Stack	:	Mild Steel
6.	Stack Height from G.L.	:	30 m
7.	Internal diameter of stack	:	1.35 m
8.	Location of sampling point	:	Stack
9.	Method of sampling	:	Emission Regulations Part - III, IS: 11255, FID, NDIR and Electro Chemical Sensors
10.	Capacity	:	4.3 MW
11.	Load during sampling	:	2.5 MW
12.	Type of fuel used and consumption	:	1202 Nm ³ /Hour (Natural Gas)
13.	Sample collection by	:	PCRI, B.I.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF FLUE GAS EMISSION MONITORING:

Sl. No.	Parameter	Unit	Value	Allowable Limit
1.	Flue Gas Temperature	"C	323	-
2.	Flue Gas Velocity	m/Sec	12.1	-
3.	Emission Rate	m ³ /Sec	17.3	-
4.	Particulate Matter	mg/Nm ³	5	-
5.	Sulphur Dioxide	PPM	BDL	-
6.	Nitrogen Oxides	PPM	29	100
7.	Carbon Monoxide	PPM	23	-
8.	Carbon Dioxide	%	9.3	-
9.	Hydrocarbons (HC)	PPM	26	-

BDL: Below Detectable Limit.

Issued by

(Ambrish Goel)
Dy. GM (PCRI)

Checked by

(Bhoj Raj)
Sr. Manager (PCRI)

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RANIPUR, HARIDWAR (U.K.)-249403

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TEST REPORT

STACK EMISSION MONITORING

Lab. Ref.:PCRI: Air & Noise:2010-2011: 1657

Date:08.02.2011

A. GENERAL INFORMATIONS:

1.	Name and address of Plant	:	M/S Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	10-0076-O-991
3.	Date of sampling	:	13.01.2011
4.	Source of emission	:	Gas Turbine-4
5.	Construction Material of Stack	:	Mild Steel
6.	Stack Height from G.L.	:	30 m
7.	Internal diameter of stack	:	2.0 m
8.	Location of sampling point	:	Stack
9.	Method of sampling	:	Emission Regulations Part - III, IS: 11255, FID, NDIR and Electro Chemical Sensors
10.	Capacity	:	10.0 MW
11.	Load during sampling	:	7.0 MW
12.	Type of fuel used and consumption	:	1.9 KL/Hr (HSD)
13.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF FLUE GAS EMISSION MONITORING:

Sl. No.	Parameter	Unit	Value	Allowable Limit
1.	Flue Gas Temperature	^o C	521	-
2.	Flue Gas Velocity	m/Sec	10.6	-
3.	Emission Rate	m ³ /Sec	33.3	-
4.	Particulate Matter	mg/Nm ³	71	-
5.	Sulphur Dioxide	PPM	0.4	-
6.	Nitrogen Oxides	PPM	19	100
7.	Carbon Monoxide	PPM	8	-
8.	Carbon Dioxide	%	2.6	-
9.	Hydrocarbons (HC)	%	0.01	-

Issued by

(Ambrish Goel)
Dy. GM (PCRI)

Checked by

(Bhoj Raj)
Sr. Manager (PCRI)

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BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (UK) - 249 403

(Recognised under Environment (Protection) Act, 1986)

TEST REPORT

STACK EMISSION MONITORING

Lab. Ref.:PCRI:Air & Noise:2010-2011:258

Date: 12.07.2010

A. GENERAL INFORMATIONS:

1.	Name and address of Plant	:	M/S Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	10-0076-O-991
3.	Date of sampling	:	15.06.2010
4.	Source of emission	:	Gas Turbine-5
5.	Construction Material of Stack	:	Mild Steel
6.	Stack Height from G.L.	:	30 m
7.	Internal diameter of stack	:	2.0 m
8.	Location of sampling point	:	Stack
9.	Method of sampling	:	Emission Regulations Part – III, IS: 11255 , FID, NDIR and Electro Chemical Sensors
10.	Capacity	:	10.0 MW
11.	Load during sampling	:	5.0 MW
12.	Type of fuel used and consumption	:	2 KL/Hr (HSD)
13.	Sample collection by	:	PCRI , B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF FLUE GAS EMISSION MONITORING:

Sl. No.	Parameter	Unit	Value	Allowable Limit
1.	Flue Gas Temperature	⁰ C	575	-
2.	Flue Gas Velocity	m/Sec	10.9	-
3.	Emission Rate	m ³ /Sec	34.3	-
4.	Particulate Matter	mg/Nm ³	49	150
5.	Sulphur Dioxide	PPM	10	-
6.	Nitrogen Oxides	PPM	15	100
7.	Carbon Monoxide	PPM	11	-
8.	Carbon Dioxide	%	2.3	-
9.	Hydrocarbons (HC)	PPM	0.01	-

Issued By

(Signature)
(Bhoj Raj)

Sr. Manager (PCRI)

भोज राज/BHOJ RAJ

वरिष्ठ प्रबन्धक/Sr. Manager

प्रदूषण नियन्त्रण अनुसन्धान संस्थान
Pollution Control Research Institute
BHEL, HEEP, HARIDWAR

Checked By

(Signature)
(R S Yadav)

Engineer (PCRI)

(Signature)

(Signature)

(Signature)

(Signature)

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(A Govt. of India-UNDP/UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARIDWAR (UK) - 249 403
(Recognised under Environment (Protection) Act, 1986)

TEST REPORT
STACK EMISSION MONITORING

Lab. Ref.:PCRI: Air & Noise:2010-2011:747
Date:16.10.2010

A. GENERAL INFORMATIONS:

1.	Name and address of Plant	:	M/S Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	10-0076-O-991
3.	Date of sampling	:	17.09.2010
4.	Source of emission	:	Gas Turbine-6
5.	Construction Material of Stack	:	Mild Steel
6.	Stack Height from G.L.	:	30 m
7.	Internal diameter of stack	:	2.0 m
8.	Location of sampling point	:	Stack
9.	Method of sampling	:	Emission Regulations Part – III, IS: 11255 , FID, NDIR and Electro Chemical Sensors
10.	Capacity	:	10.0 MW
11.	Load during sampling	:	5.0 MW
12.	Type of fuel used and consumption	:	2 KL/Hr (HSD)
13.	Sample collection by	:	PCRI , B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF FLUE GAS EMISSION MONITORING:

Sl. No.	Parameter	Unit	Value	Allowable Limit
1.	Flue Gas Temperature	⁰ C	648	-
2.	Flue Gas Velocity	m/Sec	11.0	-
3.	Emission Rate	m ³ /Sec	34.5	-
4.	Particulate Matter	mg/Nm ³	49	150
5.	Sulphur Dioxide	PPM	10	-
6.	Nitrogen Oxides	PPM	15	100
7.	Carbon Monoxide	PPM	13	-
8.	Carbon Dioxide	%	2.5	-
9.	Hydrocarbons (HC)	PPM	0.01	-

Issued by

(Bhoj Raj)

Sr. Manager (PCRI)

वरिष्ठ प्रबन्धक/Sr. Manager
प्रदूषण नियन्त्रण अनुसन्धान संस्थान
Pollution Control Research Institute
BHEL, HEEP, HARIDWAR

Checked by

(R S Yadav)

Engineer (PCRI)

जांचक/Engineer
प्रदूषण नियन्त्रण अनुसन्धान संस्थान
Pollution Control Research Institute
BHEL, HEEP, HARIDWAR

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BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.)-249403

(Recognised under Environment (Protection) Act, 1986)

TEST REPORT

STACK EMISSION MONITORING

Lab. Ref.:PCRI: Air & Noise:2010-2011: 1658
Date:08.02.2011

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/S Maruti Suzuki India Ltd., Manesar, Haryana
2.	Work Order No.	:	10-0076-O-991
3.	Date of sampling	:	13.01.2011-14.01.2011
4.	Source of emission	:	Gas Turbine (BHEL Make)
5.	Construction Material of Stack	:	Mild Steel
6.	Stack Height from G.L.	:	30 m
7.	Internal diameter of stack	:	3 m
8.	Location of sampling point	:	Stack
9.	Method of sampling	:	Emission Regulations Part - III, IS: 11255 , FID, NDIR and Electro Chemical Sensors
10.	Capacity	:	20 MW
11.	Load during sampling	:	6.5 MW
12.	Type of fuel used and consumption	:	2.5 KL/Hour (HSD)
13.	Sample collection by	:	PCRI B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF FLUE GAS EMISSION MONITORING:

Sl. No.	Parameter	Unit	Value	Allowable Limit
1	Flue Gas Temperature	° C	381	-
2	Flue Gas Velocity	m/sec	12.4	-
3	Emission Rate	m ³ /sec	87.7	-
4	Particulate Matter	mg/Nm ³	68	-
5	Sulphur Dioxide (SO ₂)	PPM	BDL	-
6	Nitrogen Oxides (NO _x)	PPM	31	100
7	Carbon Monoxide	PPM	17	-
8	Total Hydrocarbons	PPM	26	-
9	Carbon Dioxide (CO ₂)	%	10.5	-

BDL: Below Detectable Limit

Issued by

(Anirish Goel)
Dy. GM (PCRI)

Checked by

(Bhoj Raj)
Sr. Manager (PCRI)

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BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARIDWAR (UA) - 249 403
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TEST REPORT

Lab Reference No: TL101863 **Date:** 07.02.2011
Indentor : M/s Maruti Suzuki India Limited, Manesar Plant, Plot No. 1,
Phase 3 A, IMT, Manesar, Gurgaon (Haryana)
Customer's Ref. No.: MSIL:PRDS:EGM:1011 dated 26.05.2010
Work Order No.: 10-0076-O-991
Sample Collected by: PCRI Staff **Collection Date:** 13.01.2011
Sample/Job: ETP - I Outlet

PARAMETER	UNIT	OBTAINED VALUE	STANDARD LIMITS*
BOD ₃ at 27°C	mg/L	7	100
COD	mg/L	20	-
Cadmium (as Cd)	mg/L	ND	-
Chromium Hexavalent (as Cr ⁺⁶)	mg/L	ND	-
Chromium Total (as Cr)	mg/L	ND	-
Copper (as Cu)	mg/L	0.01	-
Dissolved Phosphates (as P)	mg/L	0.79	-
Iron (as Fe)	mg/L	0.05	-
Lead (as Pb)	mg/L	0.01	-
Nickel (as Ni)	mg/L	0.19	-
Oil & Grease	mg/L	1.4	10
pH	-	8.1	5.5 - 9.0
Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	ND	-
Sulphide (as S)	mg/L	1.4	-
Total Dissolved Solids	mg/L	846	-
Total Suspended Solids	mg/L	32	200
Zinc (as Zn)	mg/L	0.18	-

ND - Not Detectable

*(SCHEDULE VI OF EPA, 1993) FOR DISCHARGE ON LAND FOR IRRIGATION.

(Signature)
(Dr. S. Bhatnagar) 7/2/11
Sr. Manager (PCRI)
श्री एस. भटनागर
(Dr. S. Bhatnagar)
श्री एस. भटनागर (Sr. Manager)

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BHEL, Ranipur, Haridwar



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BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARIDWAR (UA) - 249 403
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TEST REPORT

Lab Reference No: TL101473 **Date:** 29.11.2010
Indentor : M/s Maruti Suzuki India Limited, Manesar Plant, Plot No. 1,
Phase 3 A, IMT, Manesar, Gurgaon (Haryana)
Customer's Ref. No.: MSIL:PRDS:EGM:1011 dated 26.05.2010
Work Order No.: 10-0076-O-991
Sample Collected by: PCRI Staff **Collection Date:** 13.11.2010
Sample/Job: ETP - II Outlet

PARAMETER	UNIT	OBTAINED VALUE	STANDARD LIMITS*
BOD ₃ at 27°C	mg/L	7	100
COD	mg/L	30	-
Cadmium (as Cd)	mg/L	ND	-
Chromium Hexavalent (as Cr ⁺⁶)	mg/L	ND	-
Chromium Total (as Cr)	mg/L	ND	-
Copper (as Cu)	mg/L	0.01	-
Dissolved Phosphates (as P)	mg/L	1.11	-
Iron (as Fe)	mg/L	0.03	-
Lead (as Pb)	mg/L	ND	-
Nickel (as Ni)	mg/L	0.07	-
Oil & Grease	mg/L	0.8	10
pH	-	7.2	5.5 - 9.0
Phenolic Compounds (as C ₆ H ₅ OH)	mg/L	ND	-
Sulphide (as S)	mg/L	0.2	-
Total Dissolved Solids	mg/L	776	-
Total Suspended Solids	mg/L	28	200
Zinc (as Zn)	mg/L	0.05	-

ND - Not Detectable

*(SCHEDULE VI OF EPA, 1993) FOR DISCHARGE ON LAND FOR IRRIGATION.

Dr. S. Bhatnagar
(Dr. S. Bhatnagar)

Sr. Manager (PCRI)
डॉ० एस. भटनागर
(Dr. S. Bhatnagar)

वरिष्ठ प्रबन्धक (Sr. Manager)

Pollution Control Research Institute
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BHARAT HEAVY ELECTRICALS LIMITED
RANIPUR, HARIDWAR (UA) - 249 403
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TEST REPORT

Lab Reference No.: TL101862 Date: 07.02.2011
Indentor: M/s Maruti Suzuki India Limited, Manesar Plant, Plot No. 1, Phase 3 A,
IMT, Manesar, Gurgaon (Haryana)
Customer's Ref. No.: MSIL:PRDS:EGM:1011 dated 26.05.2010
Work Order No.: 10-0076-O-991
Sample Collected by: PCRI Staff Collection Date: 13.01.2011
Sample/Job: STP Outlet

PARAMETER	UNIT	OBTAINED VALUE	STANDARD LIMITS*
Ammonical Nitrogen (as N)	mg/L	1.96	50
Arsenic (as As)	mg/L	ND	0.2
Bioassay Test	-	90% survival of fish after 96 hours in 100% effluent	90% survival of fish after 96 hours in 100% effluent
BOD ₅ at 27°C	mg/L	5	30
Boron (as B)	mg/L	ND	-
Cadmium (as Cd)	mg/L	ND	2.0
Chloride (as Cl)	mg/L	204	-
Chromium Hexavalent (as Cr ⁶⁺)	mg/L	ND	0.1
Chromium Total (as Cr)	mg/L	ND	2.0
COD	mg/L	20	250
Copper (as Cu)	mg/L	0.01	3.0
Cyanide (as CN)	mg/L	ND	0.2
Dissolved Phosphates (as P)	mg/L	2.50	5.0
Fluoride (as F)	mg/L	0.82	2.0
Free Ammonia (as NH ₃)	mg/L	1.96	5.0
Iron (as Fe)	mg/L	0.04	3.0
Lead (as Pb)	mg/L	ND	0.1
Manganese (as Mn)	mg/L	0.02	2.0
Mercury (as Hg)	mg/L	ND	0.01
Nickel (as Ni)	mg/L	0.02	3.0
Nitrate (as NO ₃)	mg/L	7.23	10
Oil & Grease	mg/L	0.8	10
Percent Sodium	%	72.1	-
pH	-	7.9	5.5 - 9.0
Phenols (as C ₆ H ₅ OH)	mg/L	ND	1.0
Selenium (as Se)	mg/L	ND	0.05
Sulphate (as SO ₄)	mg/L	30.3	-
Total Dissolved Solids	mg/L	394	-
Total Kjeldahl Nitrogen (as N)	mg/L	65.5	100
Total Residual Chlorine	mg/L	ND	1.0
Total Suspended Solids	mg/L	30	100
Vanadium (as V)	mg/L	ND	0.2
Zinc (as Zn)	mg/L	0.07	5.0

ND - Not Detectable, *(SCHEDULE VI OF EPA, 1993) FOR DISCHARGE INTO SURFACE WATER

(Signature)
(Dr. S. Bhatnagar) 7/2/11
Sr. Manager (PCRI)

डॉ. एस. भटनगर

(Dr. S. Bhatnagar)

वरिष्ठ प्रबंधक (Sr. Manager)

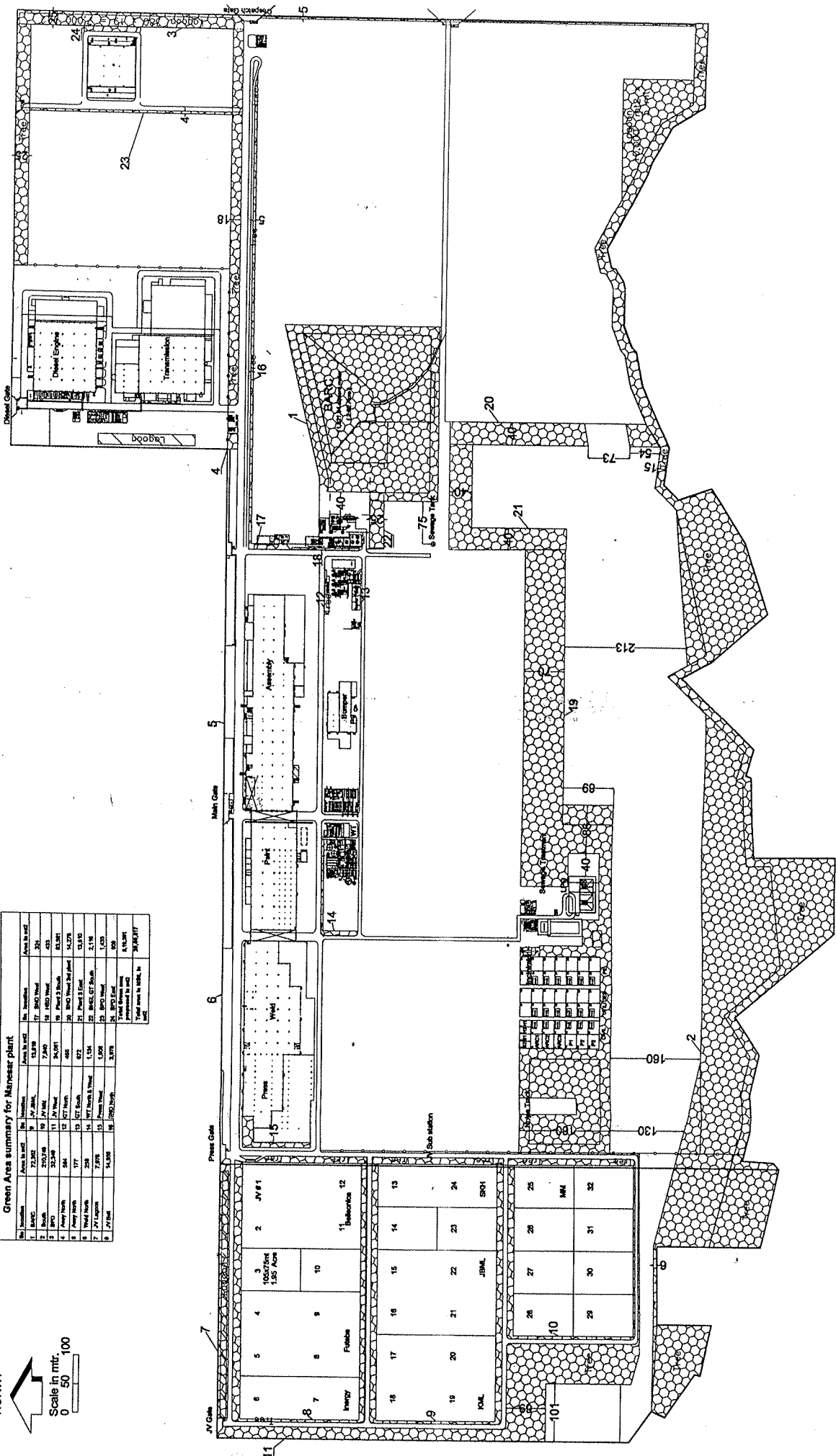
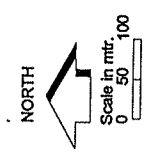
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Green Area summary for Manesar plant

Sl. No.	Location	Area in sq. mtr.	No. of buildings	Area in sq. mtr.
1	BARC	22,355	17	20,000
2	Shop	2,00,000	11	1,80,000
3	APD	22,348	11	20,000
4	Assembly	54,001	12	45,000
5	Energy	584	12	500
6	Work North	1,771	13	1,500
7	Work South	2,208	14	1,900
8	JV Laptop	7,876	15	7,000
9	JV Bed	14,006	16	12,500
10	Work Station	1,100	17	1,000
11	Work Station	1,100	18	1,000
12	Work Station	1,100	19	1,000
13	Work Station	1,100	20	1,000
14	Work Station	1,100	21	1,000
15	Work Station	1,100	22	1,000
16	Work Station	1,100	23	1,000
17	Work Station	1,100	24	1,000
18	Work Station	1,100	25	1,000
19	Work Station	1,100	26	1,000
20	Work Station	1,100	27	1,000
21	Work Station	1,100	28	1,000
22	Work Station	1,100	29	1,000
23	Work Station	1,100	30	1,000
24	Work Station	1,100	31	1,000
25	Work Station	1,100	32	1,000
26	Work Station	1,100	33	1,000
27	Work Station	1,100	34	1,000
28	Work Station	1,100	35	1,000
29	Work Station	1,100	36	1,000
30	Work Station	1,100	37	1,000
31	Work Station	1,100	38	1,000
32	Work Station	1,100	39	1,000
33	Work Station	1,100	40	1,000
34	Work Station	1,100	41	1,000
35	Work Station	1,100	42	1,000
36	Work Station	1,100	43	1,000
37	Work Station	1,100	44	1,000
38	Work Station	1,100	45	1,000
39	Work Station	1,100	46	1,000
40	Work Station	1,100	47	1,000
41	Work Station	1,100	48	1,000
42	Work Station	1,100	49	1,000
43	Work Station	1,100	50	1,000
44	Work Station	1,100	51	1,000
45	Work Station	1,100	52	1,000
46	Work Station	1,100	53	1,000
47	Work Station	1,100	54	1,000
48	Work Station	1,100	55	1,000
49	Work Station	1,100	56	1,000
50	Work Station	1,100	57	1,000
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55	Work Station	1,100	62	1,000
56	Work Station	1,100	63	1,000
57	Work Station	1,100	64	1,000
58	Work Station	1,100	65	1,000
59	Work Station	1,100	66	1,000
60	Work Station	1,100	67	1,000
61	Work Station	1,100	68	1,000
62	Work Station	1,100	69	1,000
63	Work Station	1,100	70	1,000
64	Work Station	1,100	71	1,000
65	Work Station	1,100	72	1,000
66	Work Station	1,100	73	1,000
67	Work Station	1,100	74	1,000
68	Work Station	1,100	75	1,000
69	Work Station	1,100	76	1,000
70	Work Station	1,100	77	1,000
71	Work Station	1,100	78	1,000
72	Work Station	1,100	79	1,000
73	Work Station	1,100	80	1,000
74	Work Station	1,100	81	1,000
75	Work Station	1,100	82	1,000
76	Work Station	1,100	83	1,000
77	Work Station	1,100	84	1,000
78	Work Station	1,100	85	1,000
79	Work Station	1,100	86	1,000
80	Work Station	1,100	87	1,000
81	Work Station	1,100	88	1,000
82	Work Station	1,100	89	1,000
83	Work Station	1,100	90	1,000
84	Work Station	1,100	91	1,000
85	Work Station	1,100	92	1,000
86	Work Station	1,100	93	1,000
87	Work Station	1,100	94	1,000
88	Work Station	1,100	95	1,000
89	Work Station	1,100	96	1,000
90	Work Station	1,100	97	1,000
91	Work Station	1,100	98	1,000
92	Work Station	1,100	99	1,000
93	Work Station	1,100	100	1,000
94	Work Station	1,100	101	1,000
95	Work Station	1,100	102	1,000
96	Work Station	1,100	103	1,000
97	Work Station	1,100	104	1,000
98	Work Station	1,100	105	1,000
99	Work Station	1,100	106	1,000
100	Work Station	1,100	107	1,000
101	Work Station	1,100	108	1,000
102	Work Station	1,100	109	1,000
103	Work Station	1,100	110	1,000
104	Work Station	1,100	111	1,000
105	Work Station	1,100	112	1,000
106	Work Station	1,100	113	1,000
107	Work Station	1,100	114	1,000
108	Work Station	1,100	115	1,000
109	Work Station	1,100	116	1,000
110	Work Station	1,100	117	1,000
111	Work Station	1,100	118	1,000
112	Work Station	1,100	119	1,000
113	Work Station	1,100	120	1,000
114	Work Station	1,100	121	1,000
115	Work Station	1,100	122	1,000
116	Work Station	1,100	123	1,000
117	Work Station	1,100	124	1,000
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119	Work Station	1,100	126	1,000
120	Work Station	1,100	127	1,000
121	Work Station	1,100	128	1,000
122	Work Station	1,100	129	1,000
123	Work Station	1,100	130	1,000
124	Work Station	1,100	131	1,000
125	Work Station	1,100	132	1,000
126	Work Station	1,100	133	1,000
127	Work Station	1,100	134	1,000
128	Work Station	1,100	135	1,000
129	Work Station	1,100	136	1,000
130	Work Station	1,100	137	1,000
131	Work Station	1,100	138	1,000
132	Work Station	1,100	139	1,000
133	Work Station	1,100	140	1,000
134	Work Station	1,100	141	1,000
135	Work Station	1,100	142	1,000
136	Work Station	1,100	143	1,000
137	Work Station	1,100	144	1,000
138	Work Station	1,100	145	1,000
139	Work Station	1,100	146	1,000
140	Work Station	1,100	147	1,000
141	Work Station	1,100	148	1,000
142	Work Station	1,100	149	1,000
143	Work Station	1,100	150	1,000
144	Work Station	1,100	151	1,000
145	Work Station	1,100	152	1,000
146	Work Station	1,100	153	1,000
147	Work Station	1,100	154	1,000
148	Work Station	1,100	155	1,000
149	Work Station	1,100	156	1,000
150	Work Station	1,100	157	1,000
151	Work Station	1,100	158	1,000
152	Work Station	1,100	159	1,000
153	Work Station	1,100	160	1,000
154	Work Station	1,100	161	1,000
155	Work Station	1,100	162	1,000
156	Work Station	1,100	163	1,000
157	Work Station	1,100	164	1,000
158	Work Station	1,100	165	1,000
159	Work Station	1,100	166	1,000
160	Work Station	1,100	167	1,000
161	Work Station	1,100	168	1,000
162	Work Station	1,100	169	1,000
163	Work Station	1,100	170	1,000
164	Work Station	1,100	171	1,000
165	Work Station	1,100	172	1,000
166	Work Station	1,100	173	1,000
167	Work Station	1,100	174	1,000
168	Work Station	1,100	175	1,000
169	Work Station	1,100	176	1,000
170	Work Station	1,100	177	1,000
171	Work Station	1,100	178	1,000
172	Work Station	1,100	179	1,000
173	Work Station	1,100	180	1,000
174	Work Station	1,100	181	1,000
175	Work Station	1,100	182	1,000
176	Work Station	1,100	183	1,000
177	Work Station	1,100	184	1,000
178	Work Station	1,100	185	1,000
179	Work Station	1,100	186	1,000
180	Work Station	1,100	187	1,000
181	Work Station	1,100	188	1,000
182	Work Station	1,100	189	1,000
183	Work Station	1,100	190	1,000
184	Work Station	1,100	191	1,000
185	Work Station	1,100	192	1,000
186	Work Station	1,100	193	1,000
187	Work Station	1,100	194	1,000
188	Work Station	1,100	195	1,000
189	Work Station	1,100	196	1,000
190	Work Station	1,100	197	1,000
191	Work Station	1,100	198	1,000
192	Work Station	1,100	199	1,000
193	Work Station	1,100	200	1,000





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POLLUTION CONTROL RESEARCH INSTITUTE

(A Govt. of India - UNDP/UNIDO Project)

BHARAT HEAVY ELECTRICALS LIMITED

RANIPUR, HARIDWAR (U.K.)-249403

(Recognised under Environment (Protection) Act, 1986)

TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2010 2011:1649

Date:08.02.2011

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/S Maruti Suzuki India Ltd., Manesar (Haryana)
2.	Work Order No.	:	10-0076-O-991
3.	Date of sampling	:	13.01.2011-14.01.2011
4.	Location of Sampling	:	Near Incinerator
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999 , NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method. FID, NDIR & Gas Detection System. IS-5182 (Part-9) , AAS, APHA -819, PM _{2.5} Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	81	100
2.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	47	60
3.	Sulphur Dioxide (SO ₂)	µg/m ³	5	80
4.	Nitrogen Dioxide (NO ₂)	µg/m ³	16	80
5.	Carbon Monoxide (CO)	mg/m ³	0.5	4
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Arsenic (As)	µg/m ³	BDL	6
8.	Nickel (Ni)	µg/m ³	BDL	20
9.	Ammonia (NH ₃)	µg/m ³	BDL	400
10.	Ozone (O ₃)	µg/m ³	35	180
11.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
12.	Total Hydrocarbons	ppm	6	-
13.	Non-Methane Hydrocarbons	ppm	2	-

BDL: Below Detectable Limit.

**National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov, 2009

Issued by

(Ambrish Goel)
Dy. GM (PCRD)

Checked by

(Bhoj Raj)
Sr. Manager (PCRI)

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(3) Samples will be disposed off after one month from the date of issue of Test Certificate

MARUTI SUZUKI INDIA LIMITED, GURGAON, HARYANA

Details of Green Belt - Manesar

Symbols	Description	No.s
	Total area of Power Plant in m ²	8500
	Green belt requirement as per EC (33%) in m ²	2805
	Total green area Maintained at MSIL in m ²	519261



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TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2010 2011:1649

Date:08.02.2011

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/S Maruti Suzuki India Ltd., Manesar (Haryana)
2.	Work Order No.	:	10-0076-O-991
3.	Date of sampling	:	13.01.2011-14.01.2011
4.	Location of Sampling	:	Near Incinerator
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System. IS-5182 (Part-9), AAS, APHA -819, PM _{2.5} Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	81	100
2.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	47	60
3.	Sulphur Dioxide (SO ₂)	µg/m ³	5	80
4.	Nitrogen Dioxide (NO ₂)	µg/m ³	16	80
5.	Carbon Monoxide (CO)	mg/m ³	0.5	4
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Arsenic (As)	µg/m ³	BDL	6
8.	Nickel (Ni)	µg/m ³	BDL	20
9.	Ammonia (NH ₃)	µg/m ³	BDL	400
10.	Ozone (O ₃)	µg/m ³	35	180
11.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
12.	Total Hydrocarbons	ppm	6	-
13.	Non-Methane Hydrocarbons	ppm	2	-

BDL: Below Detectable Limit.

**National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009

Issued by

(Ambrish Goel)
Dy. GM (PCRI)

Checked by

(Bhoj Raj)
Sr. Manager (PCRI)

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TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2010 2011:1652

Date:08.02.2011

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/S Maruti Suzuki India Ltd., Manesar (Haryana)
2.	Work Order No.	:	10-0076 O-991
3.	Date of sampling	:	13.01.2011-14.01.2011
4.	Location of Sampling	:	Near Security Gate No-1
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182 (Part-9), AAS, APHA -819, PM _{2.5} Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.I.E.L., Ranipur, Haridwar U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	66	100
2.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	38	60
3.	Sulphur Dioxide (SO ₂)	µg/m ³	3	80
4.	Nitrogen Dioxide (NO ₂)	µg/m ³	13	80
5.	Carbon Monoxide (CO)	mg/m ³	0.4	4
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Arsenic (As)	µg/m ³	BDL	6
8.	Nickel (Ni)	µg/m ³	0.01	20
9.	Ammonia (NH ₃)	µg/m ³	BDL	400
10.	Ozone (O ₃)	ppm	23	180
11.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
12.	Total Hydrocarbons	ppm	4	-
13.	Non-Methane Hydrocarbons	ppm	2	-

BDL: Below Detectable Limit.

**National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009

Issued by

(Anilbish Goel)
Dy. GM (PCRI)

Checked by

(Bhoj Raj)
Sr. Manager (PCRI)

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BHARAT HEAVY ELECTRICALS LIMITED

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TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2010-2011:1650

Date:08.02.2011

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/S Maruti Suzuki India Ltd., Manesar (Haryana)
2.	Work Order No.	:	10-0076-O-991
3.	Date of sampling	:	13.01.2011-14.01.2011
4.	Location of Sampling	:	Near Security Gate No.-3
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999 , NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182 (Part-9) , AAS, APHA -819, PM _{2.5} Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit ^{**}
1.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	78	100
2.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	42	60
3.	Sulphur Dioxide (SO ₂)	µg/m ³	4	80
4.	Nitrogen Dioxide (NO ₂)	µg/m ³	15	80
5.	Carbon Monoxide (CO)	mg/m ³	0.4	4
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Arsenic (As)	µg/m ³	BDL	6
8.	Nickel (Ni)	µg/m ³	0.01	20
9.	Ammonia (NH ₃)	µg/m ³	BDL	400
10.	Ozone (O ₃)	µg/m ³	31	180
11.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
12.	Total Hydrocarbons	ppm	4	-
13.	Non-Methane Hydrocarbons	ppm	2	-

BDL: Below Detectable Limit.

**National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009

Issued by

(Ambrish Goel)
Dy. GM (PCRI)

Checked by

(Bhoj Raj)
Sr. Manager (PCRI)

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TEST REPORT

AMBIENT AIR MONITORING

Lab. Ref.:PCRI: Air & Noise:2010-2011: 1651

Date:08.02.2011

A. GENERAL INFORMATION:

1.	Name and address of Plant	:	M/S Maruti Suzuki India Ltd., Manesar (Haryana)
2.	Work Order No.	:	10-0076-O-991
3.	Date of sampling	:	13.01.2011-14.01.2011
4.	Location of Sampling	:	Near Sewage Collection Tank
5.	Method of Sampling	:	IS:5182, Part-II-2001, IV-1999, NDIR, Jacob & Hochheiser Modified (Na-Arsenite) Method, FID, NDIR & Gas Detection System, IS-5182 (Part-9) . AAS, APHA -819, PM _{2.5} Sampler
6.	Duration of Sampling	:	24 Hours
7.	Sample collection by	:	PCRI, B.H.E.L., Ranipur, Haridwar-U.K.

B. RESULTS OF AMBIENT AIR MONITORING:

Sl. No.	Parameter	Unit	Obtained Value	Allowable Limit**
1.	Particulate Matter less than 10 µm or PM ₁₀	µg/m ³	70	100
2.	Particulate Matter less than 2.5 µm or PM _{2.5}	µg/m ³	39	60
3.	Sulphur Dioxide (SO ₂)	µg/m ³	4	80
4.	Nitrogen Dioxide (NO ₂)	µg/m ³	23	80
5.	Carbon Monoxide (CO)	mg/m ³	0.7	4
6.	Lead (Pb)	µg/m ³	BDL	1
7.	Arsenic (As)	µg/m ³	BDL	6
8.	Nickel (Ni)	µg/m ³	BDL	20
9.	Ammonia (NH ₃)	µg/m ³	BDL	400
10.	Ozone (O ₃)	ppm	28	180
11.	Benzene (C ₆ H ₆)	µg/m ³	BDL	5
12.	Total Hydrocarbons	ppm	5	-
13.	Non-Methane Hydrocarbons	ppm	3	-

BDL: Below Detectable Limit,

** : National Ambient Air Quality Standards as per CPCB Notification N. Delhi, the 18 Nov. 2009

Issued by

(Ambish Goel)

Dy. GM (PCRI)

Checked by

(Bhoj Raj)

Sr. Manager (PCRI)

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MARUTI SUZUKI INDIA LIMITED, MANESAR, HARYANA

Report on Environment Management Cell and Environment Lab

Environment Management Cell

SI No	Name	Designation	Responsibility
1	Bineet Arora	DO - EMM	Operation and Maintenance of Gas Turbine, Boiler, Incinerator, Hazardous Waste Pit.
2	Kalyan sunder	DO - EMU-M	Operation and Maintenance of Water / Effluent Treatment Plant, Environmental Lab.
3	Deepak Jain	DGM - EGM	Implementation of ISO 14001, Legal Compliance, Environmental Monitoring
4	Senthil Kumar	Manager- EGM	
5	Kishore veerabhotla	Assistant manager	