

OPG POWER GENERATION PVT. LTD.
CIN : U40109TN2005PTC055442

OPGPG: EHS /2017-18/828

15-December-2017

The Joint Director

Govt. of India
Ministry of Environment and Forests
Regional Office (Southern Zone)
Kendriya Sadan, 4th Floor, E & F Wings
Koramangala,
Bangalore 560 034

Sir,

**Sub: Compliance Status, Bore Well Water Analysis and Ambient Air Quality Reports –
Half Yearly Return – Reg.**

Period: April 2017 to September 2017

Ref: No.J-13012/111/2009-IA.II (T)

Ref: MoEF. Lr. No. J-13011/81/2007-IA.II (T), Dated: 31.03.2008

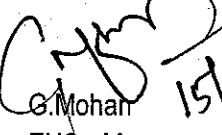
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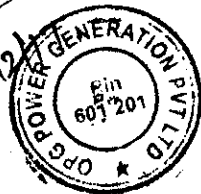
We herewith submit the half yearly Bore well water analysis report, Ambient Air Quality Monitoring report, Piezometer reading report and Compliance status report for the period from April 2017 to September 2017.

Thanking you

Yours faithfully,

For **OPG POWER GENERATION PRIVATE LIMITED**


G. Mohan
EHS - Manager



Encl.:

1. Environmental Clearance No.J-13012/111/2009-IA.II (T) General Conditions – Compliance status as on December 2017
2. Environmental Clearance No.J-13012/111/2009-IA.II (T) Special Conditions – Compliance status as on December 2017

New No. 6, Sardar Patel Road, Guindy, Chennai - 600 032.

Phone : +91 44 4291 1222, Fax : +91 44 4291 1209

3. Environmental Clearance No.J-13012/111/2009-IA.II (T) Amendment for the augmentation from 160MW to 180MW Conditions – Compliance status as on December 2017
4. MoEF. Lr. No. J-13011/81/2007-IA.II (T), Dated: 31.03.2008 Specific Conditions – Compliance status as on December 2017.
5. Monthly Ash utilization Report - April 2017 to September 2017.
6. Bore well water Analysis report
7. TNPCB analysis reports for Sewage effluent, Bore well water, Industrial effluent (Recycled)
8. TNPCB analysis reports on AAQ and Stack
9. Third party analysis reports on AAQ and Stack
10. Report on control of Spontaneous combustion of coal
11. Fly Ash customer list
12. LDO storage License copy
13. Copy of Annual Environmental Statement for the Financial Year 2016-17 in form 5
14. Noise Level Report

10. Environmental Clearance No. J-13012/111/2009-IA.II (T)

CC: The District Environmental Engineer, Thiruvallore without Encl.

COMPLIANCE STATUS

as on December 2017

PART- III

Subject: - Environmental Clearance – 2 x77MW reg.

Reference: - MoEF. Lr. No. J-13011/81/2007-IA.II(T), Dated: 31.03.2008

A. SPECIFIC CONDITION:

		Compliance Status Update
S. No.	Stipulated Conditions	Compliance Status As on 15 th December 2017
i.	The total land requirement for the project shall be restricted to 79.105 acres.	The land area utilized for power plant is 73.435 acres.
ii.	Sulphur and ash contents in the coal to be used in the project shall not exceed 1.2% and 15% respectively.	The Indonesian coal used in this plant is having a maximum of 0.3% Sulphur and 10% Ash respectively.
iii.	Two stacks with continuous online monitoring equipments for SO ₂ , NO _x and particulate matter shall be provided. The height of the stacks shall be as per the standards prescribed under the Environment (protection) Rules in this regards or 140 m whichever is more. Exit velocity of flue gases shall not be less than 20.14 m/sec.	1-Common stack with online continuous monitoring system for SO ₂ , NO _x and SPM was installed. The height of the chimney is 140m and the exit velocity of flue gases is more than 20.14 m/s, which is meeting the requirement of the said Rules. . The online stack monitor has been linked with TNPCB CARE AIR centre for real time data transfer, LED display for stack emission data has been fixed in the main gate of the plant.
iv.	High efficiency Electrostatic Precipitator (ESPs) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm ³ .	1. 99.9% Efficiency ESP has been installed to ensure the PM level is below 50 mg/Nm ³ . 2. Bag filters are installed in all the transfer towers of Coal. 3. Online data for Sox/NO _x /SPM is being uploaded to TNPCB CARE AIR center
v.	Coal transportation will be done by rail up to Gummidipoondi Railway station and thereafter by road.	Coal will be transported from Chennai port to Gummidipoondi by Road since the rail transport was not feasible by railway. Clearance given by MoEF at the 54th meeting based on railways feedback.
vi.	Fly ash shall be collected in dry form and storage facility (silos) shall be provided. 100 % fly ash utilization shall be ensured from day one. Unutilized bottom ash shall be disposed off in the ash pond in conventional slurry mode.	Separate Silos are provided for fly ash and bottom ash. The fly ash and bottom ash are collected in dry form and are entirely used in cement plants and brick making plants respectively. The reports are enclosed.

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S. No.	Stipulated Conditions	Compliance Status As on 15 th December 2017
vii.	Ash pond shall be lined with LDPE lining. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached.	Ash dyke was provided with three layers of LPDE lining. 100% ash is getting utilised in Cement Plants/Brick making plants. The reports are enclosed.
viii.	Adequate dust extraction system such as cyclones / bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	Yes water sprinkler / and 11 Bag filters at all transfer points have been provided in the coal storage /handling area to control the fugitive emission.
ix.	Water requirement shall not exceed 4.3m ³ /hr.	Clearance obtained from TNPCB for using ground water and the monthly reports are being submitted. Complied with the condition.

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Environmental Clearance No: J-13012/111/2009-IA.II (T)

A- General Condition:

Compliance Status Update

S. No.	Stipulated Conditions	Compliance Status As on 15 th December 2017
1.	Adequate safety measures shall be provided in the plant area to check /minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry.	Documents posted in our official website. The points are well taken care and we are having closed storage area with adequate compaction and spraying facility to minimize spontaneous combustion of coal.
2.	Storage facilities for auxiliary liquid fuel such as LDO and / HFO /LSHS shall be made in the plant area in consultation with Departments of Explosives, Nagpur. Sulphur content in the liquid fuel will not exceed 0.5% Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.	We are using only LDO procuring from IOC. The Storage License copy is enclosed.
3.	Regular monitoring of ground water level shall be carried out by establishing a network of existing wells and constructing new piezometers Monitoring around the ash pond area shall be carried out particularly for heavy metals (Hg , Cr , As , Pb) and records maintained and submitted to the Regional Office of this Ministry The data so obtained should be compared with the baseline data so as to ensure that the ground water quality is not adversely affected due to the project.	Regular monitoring of ground water is being carried out through TNPCB and the reports are enclosed.
4.	Monitoring surface water quantity and quality shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall be undertaken.	We are neither using any surface water for the unit nor discharging any liquid effluent from the plant. Bore well water analyzing reports are enclosed. The result reveals that the ground water quality is improving.

S. No.	Stipulated Conditions	Compliance Status As on 15 th December 2017
5.	First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	Both the First Aid and Sanitation arrangement have been made for drivers, contract workers.
6.	Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 75 dBA. For people working in the high noise area, requisite personal protective equipment like earplugs, ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc. shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non-noisy/less noisy areas.	<p>The followings are the measures taken to reduce the noise level</p> <p>All the noise generating equipment's were installed with silencers/anti-vibrating pads</p> <p>Proper PPE's are issued to the concerned and enforcing to wear.</p> <p>Audiometric and health checkup records are maintained in standard forms.</p>
7.	Regular monitoring of ambient air ground level concentration of SO ₂ , NO _x , PM 2.5 & PM 10 and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional Office of this Ministry. The data shall also be put on the website of the company.	<p>2 AAQ monitoring stations were installed and the data is uploaded to the Care Air Centre.</p> <p>Annual AAQ monitoring by TNPCB or Board's approved third party is being carried out and reports are submitted to TNPCB.</p> <p>Copy of the report is enclosed.</p>
8.	Provision shall be made for the housing of construction labor (as applicable) within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	<p>100 rooms were constructed for construction labor inside the premises with basic amenities.</p> <p>After completion of the project, same was removed.</p>

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S. No.	Stipulated Conditions	Compliance Status As on 15 th December 2017
9.	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 date of this clearance 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 Forests at http://envfor.nic.in .	Documents posted in our official website. Copy enclosed for ref.
10.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat , Zila Parisad / Municipal Corporation , urban local Body and the Local NGO , if any , from whom suggestions /representations ,if any , received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	The same has been submitted to the concerned panchayat.
11.	An Environment Cell shall be created at the project site itself and shall be headed by an officer of appropriate seniority and qualification. It shall be ensured that the head of the Cell shall directly report to the head of the organization.	An Environment Cell with the reporting To Central committee is being functional.
12.	The proponent shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional office of MOEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM , RSPM (PM2.5 & PM 10), SO ₂ , NO _x (ambient levels as well as stack emissions)shall be displayed at a convenient location near the main gate of the company in the public domain.	The Stack emission and AAQ results are uploaded in the web site and being displayed at the gate as per guideline.

S. No.	Stipulated Conditions	Compliance Status As on 15 TH December 2017
13.	The environment statement for each financial year ending 31 st March in Form V as in mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of clearance conditions and shall also be sent to the respective Regional Officers of the Ministry by e- mail.	Form V is being submitted regularly to the Tamil Nadu Pollution Control Board. Latest Copy is enclosed.
14.	The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Regional Ministry of Environment and Forests, its Bangalore Regional Office, Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the status of the compliance of the environment of the environmental clearance conditions of their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, Ministry of Environment and Forests.	A half yearly report which comprises of the following is being sent to the Regional Ministry Office- <ol style="list-style-type: none"> 1. AAQ results 2. Ground water analysis results 3. Noise level results 4. Ash disposal details
15.	Regional Office of the Ministry of Environment & Forests will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental impact Assessment Report and Environmental Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring .Project proponent will up – load the compliance status in their website and up-date the same from time to time at least six monthly basis. Criteria pollutants levels including NOx (from stack & ambient air) shall be displayed at the main gate of the power plant.	The Stack emitting levels are being displayed at the main gate and the reports are being submitted to TNPCB/MOEF as per directions.

AP

S. No.	Stipulated Conditions	Compliance Status As on 15 th December 2017
16.	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 another purposes and year –wise expenditure should be reported to the Ministry.	The guidelines and directions are strictly followed. The expenditure done in this review period of April 2017 to Sep 2017 is Rs. 64.4 lakhs.
17.	The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.	The financial closure details for the year 2016-2017 have been submitted to the ministry.
18.	Full cooperation shall be extended to the Scientists /Officers from the Ministry /regional Office of the Ministry of Bangalore / CPCB /SPCB who would be monitoring the compliance of environmental status	The guidelines and instructions are being followed.

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Environmental Clearance No: J-13012/111/2009-IA.II (T)

A- Special Condition:

Compliance Status Update

S. No.	Stipulated Conditions	Compliance Status As on 15 th December 2017
1.	Vision document specifying prospective plan for the site shall be formulated and submitted to the Ministry within six month	Documents posted in our official website
2.	The project proponent shall take up the matter for transportation of coal by rail with the Railways. Progress made in this regard shall be submitted to the Registration Office of the Ministry from time to time.	Documents posted in our official website
3.	High Efficiency Electrostatic Precipitators (ESPS) Shall be installed to ensure that particulate emission does not exceed 50 mg/Nm ³ . Adequate dust extraction system such as cyclones/ bag filters and water spray system in dusty areas such as cyclones/ bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	99.9% Efficiency ESP has Been installed to ensure the PM level below 50 mg/Nm ³ . Bag filters are installed In all the transfer towers to control dust emission. Online data for SO _x /NO _x /SPM is being uploaded to TNPCB website.
4.	Sulphur and ash contents in the coal to be used in the project shall not exceed 0.8% and 25% respectively at any given time. In case of variation of coal quality at any point of time fresh reference shall be made to MoEF for suitable amendments to environmental clearance condition wherever necessary.	We are importing coal from Indonesia which has the maximum sulphur % of 0.15 and indigenous coal is having the maximum sulphur % of 0.4. We are ensuring that both the Sulphur and Ash content shall not exceed the prescribed norms. Documents posted in our official website

SPH.

S. No.	Stipulated Conditions	Compliance Status As on 15 th December 2017
5.	Stacks of 100 m and 120 m height respectively shall be installed and provided with continuous online monitoring equipment for SO _x , NO _x and PM _{2.5} and PM 10. Exit velocity of flue gases shall not be less than 22 m/sec. Mercury emissions from stack may also be monitored on periodic basis.	Stacks of 100m, 120m height respectively has been installed. Continuous online monitoring equipment for 1x80 MW and 1x180MW was installed and the data is being uploaded to TNPCB website.. Exit velocity is maintained always above 22 m/s.
6.	Existing de-generated water bodies (if any) in the study area shall be regenerated at the project proponents expenses in consultation with the state Govt.	We have conducted a Hydrogeological study of our own with a third party. Their recommendations are being implemented.
7.	Water requirement for running the plant to begin with shall be met from ground water after obtaining approval of the competent authority. However, the project proponent shall use harvested rain water in the long run. Air cooled condenser shall be installed for condensate cooling.	Ground water approval has been Obtained from SGWB for quantum of 1350 KLD. Harvested rainwater is mainly utilised for the process and Air cooled condensers are installed as per instruction.
8.	Hydro-geological status (quality and quantity) of ground water shall be reviewed annually from and institute / organization of repute to assess impact of surface water and ground regime (especially around ash dyke). In case and deterioration is observed specific mitigation measures shall be undertaken and reports / data of water quality monitored regulation and maintained shall be submitted to the Regional Office of the ministry.	The reports are posted in our official website. There is no deterioration in the ground water quality and the results are annexed.
9.	Source of water for meeting the requirement during lean season shall be specified and submitted to the Regional office of the ministry within three months.	Document posted in our official website. Harvested rainwater is used during the lean period.

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EC Conditions:

J-13012/111/2009-IA.II (T)

Amendment for the augmentation from 160 to 180 MW

		Compliance Status Update
S. No.	Stipulated Conditions	Compliance Status As on 15th December 2017
1.	The matter for transportation of coal by rail shall be expedited. The progress made in this regard shall be submitted to the Ministry and its R.O from time to time	The detailed report from railways was submitted to the Ministry. The approval for the railway siding and the rail line up the plant includes the Rail over Road is in place. The land acquisition is in progress.
2.	A long term study of radio activity and heavy metals contents on coal to be used shall be carried out through a reputed institute. Thereafter, mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.	The detailed Coal and Ash analysis are being carried out by third party. Report copy is appended.
3.	Harnessing solar power within the premises of the plant particularly at available roof tops shall be undertaken and status of implementation shall be submitted periodically to the Regional Office of the Ministry.	Conversion of street lights to LED lamps is in progress. Conversion to solar base study and implementation is in progress.
4.	Fugitive emissions shall be controlled to prevent impact on agricultural or non- agricultural land.	Fogging and dust extraction systems are installed at all the probable locations.
5.	Fly ash shall not be used for agricultural purpose. No mine void filling will be undertaken as an option for ash utilization without adequate lining of mine with suitable media such that no leachate shall take place at any point of time. In case, the option of mine void filling is to be adopted, prior detailed study of soil characteristics of the mine area shall be undertaken from an institute of repute and adequate clay lining shall be ascertained by the State Pollution Control Board and implementation done in close co-ordination with the State Pollution Control Board.	Noted and complied with. 100% Fly Ash and Bottom Ash is being utilised in Cement plants/Brick making plants and road projects. The report is annexed.

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S. No.	Stipulated Conditions	Compliance Status As on 15 th December 2017
6.	Green belt shall also be developed around the Ash Pond over and above the Green Belt around the plant boundary.	Noted and complied with. 30% green belt coverage as per direction was completed and nurturing is in progress.
7.	The project proponent shall formulate a well laid Corporate Environment Policy and identify and designate responsible officers at all levels of its hierarchy for ensuring adherence to the policy and compliance with the conditions stipulated in this clearance letter and other applicable environmental laws and regulations.	Environment Management System with Corporate is in place. The plant is certified for ISO 14001 Environment Management System and OHSAS 18001 Occupational Health and Safety management System.

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Ash utilization reports

April 2017 to Dec 2017



MONTHLY FLY ASH AND BOTTOM ASH GENERATION,
UTILIZATION DETAILS

April 17

NAME AND ADDRESS OF THE SUPPLIER : OPG POWER GENERATION PRIVATE LIMITED
MADHARPAKKAM ROAD, PERIYA OBULAPURAM
GUMMIDIPOONDI 601 201

Accumulated quantity of ash at the start of the month

Fly Ash

1. Kept at Ash Dyke : NIL
2. Kept at Silo : NIL

Bottom Ash

1. Kept at Ash Silo : NIL

ASH GENERATION

1	Quantity of Blended coal used during this Month	1,50,544 MT
2	Average ash content in the coal	12 - 15 %
3	Generation of Fly ash	19,120 MT
4	Generation of Bottom Ash	3,824 MT

ASH DISPOSAL

Fly Ash

1	To Cement Industries	19,120 MT
2	To Brick Industries	NIL
3	Total disposal of Fly ash	19,120 MT

Bottom Ash

1	To Brick Industries	3,824 MT
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ASH ACCUMULATION

1	Fly Ash Kept in Ash dyke	NIL
2	Fly Ash Kept in Silos	NIL
3	% of utilization	100%
4	Bottom Ash kept in Silos	NIL
5	% of utilization	100%

Fly ash sent to the following Industries

1. Abhinaya agency - Madhavaram
2. Sri Balaji Agencies - A.S.Pettai
3. Ultra Tech Cements Ltd - Arakonam
4. THirumalai Agencies - Madhavaram
5. Pugaimathi & Co - Mettur Dam
6. Sri Praveen Enterprises - Madhavaram
7. Vasantham Enterprises - Gummudiipoondi
8. OM Muruga - Gummudiipoondi
7. The India cements Ltd - Vallur
8. P.M Fly ash Bricks - S.R.Kandigai

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MONTHLY FLY ASH AND BOTTOM ASH GENERATION,
UTILIZATION DETAILS

May 17

NAME AND ADDRESS OF THE SUPPLIER : OPG POWER GENERATION PRIVATE LIMITED
MADHARPAKKAM ROAD, PERIYA OBULAPURAM
GUMMIDIPOONDI 601 201

Accumulated quantity of ash at the start of the month

Fly Ash

1. Kept at Ash Dyke : NIL
2. Kept at Silo : NIL

Bottom Ash

1. Kept at Ash Silo : NIL

ASH GENERATION

1	Quantity of Blended coal used during this Month	1,36,784 MT
2	Average ash content in the coal	11.3 %
3	Generation of Fly ash	12,887 MT
4	Generation of Bottom Ash	2,577 MT

ASH DISPOSAL

Fly Ash

1	To Cement Industries	12,887 MT
2	To Brick Industries	NIL
3	Total disposal of Fly ash	12,887 MT

Bottom Ash

1	To Brick Industries	2,577 MT
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ASH ACCUMULATION

1	Fly Ash Kept in Ash dyke	NIL
2	Fly Ash Kept in Silos	NIL
3	% of utilization	100%
4	Bottom Ash kept in Silos	NIL
5	% of utilization	100%

Fly ash sent to the following Industries

1. Abhinaya agency - Madhavaram
2. Sri Balaji Agencies - A.S.Pettai
3. Ultra Tech Cements Ltd - Arakonam
4. THirumalai Agencies - Madhavaram
5. Pugalmathi & Co - Mettur Dam
6. Sri Praveen Enterprises - Madhavaram
7. Vasantham Enterprises - Gumudipoondi
8. OM Muruga - Gumudipoondi
9. The India cements Ltd - Vallur
10. P.M Fly ash Bricks - S.R.Kandigai

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MONTHLY FLY ASH AND BOTTOM ASH GENERATION,
UTILIZATION DETAILS

June 17

NAME AND ADDRESS OF THE SUPPLIER :

OPG POWER GENERATION PRIVATE LIMITED
MADHARPAKKAM ROAD, PERIYA OBULAPURAM
GUMMIDIPOONDI 601 201

Accumulated quantity of ash at the start of the month

Fly Ash

1. Kept at Ash Dyke : NIL
2. Kept at Silo : NIL

Bottom Ash

1. Kept at Ash Silo : NIL

ASH GENERATION

1	Quantity of Blended coal used during this Month	1,32,406.8 MT
2	Average ash content in the coal	12.3 %
3	Generation of Fly ash	13,598.74 MT
4	Generation of Bottom Ash	2,719.74 MT

ASH DISPOSAL

Fly Ash

1	To Cement Industries	13,598.74 MT
2	To Brick Industries	NIL
3	Total disposal of Fly ash	13,598.74 MT

Bottom Ash

1	To Brick Industries	2,719.74 MT
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ASH ACCUMULATION

1	Fly Ash Kept in Ash dyke	NIL
2	Fly Ash Kept in Silos	NIL
3	% of utilization	100%
4	Bottom Ash kept in Silos	NIL
5	% of utilization	100%

Fly ash sent to the following Industries

1. Abhinaya agency - Madhavaram
2. Sri Balaji Agencies - A.S.Pettai
3. Ultra Tech Cements Ltd - Arakonam
4. Thirumalai Agencies - Madhavaram
5. Pugalmathi & Co - Mettur Dam
6. Sri Praveen Enterprises - Madhavaram
7. Vasantham Enterprises - Gummudipoondi
8. OM Muruga - Gummudipoondi
9. The India cements Ltd - Vallur
10. P.M Fly ash Bricks - S.R.Kandigai

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MONTHLY FLY ASH AND BOTTOM ASH GENERATION,
UTILIZATION DETAILS

July 17

NAME AND ADDRESS OF THE SUPPLIER : OPG POWER GENERATION PRIVATE LIMITED
MADHARPAKKAM ROAD, PERIYA OBULAPURAM
GUMMIDIPOONDI 601 201

Accumulated quantity of ash at the start of the month

Fly Ash

1. Kept at Ash Dyke : NIL
2. Kept at Silo : NIL

Bottom Ash

1. Kept at Ash Silo : NIL

ASH GENERATION

1	Quantity of Blended coal used during this Month	1,18,041.8 MT
2	Average ash content in the coal	9.9 %
3	Generation of Fly ash	9439.06 MT
4	Generation of Bottom Ash	2359.76 MT

ASH DISPOSAL

Fly Ash

1	To Cement Industries	9439.06 MT
2	To Brick Industries	NIL
3	Total disposal of Fly ash	9439.06 MT

Bottom Ash

1	To Brick Industries	2359.76 MT
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ASH ACCUMULATION

1	Fly Ash Kept in Ash dyke	NIL
2	Fly Ash Kept in Silos	NIL
3	% of utilization	100%
4	Bottom Ash kept in Silos	NIL
5	% of utilization	100%

Fly ash sent to the following Industries

1. Abhinaya agency - Madhavaram
2. Sri Balaji Agencies - A.S.Pettai
3. Ultra Tech Cements Ltd - Arakonam
4. THirumalai Agencies - Madhavaram
5. Pugalmathi & Co - Mettur Dam
6. Sri Praveen Enterprises - Madhavaram
7. Vasantham Enterprises - Gummudipoondi
8. OM Muruga - Gummudipoondi
9. The India cements Ltd - Vallur
10. P.M Fly ash Bricks - S.R.Kandigai

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MONTHLY FLY ASH AND BOTTOM ASH GENERATION,
UTILIZATION DETAILS

Aug 17

NAME AND ADDRESS OF THE SUPPLIER : OPG POWER GENERATION PRIVATE LIMITED
MADHARPAKKAM ROAD, PERIYA OBULAPURAM
GUMMIDIPOONDI 601 201

Accumulated quantity of ash at the start of the month
Fly Ash

1. Kept at Ash Dyke : NIL
2. Kept at Silo : NIL

Bottom Ash

1. Kept at Ash Silo : NIL

ASH GENERATION

1	Quantity of Blended coal used during this Month	1,27,391.25 MT
2	Average ash content in the coal	4.8 %
3	Generation of Fly ash	5063.6 MT
4	Generation of Bottom Ash	1265.9 MT

ASH DISPOSAL

Fly Ash

1	To Cement Industries	5063.6 MT
2	To Brick Industries	NIL
3	Total disposal of Fly ash	5063.6 MT

Bottom Ash

1	To Brick Industries	1265.9 MT
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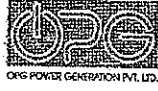
ASH ACCUMULATION

1	Fly Ash Kept in Ash dyke	NIL
2	Fly Ash Kept in Silos	NIL
3	% of utilization	100%
4	Bottom Ash kept in Silos	NIL
5	% of utilization	100%

Fly ash sent to the following Industries

1. Abhinaya agency - Madhavaram
2. Sri Balaji Agencies - A.S.Pettai
3. Ultra Tech Cements Ltd - Arakonam
4. Thirumalai Agencies - Madhavaram
5. Pugalmathi & Co - Mettur Dam
6. Sri Praveen Enterprises - Madhavaram
7. Vasantham Enterprises - Gummudipoondi
8. OM Muruga - Gummudipoondi
9. The India cements Ltd - Vallur
10. P.M Fly ash Bricks - S.R.Kandigai

Sh.



MONTHLY FLY ASH AND BOTTOM ASH GENERATION,
UTILIZATION DETAILS

Sep 17

NAME AND ADDRESS OF THE SUPPLIER

OPG POWER GENERATION PRIVATE LIMITED
MADHARPAKKAM ROAD, PERIYA OBULAPURAM
GUMMIDIPOONDI 601 201

Accumulated quantity of ash at the start of the month
Fly Ash

1. Kept at Ash Dyke : NIL
2. Kept at Silo : NIL

Bottom Ash

1. Kept at Ash Silo : NIL

ASH GENERATION

1	Quantity of Blended coal used during this Month	1,50,456.53 MT
2	Average ash content in the coal	7.7 %
3	Generation of Fly ash	9241.25 MT
4	Generation of Bottom Ash	2310.31 MT

ASH DISPOSAL

Fly Ash

1	To Cement Industries	9241.25 MT
2	To Brick Industries	NIL
3	Total disposal of Fly ash	9241.25 MT

Bottom Ash

1	To Brick Industries	2310.31 MT
---	---------------------	------------

ASH ACCUMULATION

1	Fly Ash Kept in Ash dyke	NIL
2	Fly Ash Kept in Silos	NIL
3	% of utilization	100%
4	Bottom Ash kept in Silos	NIL
5	% of utilization	100%

Fly ash sent to the following Industries

1. Abhinaya agency - Madhavaram
2. Sri Balaji Agencies - A.S.Pettai
3. Ultra Tech Cements Ltd - Arakonam
4. Thirumalai Agencies - Madhavaram
5. Pugaimathi & Co - Mettur Dam
6. Sri Praveen Enterprises - Madhavaram
7. Vasantham Enterprises - Gummudipoondi
8. OM Muruga - Gummudipoondi
9. The India cements Ltd - Vallur
10. P.M Fly ash Bricks - S.R.Kandigai

Bore well Analysis reports

April 2017 to Dec 2017



BORE WELL WATER ANALYSIS

APRIL- 2017

BORE WELL WATER ANALYSIS -APRIL 2017																			
Sl. No.	ANALYSIS	As	Unit	PHASE - I						PHASE - II									
				BW 1	BW 2	BW 3	BW 4	BW 5	BW 6	BW1	BW2	BW3	BW4	BW5	BW6	BW7	BW8	BW9	BW10
1	pH	-	-	7.20	7.52	7.56	7.60	7.58	7.80	7.52	7.30	7.58	7.80	7.80	Not in use	7.80	7.40	7.54	7.25
2	Electrical Conductivity	-	µs/Cm	1200	1355	1400	760	720	1128	650	720	865	810	820		760	822	760	899
4	Total Hardness	CaCo3	ppm	540	650	580	380	420	380	210	300	480	420	520		450	380	722	380
5	Calcium Hardness	CaCo3	ppm	250	210	260	220	260	210	140	165	310	260	330		250	250	266	260
6	Magnesium Hardness	CaCo3	ppm	290	440	320	160	160	170	84	135	260	160	190		190	110	456	120
7	Chlorides	Cl	ppm	160	260	80	45	120	112	62	68	168	110	72		81	99	98	86
8	Sulphates	So4	ppm	22	44	45	35	28	24	45	15	40	42	28		82	32	32	28
3	Silica	SiO2	ppm	44	49	56	52	56	42	25	45	38	45	42		46	46	45	46

MAY -2017

BORE WELL WATER ANALYSIS -MAY 2017																			
Sl. No.	ANALYSIS	As	Unit	PHASE - I						PHASE - II									
				BW 1	BW 2	BW 3	BW 4	BW 5	BW 6	BW1	BW2	BW3	BW4	BW5	BW6	BW7	BW8	BW9	BW10
1	pH	-	-	7.30	7.50	7.60	7.48	7.38	7.60	7.6	7.28	7.56	7.58	7.50	Not in use	7.68	7.30	7.40	7.20
2	Electrical Conductivity	-	µs/Cm	1422	1468	1268	800	720	1140	622	680	755	755	788		810	808	799	758
4	Total Hardness	CaCo3	ppm	560	642	560	400	500	420	260	320	480	420	466		720	400	360	400
5	Calcium Hardness	CaCo3	ppm	300	260	210	180	310	290	180	211	320	266	180		530	250	200	210
6	Magnesium Hardness	CaCo3	ppm	260	382	350	220	190	130	80	109	160	154	286		190	150	160	190
7	Chlorides	Cl	ppm	166	222	120	100	68	120	70	72	74	120	68		77	99	98	84
8	Sulphates	So4	ppm	26	46	38	415	35	45	36	34	38	42	28		73	29	29	27
3	Silica	SiO2	ppm	45	50	52	51	52	42	26	26	24	42	44		46	45	40	48

OPG



JUNE -2017

BORE WELL WATER ANALYSIS - JUNE 2017																			
Sl. No.	ANALYSIS	As	Unit	PHASE-I						PHASE-II									
				BW 1	BW 2	BW 3	BW 4	BW 5	BW 6	BW1	BW2	BW3	BW4	BW5	BW6	BW7	BW8	BW9	BW10
1	pH	-	-	7.48	7.50	7.20	7.50	7.48	7.50	7.2	7.60	7.50	7.20	7.50	Not in use	7.56	7.56	7.38	7.56
2	Electrical Conductivity	-	µs/Cm	1366	1566	1168	640	777	766	1400	708	1208	1200	810		755	766	720	686
3	Total Hardness	CaCo3	ppm	480	450	480	320	340	355	450	320	468	433	460		350	385	345	400
4	Calcium Hardness	CaCo3	ppm	210	168	220	168	210	168	222	168	220	240	168		210	180	220	260
5	Magnesium Hardness	CaCo3	ppm	270	292	260	152	130	187	228	152	248	193	292		140	205	125	140
6	Chlorides	Cl	ppm	117	167	103	21	43	71	160	43	124	85	53		46	67	82	82
7	Sulphates	So4	ppm	59	55	60	44	54	49	54	45	55	53	54		34	43	46	43
8	Silica	SiO2	ppm	90	88	98	86	83	91	135	91	80	110	101		98	89	84	87

JULY -2017

BORE WELL WATER ANALYSIS - JULY 2017																			
Sl. No.	ANALYSIS	As	Unit	PHASE-I						PHASE-II									
				BW 1	BW 2	BW 3	BW 4	BW 5	BW 6	BW1	BW2	BW3	BW4	BW5	BW6	BW7	BW8	BW9	BW10
1	pH	-	-	7.38	7.41	7.43	7.53	7.50	7.45	8.14	7.15	7.47	7.24	7.44	Not in use	7.40	7.33	7.29	7.44
2	Electrical Conductivity	-	µs/Cm	1209	1338	1200	640	722	755	1322	610	1280	1058	766		709	676	808	917
3	Total Hardness	CaCo3	ppm	460	430	450	280	325	355	500	265	450	390	360		350	385	345	400
4	Calcium Hardness	CaCo3	ppm	170	165	260	170	185	160	260	150	195	230	175		190	205	165	210
6	Magnesium Hardness	CaCo3	ppm	260	265	190	110	140	195	240	115	255	160	185		160	180	180	190
6	Chlorides	Cl	ppm	117	167	103	21	43	71	160	43	124	85	53		46	67	82	82
7	Sulphates	So4	ppm	59	65	60	44	54	49	74	45	65	63	54		34	43	66	43
8	Silica	SiO2	ppm	68	78	66	44	44	45	45	44	42	40	40		46	42	46	46

gph.



AUGUST- 2017

BORE WELL WATER ANALYSIS -AUGUST 2017																			
Sl. No.	ANALYSIS	As	Unit	PHASE - I						PHASE - II									
				BW 1	BW 2	BW 3	BW 4	BW 5	BW 6	BW1	BW2	BW3	BW4	BW5	BW6	BW7	BW8	BW9	BW10
1	pH	-	-	7.40	7.41	7.43	7.53	7.50	7.45	8.14	7.15	7.47	7.24	7.44	Not in use	7.40	7.33	7.29	7.44
2	Electrical Conductivity	-	µs/Cm	1400	1256	1280	640	768	750	1328	610	1320	1158	750		755	760	722	756
3	Total Hardness	CaCo3	ppm	468	444	465	340	355	358	480	320	420	420	350		360	420	385	422
4	Calcium Hardness	CaCo3	ppm	170	165	260	170	185	160	260	150	195	230	175		190	205	165	210
6	Magnesium Hardness	CaCo3	ppm	290	285	190	170	170	208	220	170	225	190	175		170	215	200	212
8	Chlorides	Cl	ppm	124	140	120	78	68	88	100	120	68	85	53		46	67	82	82
7	Sulphates	So4	ppm	45	65	60	44	54	49	74	45	65	63	54		34	43	66	43
8	Silica	SiO2	ppm	68	68	62	45	58	57	60	53	52	51	65		98	89	84	87

SEPTEMBER -2017

BORE WELL WATER ANALYSIS -SEPTEMBER 2017																			
Sl. No.	ANALYSIS	As	Unit	PHASE - I						PHASE - II									
				BW 1	BW 2	BW 3	BW 4	BW 5	BW 6	BW1	BW2	BW3	BW4	BW5	BW6	BW7	BW8	BW9	BW10
1	pH	-	-	7.39	7.41	7.43	7.53	7.50	7.45	8.14	7.15	7.47	7.24	7.44	Not in use	7.40	7.33	7.29	7.44
2	Electrical Conductivity	-	µs/Cm	1200	1446	1180	622	767	752	1478	596	1285	1058	766		709	676	808	917
3	Total Hardness	CaCo3	ppm	4600	430	450	280	325	355	500	265	450	380	360		350	385	345	400
4	Calcium Hardness	CaCo3	ppm	122	165	260	170	185	160	260	150	195	230	175		190	205	165	210
5	Magnesium Hardness	CaCo3	ppm	123	265	190	110	140	195	240	115	255	160	185		160	160	180	190
6	Chlorides	Cl	ppm	120	167	103	21	43	71	160	43	124	85	53		46.08	67.35	81.53	81.53
7	Sulphates	So4	ppm	45	46	42	44	54	49	44	45	65	63	54		33.50	42.90	65.90	43.40
8	Silica	SiO2	ppm	56	56	68	60	62	60	56	40	45	55	56		98.33	89.11	84.04	86.58

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TNPCB Analysis reports

April 2017 to Dec 2017



TAMILNADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Ambattur.

From
Dr.S.Sukumar.M.Sc.,M.Phil.,Ph.D.,
Chief Scientific Officer (Lab),
District Environmental Laboratory,
No.77-A South Avenue Road,
Ambattur Industrial Estate, Ambattur,
Chennai 600 058.

To
M/s.OPG Power Generation Pvt Ltd.
Obulapuram,
Gummidipoondi,
Tiruvallur Dt,
Pin Code-601 201.

Lr.No.TNPCB/DEL/AMB/AIR/ **40** /AAQS/SM/2017-18.

Dated: 25/09/2017.

Sir,

Sub: Furnishing of Report of Analysis of Ambient Air Quality/Stack Monitoring /
Ambient Noise Level Survey-regarding.

Ref: 1. T.O.Lr.No 12/2017-18

Dated: 08/07/2017

2. Yr ltr. No.OPGPG.JMD/PCB/17-18/386

Dated: 12/07/2017

3. Cash Receipt No.8984

Dated: 14/07/2017

Rs. 70,000

The Report of Analysis of Ambient Air Quality /Stack Monitoring/Ambient Noise Level
Survey conducted in the vicinity of your Industry on 22/09/17. along with the Bill for Rs. 60700
(Rupees Sixty Thousand Seven Hundred only) is furnished herewith.

Kindly acknowledge the receipt of the above without fail

Chief Scientific Officer(Lab)
DEL, Ambattur

Encl: As above

Copy Submitted:

1. The Joint Chief Environmental Engineer Monitoring (Chennai).
2. The Director (Lab) TNPCB, Chennai.
3. The District Environmental Engineer, Thiruvallur (Dt).
4. To File.



TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Ambattur.

Ambient Air Quality Survey Report

Report No. **40 /AAQS/2017-18**

Dated: 25/09/2017.

1. Name of the Industry : **M/s.OPG Power Generation Pvt Ltd.**
2. Address of the Industry : **Obulapuram,
Gummidipoondi,
Tiruvalur Dt,**
3. Date of survey : **22/09/17.**
4. Duration of Survey : **Eight hours**
5. Category : **Other**
6. Classification : **Red Large**
7. Consent Order No. : **170828235199**
8. Time of survey started in Hrs : **10.05**
9. Time of survey closed in Hrs : **18.50**

Ambient Temperature (°C)	Min	Max	Relative Humidity (%)	Min	Max
	31.5	34.0		58	69
Weather Condition	Clear Sky		Rain Fall (mm)	Nil	
Predominant Wind Condition	SW-NE		Mean Wind Speed (Km/hr)	6.16	

Ambient Air Quality Survey Report of Analysis

Sl. No	Location	Direction	Distance (m)	Height from GL (m)	Pollutants Concentrations (µg/m ³)			
					PM _{2.5}	PM ₁₀	SO ₂	NO ₂
1	On House top of Thiru Jambulingam at Periya Obulapuram.	N	400	5.0	---	80	11.6	13.6
2	On top of scaffolding near Church at Kayalarumedu.	NE	400	5.0	42	86	12.9	15.0
3	On top of scaffolding near OPG Quarters, Billakuppam	SE	600	5.0	---	78	11.4	13.8
4	On top of scaffolding near Thiru.Durai,S.R.Kandigai	SSW	200	5.0	---	77	11.8	13.9
5	On top of scaffolding near M/s.Aqua Fina water plant at G.R.Kandigai.	SW	1000	5.0	39	89	12.2	14.3
6	On House top of Thiru Suresh at N.R.Kandigai.	NW	350	5.0	---	83	12.0	15.2

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**Chief Scientific Officer(Lab)
DEL, Ambattur**

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TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Ambattur.

Stack Monitoring Survey - Report of Analysis

Report I40 /SM/2017-18

Dated: 25/09/2017.

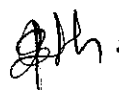
1. Name of the Industry : **M/s.OPG Power Generation Pvt Ltd.**
2. Address of the Industry : Obulapuram.
Gummidipoondi,
Tiruvaluur Dt,
3. Date of survey : 22/09/17.
4. Consent Order No. : **170828235199**
5. Classification : Red Large

Stack Analysis Report

Sl. No	Stack attached to	Stack Temp °C	Velocity in (M/sec)	Discharge rate in (Nm ³ /hr)	Pollutants (mg/Nm ³)		
					PM	SO ₂	Nox
1	Boiler-320TPH Unit-1, Power Generation 80MW, Fuel-Coal, APC-ESP.	141	23.5	443221.2	35.6	327.4	118.4
2	Boiler-320TPH Unit-3, Power Generation 80MW, Fuel-Coal, APC-ESP.	135	24.4	466963.3	37.2	401.3	128.6
3	Boiler-563TPH Unit-4, Power Generation 180MW, Fuel-Coal, APC-ESP.	156	24.5	443019.9	39.4	433.0	138.8


Chief Scientific Officer(Lab)

DEL, Ambattur





TAMILNADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Ambattur.

Ambient Noise Level Survey-Report of Analysis

Report No. 40

/NSL/2017-18

Dated: 25/09/2017.

1	Name of the Industry	M/s.OPG Power Generation Pvt Ltd.
2	Address of the Industry	Obulapuram. Gummidipoondi, Tiruvaluur Dt,
3	Date of survey	22/09/17.
4	Classification & Consent Order No.	Red Large 170828235199
5	Land Use Classification	Un Classified

Type of survey	Ambient	Time Of Survey	Day
Meteorological Conditions		Calm	

Logging Parameters

Instrument Used	Larsen & Davis	Serial No.	824A2033
Logging Interval	10 Minutes in each point	Measuring Range	50-110 dB(A)
Weighting	"A"	Time Weighting	Slow
Sound Incidence	Random	Time of survey in Hrs.	15.00-16.30

Location	Duration (m)	Distance (m)	Direction	Sound Level -dB(A)		
				L _{eq}	L _{Min}	L _{Max}
Near Jambulingam House	10	400	N	55.6	50.2	66.8
Near Main Security gate at Kayalarmedu	10	300	NE	57.2	53.8	71.2
Near OPG Quarters at Billakuppam	10	500	SE	52.4	48.7	66.4
Near Auqafina Plant at GR Kandigai	10	1000	SW	51.6	47.6	65.2
Near Suresh House at NR Kandigai	10	350	NW	60.2	56.1	76.3

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Chief Scientific Officer(Lab)
DEL, Ambattur

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TRP03 Bore well Analysis Report

Sample Description	4-Apr-17				14-May-17				21-May-17				28-May-17							
	SIP Out	RO report treated	Pond Untreated	SIP Out	RO report treated	Pond Untreated	SEP treated	SIP Out	SEP treated	Pond Untreated	SIP Out	RO report treated	Pond Untreated	SEP treated	SIP Out	RO report treated	Pond Untreated	SIP Out	RO report treated	Pond Untreated
DSE Code No.	4	3	6	59	60	61	62	112	113	114	199	199	200	201	287	288	288	282	283	284
Lab Code	11	12	13	316	317	318	319	512	514	515	723	724	725	726	955	956	957	1155	1157	1158
Site Parameter	1	2	3	1	2	3	4	1	2	3	1	2	3	4	1	2	3	1	2	3
1 pH	7.22	8.14	8.33	7.6	8.54	8.5	8.33	7.14	8.71	9.01	8.61	8.82	8.81	7.1	7.03	8.31	8.57	7.8	8.14	8.25
2 Conductivity									52											
3 Total Suspended Solids	18	8	16	16	12	10	12	16	12	20	22	8	14	14	18	12	10	10	12	20
4 Total Dissolved Solids		692	734		996	472	744		692	300		308	746	592		792	336	882		840
5 Chlorides		195	215		320	115	230		265	80		50	280	60		230	310	245		220
6 Sulfates		39	93		166	30	104		140	151		2	167	105		150	132	92		84
7 Oil and Grease		<1	<1		<1	<1	<1		<1	<1		<1	<1	<1		<1	<1		<1	<1
8 BOD @ 27°C for 3 days	5	4	6	4	5	2	3	3	4	5	13	3	4	4	3	4	5	2	3	3
9 COD	48	32	48	32	40	24	32	32	40	48	80	32	48	40	24	32	48	24	40	32
10 Phosphorus																				
11 Sulfides																				
12 Copper																				
13 Zinc																				
14 Cadmium																				
15 Lead																				
16 Nickel																				
17 Total Phosphate																				
18 Total Chromium																				
19 Total Mercury																				
20 Total Arsenic																				
21 Borate																				
22 Mercury																				
23 Total Nitrogen (NH3+NO2)				<0.15											0.9					<0.15
24 Ammonia Nitrogen				8																<0.3
25 Total Chlorine																				
26 Dissolved Chlorine																				

Third Party Analysis Reports on AAQ & Stack

Third Party Analysis Reports on AAQ & Stack



TEST REPORT

Accredited by NABL (Chemical & Biological)
Recognized by BIS as per IS : 14543

AMBIENT AIR QUALITY SURVEY

Report No :	ECI-NN-AAQ-151/12/2017	Report Date :	09.12.2017
Customer Name & Address	M/s. OPG Power Generation Pvt Ltd OPG Nagar, Periyaobulapuram village Madharpakkam Road, Gummidipoondi-601201 Tamil Nadu , India		
Customer Reference :	4540001999 Dt: 28/11/2017	Sample Reference No :	ECI-NN-AAQ-151/12/2017
Sample Drawn By :	ECI	Sample Received On :	05.12.2017
Sample Collected Date :	04.12.2017	Test Commenced On :	05.12.2017
Qty of Sample Received :	Filter Paper & 25ml Solution	Test Completed On :	08.12.2017
Sample Description :	Ambient Air	Sampling Method :	IS 5182:P14:2000(R:2005)
Sample Mark:	Near Lab		

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	Permissible limits of NAAQs (Industrial, Residential)
1.	Ammonia (as NH ₃)	µg/m ³	< 1.0	IS 11255:Part 06:1999 RA: 2014	400
2.	Arsenic (as As)	ng/m ³	< 0.1	IS 5182:Part 22: 2004 RA 2014 & AAS-VGA Flame Method	6.0
3.	Benzene (C ₆ H ₆)	µg/m ³	< 1.0	IS 5182:Part 11:2006 RA 2012	5.0
4.	Benzo-a-Pyrene (BaP)	ng/m ³	< 1.0	IS 5182:Part 12:2004 RA 2014	1.0
5.	Carbon Monoxide (as CO)	mg/m ³	< 1.2	ECI-SOP-SAM-08 /Instrument Manual	2.0
6.	Lead (as Pb)	µg/m ³	< 0.1	IS 5182:Part 22: 2004 RA 2014 & AAS VGA Flame Method	1.0
7.	Nickel (as Ni)	ng/m ³	< 0.1	IS 5182:Part 22: 2004 RA 2014 & AAS VGA Flame Method	20
8.	Nitrogen dioxide (as NO ₂)	µg/m ³	9.6	IS 5182 :Part 06:2006 RA 2012	80
9.	Ozone (as O ₃)	µg/m ³	< 9.8	IS 5182:Part 09:1974 RA 2014	180
10.	Particulate Matter (PM _{2.5})	µg/m ³	21.5	EPA 40 CFR Part 50 Appendix L	60
11.	Respirable Particulate Matter (PM ₁₀)	µg/m ³	37.1	IS 5182: Part 23:2006 RA 2012	100
12.	Sulphur Dioxide (as SO ₂)	µg/m ³	5.7	IS 5182:Part 02. 2001 RA 2012	80

--- End of Report --->

Verified By : *[Signature]*

Remarks : ---

For ENVIRO CARE INDIA PRIVATE LIMITED
(Laboratory Division)



[Signature]
Authorized Signatory

[Signature]

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Mobile : 8056766966
e-mail : ecicbe@envirocareindia.com





TEST REPORT

Accredited by NABL (Chemical & Biological)
Recognized by BIS as per IS 14543

AMBIENT AIR QUALITY SURVEY

Report No :	ECI-NN-AAQ-152/12/2017	Report Date :	09.12.2017
Customer Name & Address	M/s. OPG Power Generation Pvt Ltd OPG Nagar, Periyaobulapuram village Madharpakkam Road, Gummidipoondi-601201 Tamil Nadu , India		
Customer Reference :	4540001999 Dt: 28/11/2017	Sample Reference No :	ECI-NN-AAQ-152/12/2017
Sample Drawn By :	ECI	Sample Received On :	05.12.2017
Sample Collected Date :	04.12.2017	Test Commenced On :	05.12.2017
Qty of Sample Received :	Filter Paper & 25ml Solution	Test Completed On :	08.12.2017
Sample Description :	Ambient Air	Sampling Method :	IS 5182:P14:2000(R:2005)
Sample Mark:	Near North Gate		

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	Permissible limits of NAAQs (Industrial Residential)
1.	Ammonia (as NH ₃)	µg/m ³	< 1.0	IS 11255:Part 06:1999 RA: 2014	400
2.	Arsenic (as As)	ng/m ³	< 0.1	IS 5182:Part 22: 2004 RA 2014 & AAS-VGA Flame Method	6.0
3.	Benzene (C ₆ H ₆)	µg/m ³	< 1.0	IS 5182:Part 11:2006 RA 2012	5.0
4.	Benzo-a-Pyrine (BaP)	ng/m ³	< 1.0	IS 5182:Part 12:2004 RA 2014	1.0
5.	Carbon Monoxide (as CO)	mg/m ³	< 1.2	ECI-SOP-SAM-08 /Instrument Manual	2.0
6.	Lead (as Pb)	µg/m ³	< 0.1	IS 5182:Part 22: 2004 RA 2014 & AAS VGA Flame Method	1.0
7.	Nickel (as Ni)	ng/m ³	< 0.1	IS 5182:Part 22: 2004 RA 2014 & AAS VGA Flame Method	20
8.	Nitrogen dioxide (as NO ₂)	µg/m ³	13.5	IS 5182 :Part 06:2006 RA 2012	80
9.	Ozone (as O ₃)	µg/m ³	< 9.8	IS 5182:Part 09:1974 RA 2014	180
10.	Particulate Matter (PM _{2.5})	µg/m ³	36.5	EPA 40 CFR Part 50 Appendix L	60
11.	Respirable Particulate Matter (PM ₁₀)	µg/m ³	69.3	IS 5182: Part 23:2006 RA 2012	100
12.	Sulphur Dioxide (as SO ₂)	µg/m ³	7.2	IS 5182:Part 02: 2001 RA 2012	80

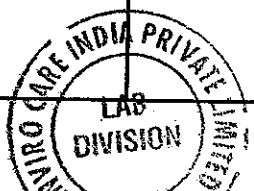
<--- End of Report --->

Verified By : *[Signature]*

Remarks : --

For ENVIRO CARE INDIA PRIVATE LIMITED
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TEST REPORT

Accredited by NABL (Chemical & Biological)
Recognized by BIS as per IS 14001:2004

AMBIENT AIR QUALITY SURVEY

Report No :	ECI-NN-AAQ-155/12/2017	Report Date :	09.12.2017
Customer Name & Address	M/s. OPG Power Generation Pvt Ltd OPG Nagar, Periyaobulapuram village Madharpakkam Road, Gummidipoondi-601201 Tamil Nadu , India		
Customer Reference :	4540001999 Dt: 28/11/2017	Sample Reference No :	ECI-NN-AAQ-155/12/2017
Sample Drawn By :	ECI	Sample Received On :	05.12.2017
Sample Collected Date :	04.12.2017	Test Commenced On :	05.12.2017
Qty of Sample Received :	Filter Paper & 25ml Solution	Test Completed On :	08.12.2017
Sample Description :	Ambient Air	Sampling Method :	IS 5182:P14:2000(R:2005)
Sample Mark :	Near 110 KVA Switch Yard		

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	Permissible limits of NAAQs (Industrial, Residential)
1.	Ammonia (as NH ₃)	µg/m ³	< 1.0	IS 11255:Part 06: 1999 RA: 2014	400
2.	Arsenic (as As)	ng/m ³	< 0.1	IS 5182:Part 22: 2004 RA 2014 & AAS-VGA Flame Method	6.0
3.	Benzene (C ₆ H ₆)	µg/m ³	< 1.0	IS 5182:Part 11:2006 RA 2012	5.0
4.	Benzo-a-Pyrene (BaP)	ng/m ³	< 1.0	IS 5182:Part 12:2004 RA 2014	1.0
5.	Carbon Monoxide (as CO)	mg/m ³	0.2	ECI-SOP-SAM-08 /Instrument Manual	2.0
6.	Lead (as Pb)	µg/m ³	< 0.1	IS 5182:Part 22: 2004 RA 2014 & AAS VGA Flame Method	1.0
7.	Nickel (as Ni)	ng/m ³	< 0.1	IS 5182:Part 22: 2004 RA 2014 & AAS VGA Flame Method	20
8.	Nitrogen dioxide (as NO ₂)	µg/m ³	15.2	IS 5182 :Part 06:2006 RA 2012	80
9.	Ozone (as O ₃)	µg/m ³	< 9.8	IS 5182:Part 09:1974 RA 2014	180
10.	Particulate Matter (PM _{2.5})	µg/m ³	38.2	EPA 40 CFR Part 50 Appendix L	60
11.	Respirable Particulate Matter (PM ₁₀)	µg/m ³	70.2	IS 5182: Part 23:2006 RA 2012	100
12.	Sulphur Dioxide (as SO ₂)	µg/m ³	8.6	IS 5182:Part 02: 2001 RA 2012	80

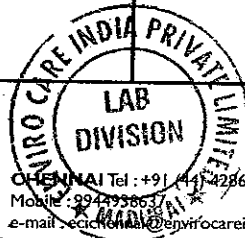
<--- End of Report --->

Verified By : *[Signature]*

Remarks : ---

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TEST REPORT

Accredited by NABL (Chemical & Biological)
Recognized by BIS as per IS 15443

AMBIENT AIR QUALITY SURVEY

Report No :	ECI-NN-AAQ-157/12/2017	Report Date :	09.12.2017
Customer Name & Address	M/s. OPG Power Generation Pvt Ltd OPG Nagar, Periyaobulapuram village Madharpakkam Road, Gummidipoondi-601201 Tamil Nadu , India		
Customer Reference :	4540001999 Dt: 28/11/2017	Sample Reference No :	ECI-NN-AAQ-157/12/2017
Sample Drawn By	ECI	Sample Received On :	05.12.2017
Sample Collected Date :	04.12.2017	Test Commenced On :	05.12.2017
Qty of Sample Received :	Filter Paper & 25ml Solution	Test Completed On :	08.12.2017
Sample Description :	Ambient Air	Sampling Method :	IS 5182:P14:2000(R:2005)
Sample Mark	Near Security South Gate		

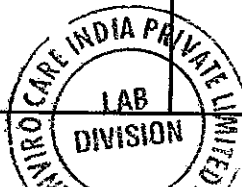
S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	Permissible limits of NAAQs (Industrial, Residential)
1.	Ammonia (as NH ₃)	µg/m ³	< 1.0	IS 11255:Part 06:1999 RA: 2014	400
2.	Arsenic (as As)	ng/m ³	< 0.1	IS 5182:Part 22: 2004 RA 2014 & AAS-VGA Flame Method	6.0
3.	Benzene (C ₆ H ₆)	µg/m ³	< 1.0	IS 5182:Part 11:2006 RA 2012	5.0
4.	Benzo-a-Pyrine (BaP)	ng/m ³	< 1.0	IS 5182:Part 12:2004 RA 2014	1.0
5.	Carbon Monoxide (as CO)	mg/m ³	< 1.2	ECI-SOP-SAM-08 /Instrument Manual	2.0
6.	Lead (as Pb)	µg/m ³	< 0.1	IS 5182:Part 22: 2004 RA 2014 & AAS VGA Flame Method	1.0
7.	Nickel (as Ni)	ng/m ³	< 0.1	IS 5182:Part 22: 2004 RA 2014 & AAS VGA Flame Method	20
8.	Nitrogen dioxide (as NO ₂)	µg/m ³	11.2	IS 5182 :Part 06:2006 RA 2012	80
9.	Ozone (as O ₃)	µg/m ³	< 9.8	IS 5182:Part 09:1974 RA 2014	180
10.	Particulate Matter (PM _{2.5})	µg/m ³	27.2	EPA 40 CFR Part 50 Appendix L	60
11.	Respirable Particulate Matter (PM ₁₀)	µg/m ³	46.5	IS 5182: Part 23:2006 RA 2012	100
12.	Sulphur Dioxide (as SO ₂)	µg/m ³	6.1	IS 5182:Part 02: 2001 RA 2012	80

<--- End of Report --->

Verified By : *A. I. [Signature]*

Remarks : ---

For ENVIRO CARE INDIA PRIVATE LIMITED
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TEST REPORT

INDOOR AIR QUALITY SURVEY

Report No :	ECI-NN-IAQ-99/12/2017	Report Date :	09.12.2017
Customer Name & Address	M/s. OPG Power Generation Pvt Ltd OPG Nagar, Periyaobulapuram village Madharpakkam Road, Gummidipoondi-601201 Tamil Nadu , India		
Customer Reference :	4540001999 Dt: 28/11/2017	Sample Reference No :	ECI-NN-IAQ-99/12/2017
Sample Drawn By :	ECI	Sample Received On :	05.12.2017
Sample Collected Date :	04.12.2017	Test Commenced On :	05.12.2017
Qty of Sample Received :	Filter Papers & 25. ml Soln	Test Completed On :	08.12.2017
Sample Description :	Indoor Air	Sampling Method :	IS 5182 :P14:2000(R:2005)
Sample Mark:	CHP-1 Conveyor Side [South Side]		

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	OSHA Guidelines for IAQ
1.	Carbon Di-Oxide (CO ₂)	ppm	436	ECI-SOP-SAM-28	5000
2.	Carbon Monoxide (as CO)	mg/m ³	< 1.2	ECI-SOP-A-06 (issue no & dt 02/02.04.2012) & CPCB Guideline volume 2	55
3.	Suspended Particulate Matter (SPM)	µg/m ³	127.6	IS:5182 Part 4:1999 RA 2014	-

<--- End of Report --->

Verified By : *[Signature]*

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TEST REPORT

INDOOR AIR QUALITY SURVEY

Authorized by NABP (Chemical, Biological, Microbiology, BLS, OHSAS, ILS)

Report No :	ECI-NN-IAQ-100/12/2017	Report Date :	09.12.2017
Customer Name & Address	M/s. OPG Power Generation Pvt Ltd OPG Nagar, Periyaobulapuram village Madharpakkam Road, Gummidipoondi-601201 Tamil Nadu , India		
Customer Reference :	4540001999 Dt: 28/11/2017	Sample Reference No :	ECI-NN-IAQ-100/12/2017
Sample Drawn By :	ECI	Sample Received On :	05.12.2017
Sample Collected Date :	04.12.2017	Test Commenced On :	05.12.2017
Qty of Sample Received :	Filter Papers & 25 ml Soln.	Test Completed On :	08.12.2017
Sample Description :	Indoor Air	Sampling Method :	IS 5182 :P14:2000(R.2005)
Sample Mark:	CHP-1 Conveyor Side [Middle Side]		

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	OSHA Guidelines for IAQ
1.	Carbon Di-Oxide (CO ₂)	ppm	395	ECI-SOP-SAM-28	5000
2.	Carbon Monoxide (as CO)	mg/m ³	< 1.2	ECI-SOP-A-06 (issue no & dt 02/02.04.2012) & CPCB Guideline volume 2	55
3.	Suspended Particulate Matter (SPM)	µg/m ³	133.8	IS:5182 Part 4:1999 RA 2014	-

<--- End of Report --->

Verified By : *[Signature]*

Remarks : ---

For ENVIRO CARE INDIA PRIVATE LIMITED
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OHSAS : 18001 : 2007 Certified Company

TEST REPORT

INDOOR AIR QUALITY SURVEY

Report No :	ECI-NN-IAQ-101/12/2017	Report Date :	09.12.2017
Customer Name & Address	M/s. OPG Power Generation Pvt Ltd OPG Nagar, Periyaobulapuram village Madharpakkam Road, Gummidipoondi-601201 Tamil Nadu , India		
Customer Reference	4540001999 Dt: 28/11/2017	Sample Reference No :	ECI-NN-IAQ-101/12/2017
Sample Drawn By :	ECI	Sample Received On :	05.12.2017
Sample Collected Date :	04.12.2017	Test Commenced On :	05.12.2017
Qty of Sample Received :	Filter Papers & 25 ml Soln	Test Completed On :	08.12.2017
Sample Description :	Indoor Air	Sampling Method :	IS 5182 :P14:2000(R.2005)
Sample Mark:	CHP-1 Conveyor Side [North Side]		

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	OSHA Guidelines for IAQ
1.	Carbon Di-Oxide (CO ₂)	ppm	484	ECI-SOP-SAM-28	5000
2.	Carbon Monoxide (as CO)	mg/m ³	< 1.2	ECI-SOP-A-06 (issue no & dt 02/02.04.2012) & CPCB Guideline volume 2	55
3.	Suspended Particulate Matter (SPM)	µg/m ³	119.4	IS:5182 Part 4:1999 RA 2014	-

<--- End of Report --->

Verified By : *[Signature]*

Remarks : ---

For ENVIRO CARE INDIA PRIVATE LIMITED
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OHSAS : 18001 : 2007 Certified Company

TEST REPORT

INDOOR AIR QUALITY SURVEY

Report No :	ECI-NN-IAQ-102/12/2017	Report Date :	09.12.2017
Customer Name & Address	M/s. OPG Power Generation Pvt Ltd OPG Nagar, Periyaobulapuram village Madharpakkam Road, Gummidipoondi-601201 Tamil Nadu , India		
Customer Reference :	4540001999 Dt: 28/11/2017	Sample Reference No :	ECI-NN-IAQ-102/12/2017
Sample Drawn By :	ECI	Sample Received On :	05.12.2017
Sample Collected Date :	04.12.2017	Test Commenced On :	05.12.2017
Qty. of Sample Received :	Filter Papers & 25 ml Soln	Test Completed On :	08.12.2017
Sample Description :	Indoor Air	Sampling Method :	IS 5182 :P14:2000(R:2005)
Sample Mark:	CHP-2 4A Conveyor Side [Middle Side]		

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	OSHA Guidelines for IAQ
1.	Carbon Di-Oxide (CO ₂)	ppm	463	ECI-SOP-SAM-28	5000
2.	Carbon Monoxide (as CO)	mg/m ³	< 1.2	ECI-SOP-A-06 (issue no & dt 02/02.04.2012) & CPCB Guideline volume 2	55
3.	Suspended Particulate Matter (SPM)	µg/m ³	125.5	IS:5182 Part 4:1999 RA 2014	-

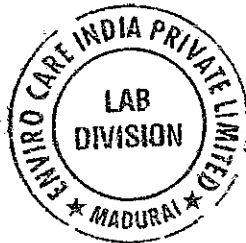
<--- End of Report --->

Verified By : *[Signature]*

Remarks : ---

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TEST REPORT

Accreditation: NABL (Chemical & Biological)
Reference: ECI/MS/154/2017

INDOOR AIR QUALITY SURVEY

Report No :	ECI-NN-IAQ-103/12/2017	Report Date :	09.12.2017
Customer Name & Address	M/s. OPG Power Generation Pvt Ltd OPG Nagar, Periyaobulapuram village Madharpakkam Road, Gummidipoondi-601201 Tamil Nadu , India		
Customer Reference :	4540001999 Dt: 28/11/2017	Sample Reference No :	ECI-NN-IAQ-103/12/2017
Sample Drawn By :	ECI	Sample Received On :	05.12.2017
Sample Collected Date :	04.12.2017	Test Commenced On :	05.12.2017
Qty of Sample Received :	Filter Papers & 25 ml Soln	Test Completed On :	08.12.2017
Sample Description :	Indoor Air	Sampling Method :	IS 5182 :P14:2000(R:2005)
Sample Mark:	CHP-2 4A Conveyor Side [South Side]		

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	OSHA Guidelines for IAQ
1.	Carbon Di-Oxide (CO ₂)	ppm	379	ECI-SOP-SAM-28	5000
2.	Carbon Monoxide (as CO)	mg/m ³	< 1.2	ECI-SOP-A-06 (issue no & dt 02/02.04.2012) & CPCB Guideline volume 2	55
3.	Suspended Particulate Matter (SPM)	µg/m ³	143.6	IS:5182 Part 4:1999 RA 2014	-

<--- End of Report --->

Verified By : *[Signature]*

Remarks : ---

For ENVIRO CARE INDIA PRIVATE LIMITED
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Enviro Care
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ISO 14001 : 2004 Certified Company
OHSAS : 18001 : 2007 Certified Company

Consulting: HSE (Chemical & Biological)
Registration: BIS - 14015 - 1453

TEST REPORT

INDOOR AIR QUALITY SURVEY

Report No :	ECI-NN-IAQ-104/12/2017	Report Date :	09.12.2017
Customer Name & Address	M/s. OPG Power Generation Pvt Ltd OPG Nagar, Periyaobulapuram village Madharpakkam Road, Gummidipoondi-601201 Tamil Nadu , India		
Customer Reference :	4540001999 Dt: 28/11/2017	Sample Reference No :	ECI-NN-IAQ-104/12/2017
Sample Drawn By :	ECI	Sample Received On :	05.12.2017
Sample Collected Date :	04.12.2017	Test Commenced On :	05.12.2017
Qty of Sample Received :	Filter Papers & 25 ml Soln	Test Completed On :	08.12.2017
Sample Description :	Indoor Air	Sampling Method :	IS 5182 :P14:2000(R:2005)
Sample Mark:	CHP-2 4B Conveyor Side [North Side]		

S.No	PARAMETERS	UNITS	RESULTS	TEST-METHOD	OSHA Guidelines for IAQ
1.	Carbon Di-Oxide (CO ₂)	ppm	410	ECI-SOP-SAM-28	5000
2.	Carbon Monoxide (as CO)	mg/m ³	< 1.2	ECI-SOP-A-06 (issue no & dt 02/02.04.2012) & CPCB Guideline volume 2	55
3.	Suspended Particulate Matter (SPM)	µg/m ³	145.4	IS:5182 Part 4:1999 RA 2014	-

<--- End of Report --->

Verified By : *[Signature]*

Remarks : ---

For ENVIRO CARE INDIA PRIVATE LIMITED
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TEST REPORT

Accredited by **NABL** (Chemical & Biological)
Registration No. BLS-001-1543-2

STACK MONITORING

Report No :	ECI-NN-SM-166/12/2017	Report Date :	09.12.2017
Customer Name & Address	M/s. OPG Power Generation Pvt Ltd OPG Nagar, Periyaobulapuram village Madharpakkam Road, Gummidipoondi-601201 Tamil Nadu , India		
Customer Reference :	4540001999 Dt: 28/11/2017	Sample Reference No :	ECI-NN-SM-166/12/2017
Sample Drawn By :	ECI	Sample Received On :	05.12.2017
Sample Collected Date :	04.12.2017	Test Commenced On :	05.12.2017
Qty of Sample Received :	Thimble & 50 ml Soln	Test Completed On :	08.12.2017
Sample Description :	Stack	Sampling Method :	IS : 11255:P1:1985(R:2014)
Sample Mark :	DG 625 KVA - Silencer (Diesel)		

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	Max Permissible TNPCC norms for General Emission Standards
1.	Ambient Temperature	°C	35	IS 11255:Part 03:2008 RA 2013	NA
2.	Carbon Monoxide (as CO)	% (v/v)	0.4	IS 13270:1992 RA:2014	1.0
3.	Flow rate	Nm ³ /hr	10.4	IS 11255:Part 03:2008 RA 2013	NA
4.	Flue Gas velocity	m/sec	1222	IS 11255:Part 03:2008 RA 2013	NA
5.	Hydrocarbon (HC)	% (v/v)	< 0.2	IS 13270:1992 (RA:2003)	NA
6.	Oxides of Nitrogen (as NO _x)	mg/Nm ³	34.9	IS 11255:Part 07:2005 &IS 5182 :Part 06:2006 RA 2012	NA
7.	Particulate Matter (PM)	mg/Nm ³	101.2	IS 11255:Part 01:1985 RA:2014	150
8.	Port hole Height from G Level	M	8.0	---	NA
9.	Stack Diameter at port hole	m	0.25	---	NA
10.	Stack Height from G Level	m	8.0	---	NA
11.	Stack Temperature	°C	175	IS 11255:Part 03:2008 RA 2013	NA
12.	Sulphur Dioxide (as SO ₂)	mg/Nm ³	17.1	IS 11255:Part 02: 1985 RA:2014	NA

<--- End of Report --->

Verified By : *[Signature]*

Remarks : NA - Not Applicable

For ENVIRO CARE INDIA PRIVATE LIMITED
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TEST REPORT

Accredited by **NABL** (Chemical & Biological)
Recognized by BIS under IS : 1552

STACK MONITORING

Report No :	ECI-NN-SM-167/12/2017	Report Date :	09.12.2017
Customer Name & Address	M/s. OPG Power Generation Pvt Ltd OPG Nagar, Periyaobulapuram village Madharpakkam Road, Gummidipoondi-601201 Tamil Nadu , India		
Customer Reference :	4540001999 Dt: 28/11/2017	Sample Reference No :	ECI-NN-SM-167/12/2017
Sample Drawn By :	ECI	Sample Received On :	05.12.2017
Sample Collected Date :	04.12.2017	Test Commenced On :	05.12.2017
Qty of Sample Received :	Thimble & 50 ml Soln	Test Completed On :	08.12.2017
Sample Description :	Stack	Sampling Method :	IS :11255:P1:1985(R:2014)
Sample Mark :	DG 500 KVA Unit I - Silencer (Diesel)		

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	Max.Permissible TNPGB norms for General Emission Standards
1.	Ambient Temperature	°C	35	IS 11255:Part 03:2008 RA 2013	NA
2.	Carbon Monoxide (as CO)	% (v/v)	0.4	IS 13270:1992 RA:2014	1.0
3.	Flow rate	Nm ³ /hr	1190	IS 11255:Part 03:2008 RA 2013	NA
4.	Flue Gas velocity	m/sec	9.0	IS 11255:Part 03:2008 RA 2013	NA
5.	Hydrocarbon (HC)	% (v/v)	< 0.2	IS 13270:1992 (RA:2003)	NA
6.	Oxides of Nitrogen (as NO _x)	mg/Nm ³	32.4	IS 11255:Part 07:2005 &IS 5182 :Part 06:2006 RA 2012	NA
7.	Particulate Matter (PM)	mg/Nm ³	96.2	IS 11255:Part 01:1985 RA:2014	150
8.	Port hole Height from G Level	M	4.0	---	NA
9.	Stack Diameter at port hole	m	0.25	---	NA
10.	Stack Height from G Level	m	4.0	---	NA
11.	Stack Temperature	°C	127	IS 11255:Part 03:2008 RA 2013	NA
12.	Sulphur Dioxide (as SO ₂)	mg/Nm ³	16.2	IS 11255:Part 02: 1985 RA:2014	NA

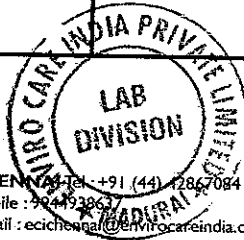
<--- End of Report --->

Verified By : *[Signature]*

Remarks : NA - Not Applicable

For ENVIRO CARE INDIA PRIVATE LIMITED
(Laboratory Division)

[Signature]
Authorized Signatory



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e-mail : ecicbe@envirocareindia.com





TEST REPORT

Accredited by NABL (Chemical & Biological)
Recognized by BIS (IS: 11255:2014)

STACK MONITORING

Report No :	ECI-NN-SM-168/12/2017	Report Date :	09.12.2017
Customer Name & Address	M/s. OPG Power Generation Pvt Ltd OPG Nagar, Periyaobulapuram village Madharpakkam Road, Gummidipoondi-601201 Tamil Nadu , India		
Customer Reference :	4540001999 Dt: 28/11/2017	Sample Reference No :	ECI-NN-SM-168/12/2017
Sample Drawn By :	ECI	Sample Received On :	05.12.2017
Sample Collected Date :	04.12.2017	Test Commenced On :	05.12.2017
Qty of Sample Received :	Thimble & 50 ml Soln	Test Completed On :	08.12.2017
Sample Description :	Stack	Sampling Method :	IS : 11255:P1:1985(R:2014)
Sample Mark:	DG 500 KVA Unit II - Silencer (Diesel)		

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	Max. Permissible TNPCE norms for General Emission Standards
1.	Ambient Temperature	°C	35	IS 11255:Part 03:2008 RA 2013	NA
2.	Carbon Monoxide (as CO)	% (v/v)	0.4	IS 13270:1992 RA:2014	1.0
3.	Flow rate	Nm ³ /hr	1190	IS 11255:Part 03:2008 RA 2013	NA
4.	Flue Gas velocity	m/sec	9.1	IS 11255:Part 03:2008 RA 2013	NA
5.	Hydrocarbon (HC)	% (v/v)	< 0.2	IS 13270:1992 (RA:2003)	NA
6.	Oxides of Nitrogen (as NO _x)	mg/Nm ³	33.9	IS 11255:Part 07:2005 & IS 5182 :Part 06:2006 RA 2012	NA
7.	Particulate Matter (PM)	mg/Nm ³	95.4	IS 11255:Part 01:1985 RA:2014	150
8.	Port hole Height from G Level	M	4.0	---	NA
9.	Stack Diameter at port hole	m	0.25	---	NA
10.	Stack Height from G Level	m	4.0	---	NA
11.	Stack Temperature	°C	129	IS 11255:Part 03:2008 RA 2013	NA
12.	Sulphur Dioxide (as SO ₂)	mg/Nm ³	15.9	IS 11255:Part 02: 1985 RA:2014	NA

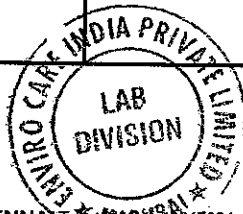
<--- End of Report --->

Verified By : *[Signature]*

Remarks : NA - Not Applicable

For ENVIRO CARE INDIA PRIVATE LIMITED
(Laboratory Division)

[Signature]
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Enviro Care
INDIA PRIVATE LIMITED

ISO 9001 : 2008 Certified Company
ISO 14001 : 2004 Certified Company
OHSAS : 18001 : 2007 Certified Company

TEST REPORT

Accredited by NABL (Chemical & Biological)
Recognized by BIS as per IS-14543

STACK MONITORING

Report No :	ECI-NN-SM-169/12/2017	Report Date :	09.12.2017
Customer Name & Address	M/s. OPG Power Generation Pvt Ltd OPG Nagar, Periyaobulapuram village Madharpakkam Road, Gummidipoondi-601201 Tamil Nadu , India		
Customer Reference :	4540001999 Dt: 28/11/2017	Sample Reference No :	ECI-NN-SM-169/12/2017
Sample Drawn By :	ECI	Sample Received On :	05.12.2017
Sample Collected Date :	04.12.2017	Test Commenced On :	05.12.2017
Qty of Sample Received :	Thimble & 50 ml Soln	Test Completed On :	08.12.2017
Sample Description :	Stack	Sampling Method :	IS : 11255:P1:1985(R:2014)
Sample Mark:	DG 500 KVA Unit III - Silencer (Diesel)		

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	Max Permissible INPCB norms for General Emission Standards
1.	Ambient Temperature	°C	35	IS 11255:Part 03:2008 RA 2013	NA
2.	Carbon Monoxide (as CO)	% (v/v)	0.4	IS 13270:1992 RA:2014	10
3.	Flow rate	Nm ³ /hr	1202	IS 11255:Part 03:2008 RA 2013	NA
4.	Flue Gas velocity	m/sec	9.2	IS 11255:Part 03:2008 RA 2013	NA
5.	Hydrocarbon (HC)	% (v/v)	< 0.2	IS 13270:1992 (RA:2003)	NA
6.	Oxides of Nitrogen (as NO _x)	mg/Nm ³	34.7	IS 11255:Part 07:2005 & IS 5182 :Part 06:2006 RA 2012	NA
7.	Particulate Matter (PM)	mg/Nm ³	97.9	IS 11255:Part 01:1985 RA:2014	150
8.	Port hole Height from G Level	M	4.0	---	NA
9.	Stack Diameter at port hole	m	0.25	---	NA
10.	Stack Height from G Level	m	4.0	---	NA
11.	Stack Temperature	°C	131	IS 11255:Part 03:2008 RA 2013	NA
12.	Sulphur Dioxide (as SO ₂)	mg/Nm ³	16.5	IS 11255:Part 02: 1985 RA:2014	NA

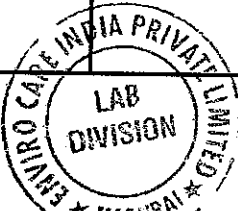
<--- End of Report --->

Verified By : *[Signature]*

Remarks : NA - Not Applicable

For ENVIRO CARE INDIA PRIVATE LIMITED
(Laboratory Division)

[Signature]
Authorized Signatory



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Enviro Care
INDIA PRIVATE LIMITED

ISO 9001 : 2008 Certified Company
ISO 14001 : 2004 Certified Company
OHSAS : 18001 - 2007 Certified Company

TEST REPORT

Accredited by NABL (Chemical & Biological)
Recognized by BIS as per IS 15543

STACK MONITORING

Report No :	ECI-NN-SM-170/12/2017	Report Date :	09.12.2017
Customer Name & Address	M/s. OPG Power Generation Pvt Ltd OPG Nagar, Periyaobulapuram village Madharpakkam Road, Gummidipoondi-601201 Tamil Nadu , India		
Customer Reference :	4540001999 Dt: 28/11/2017	Sample Reference No :	ECI-NN-SM-170/12/2017
Sample Drawn By :	ECI	Sample Received On :	05.12.2017
Sample Collected Date :	04.12.2017	Test Commenced On :	05.12.2017
Qty of Sample Received :	Thimble & 50 ml Soln	Test Completed On :	08.12.2017
Sample Description :	Stack	Sampling Method :	IS : 11255:P1:1985(R:2014)
Sample Mark:	Boiler -I		

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	Max. Permissible TNPCE norms for General Emission Standards
1.	Ambient Temperature	°C	35	IS 11255:Part 03:2008 RA 2013	NA
2.	Carbon Monoxide (as CO)	% (v/v)	0.2	IS 13270:1992 RA:2014	1.0
3.	Flow rate	Nm ³ /hr	82	IS 11255:Part 03:2008 RA 2013	NA
4.	Flue Gas velocity	m/sec	8.4	IS 11255:Part 03:2008 RA 2013	NA
5.	Hydrocarbon (HC)	% (v/v)	< 0.2	IS 13270:1992 (RA:2003)	NA
6.	Oxides of Nitrogen (as NO _x)	mg/Nm ³	13.9	IS 11255:Part 07:2005 & IS 5182 :Part 06:2006 RA 2012	NA
7.	Particulate Matter (PM)	mg/Nm ³	52.8	IS 11255:Part 01:1985 RA:2014	150
8.	Port hole Height from G Level	M	4.0	---	NA
9.	Stack Diameter at port hole	m	0.07	---	NA
10.	Stack Height from G Level	m	140	---	NA
11.	Stack Temperature	°C	152	IS 11255:Part 03:2008 RA 2013	NA
12.	Sulphur Dioxide (as SO ₂)	mg/Nm ³	6.5	IS 11255:Part 02: 1985 RA:2014	NA
13.	Mercury (as Hg)	mg/Nm ³	BDL	IS 11255:Part 01:2003 & AAS Method	NA

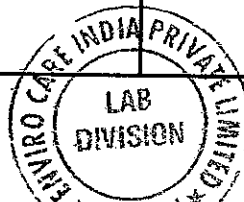
<--- End of Report --->

Verified By : *[Signature]*

Remarks : NA – Not Applicable.
BDL – Below Detectable Limit .

For ENVIRO CARE INDIA PRIVATE LIMITED
(Laboratory Division)

[Signature]
Authorized Signatory



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e-mail : lab@envirocareindia.com

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e-mail : ecicbe@envirocareindia.com





Enviro Care

INDIA PRIVATE LIMITED

ISO 9001 : 2008 Certified Company

ISO 14001 : 2004 Certified Company

OHSAS : 18001 : 2007 Certified Company

TEST REPORT

Accredited to NABL (Chemical & Biological)

Recognized by BIS as per IS 17454

STACK MONITORING

Report No :	ECI-NN-SM-171/12/2017	Report Date :	09.12.2017
Customer Name & Address	M/s. OPG Power Generation Pvt Ltd OPG Nagar, Periyaobulapuram village Madharpakkam Road, Gummidipoondi-601201 Tamil Nadu , India		
Customer Reference :	4540001999 Dt: 28/11/2017	Sample Reference No :	ECI-NN-SM-171/12/2017
Sample Drawn By :	ECI	Sample Received On :	05.12.2017
Sample Collected Date :	04.12.2017	Test Commenced On :	05.12.2017
Qty of Sample Received :	Thimble & 50 ml Soln	Test Completed On :	08.12.2017
Sample Description :	Stack	Sampling Method :	IS :11255:P1:1985(R:2014)
Sample Mark :	Boiler -II		

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	Max. Permissible INPCB norms for General Emission Standards
1.	Ambient Temperature	°C	35	IS 11255:Part 03:2008 RA 2013	NA
2.	Carbon Monoxide (as CO)	% (v/v)	0.2	IS 13270:1992 RA:2014	1.0
3.	Flow rate	Nm ³ /hr	82	IS 11255:Part 03:2008 RA 2013	NA
4.	Flue Gas velocity	m/sec	8.5	IS 11255:Part 03:2008 RA 2013	NA
5.	Hydrocarbon (HC)	% (v/v)	< 0.2	IS 13270:1992 (RA:2003)	NA
6.	Oxides of Nitrogen (as NO _x)	mg/Nm ³	14.2	IS 11255:Part 07:2005 & IS 5182 :Part 06:2006 RA 2012	NA
7.	Particulate Matter (PM)	mg/Nm ³	54.1	IS 11255:Part 01:1985 RA:2014	150
8.	Port hole Height from G Level	M	4.0	---	NA
9.	Stack Diameter at port hole	m	0.07	---	NA
10.	Stack Height from G Level	m	100	---	NA
11.	Stack Temperature	°C	157	IS 11255:Part 03:2008 RA 2013	NA
12.	Sulphur Dioxide (as SO ₂)	mg/Nm ³	6.9	IS 11255:Part 02:1985 RA:2014	NA
13.	Mercury (as Hg)	mg/Nm ³	BDL	IS 11255:Part 01:2003 & AAS Method	NA

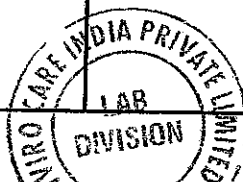
<--- End of Report --->

Verified By : *[Signature]*

Remarks : NA - Not Applicable.
BDL - Below Detectable Limit.

For ENVIRO CARE INDIA PRIVATE LIMITED
(Laboratory Division)

[Signature]
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TEST REPORT

Accredited by NABL (Chemical & Biological)
Recognized by BIS as per IS-14543-2

STACK MONITORING

Report No :	ECI-NN-SM-172/12/2017	Report Date :	09.12.2017
Customer Name & Address	M/s. OPG Power Generation Pvt Ltd OPG Nagar, Periyaobulapuram village Madharpakkam Road, Gummidipoondi-601201 Tamil Nadu , India		
Customer Reference :	4540001999 Dt: 28/11/2017	Sample Reference No :	ECI-NN-SM-172/12/2017
Sample Drawn By :	ECI	Sample Received On :	05.12.2017
Sample Collected Date :	04.12.2017	Test Commenced On :	05.12.2017
Qty of Sample Received :	Thimble & 50 ml Soln	Test Completed On :	08.12.2017
Sample Description :	Stack	Sampling Method :	IS : 11255:P1:1985(R:2014)
Sample Mark:	Boiler -III		

S.No	PARAMETERS	UNITS	RESULTS	TEST METHOD	Max. Permissible TNPCE norms for General Emission Standards
1.	Ambient Temperature	°C	35	IS 11255:Part 03:2008 RA 2013	NA
2.	Carbon Monoxide (as CO)	% (v/v)	0.2	IS 13270:1992 RA:2014	1.0
3.	Flow rate	Nm ³ /hr	89	IS 11255:Part 03:2008 RA 2013	NA
4.	Flue Gas velocity	m/sec	9.4	IS 11255:Part 03:2008 RA 2013	NA
5.	Hydrocarbon (HC)	% (v/v)	< 0.2	IS 13270:1992 (RA:2003)	NA
6.	Oxides of Nitrogen (as NO _x)	mg/Nm ³	14.1	IS 11255:Part 07:2005 & IS 5182 :Part 06:2006 RA 2012	NA
7.	Particulate Matter (PM)	mg/Nm ³	51.7	IS 11255:Part 01:1985 RA:2014	150
8.	Port hole Height from G Level	M	5.0	---	NA
9.	Stack Diameter at port hole	m	0.07	---	NA
10.	Stack Height from G Level	m	120	---	NA
11.	Stack Temperature	°C	161	IS 11255:Part 03:2008 RA 2013	NA
12.	Sulphur Dioxide (as SO ₂)	mg/Nm ³	6.6	IS 11255:Part 02: 1985 RA:2014	NA
13.	Mercury (as Hg)	mg/Nm ³	BDL	IS 11255:Part 01:2003 & AAS Method	NA

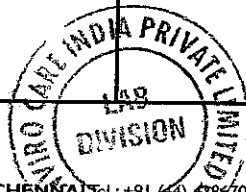
<--- End of Report --->

Verified By : *[Signature]*

Remarks : NA – Not Applicable.
BDL – Below Detectable Limit :

For ENVIRO CARE INDIA PRIVATE LIMITED
(Laboratory Division)

[Signature]
Authorized Signatory



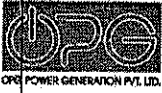
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**SOP OF COAL
SPONTANEOUS COMBUSTION**



Safety Monitoring in Coal handling area

Monitoring involves scheduled (8 hr.) visual inspections and recordings of coal stockpiles with specific attention to the presence of haze, smoke emissions or spontaneous combustion odour. A thermocouple is inserted into the stockpile at specific positions to measure temperature in every 24 hours

Normally, wet coal will show signs of water sweating and slow rise in temperature in that area. Those areas to be watched regularly for any increase in steam

The following details to be recorded to monitor the stockpile:

- 1) Date of stacking
- 2) Type of coal
- 3) Stockpile temperature readings
- 4) Date of reclaiming

The record assist in the management of residency time and subsequent control measures for spontaneous combustion of stockpiled coal

A major preventive measure is regular scheduled stockpile observations. These observations assist in early identification of hot spots of spontaneous combustion.

Mitigation Measures:

- 1) The Bottom portion of the pile to be manually compacted with the help of shovels to prevent air from flowing into or out of the bottom of the pile when the coal pile is warmer than ambient conditions
- 2) In case of the coal being unable to reclaim due to some reasons and if smoke comes out, the smoldering portion to be taken out of the pile and water to be sprayed on the smoldering coal and allow it to cool and the area to be compacted to prevent further air contact
- 3) Fly ash slurry can be applied at the toe portion of the Pile to completely blanket the portion from Air contact
- 4) ile should be stacked such that there is sufficient gap between each piles

Handwritten signature

LDO storage License copy



भारत सरकार
 Government of India
 वाणिज्य और उद्योग मंत्रालय
 Ministry of Commerce & Industry
 पेट्रोलियम तथा विस्फोटक सुरक्षा समझौता (पिसो)
 Petroleum & Explosives Safety Organisation (PESO)
 पंचमहा तल, चन्नाई, सी.पी.ओ. कॉम्प्लेक्स, सेमिनरी हिल्स
 संपत्ति: 440008
 6th Floor, A-Block, CCG Complex, Seminary Hills,
 Nagpur - 440008

E-mail: explosives@explosives.gov.in
 From/Fax No: 0712-2510248, Fax: 2610677

दिनांक (Date) 08/01/2015

संख्या (No): P/HQ/TN/15/4786/P2266171

सेवा में (To):

M/s. M/S ORG Power Generation Pvt. Ltd.,
 187 St. Marys Road Awarpet,
 NA,
 Chennai,
 District: CHENNAI,
 State: Tamil Nadu
 PIN: 600018

संबंधित (Subject): प्लॉट No. S. No. 195/2A, NA, Pappankuppam, Taluka: Thiruvallur, District: THIRUVALLUR, State: Tamil Nadu, PIN: 998999 में विद्यमान पेट्रोलियम वर्ग B अतिरिक्त - पेट्रोलियम विनियम 2002 के अंतर्गत
 खण्ड XV में जारी अनुमति सं P/HQ/TN/15/4786 (P226617) - संशोधन के संदर्भ में।
 Existing: Petroleum Class B installation at Plot No. S. No. 195/2A, NA, Pappankuppam, Taluka: Thiruvallur, District: THIRUVALLUR, State: Tamil Nadu, PIN: 998999. Licence No: P/HQ/TN/15/4786 (P226617) - granted in form XV under Petroleum Rules 2002 - Amendment regarding

संबंधित (Re):

कृपया आपके उपरोक्त विषय से संबंधित पत्र संख्या DPGPG/JMD/CCOW/1443/14-15 दिनांक 08/01/2014 का संदर्भ ग्रहण करें।
 Reference to your letter No. DPGPG/JMD/CCOW/1443/14-15 dated 08/01/2014 on the above subject

दिनांक 31/12/2014 तक वैध अनुमति संख्या P/HQ/TN/15/4786 (P226617) दिनांक 08/01/2015 निम्नलिखित वर्ग B स्तंभों में पेट्रोलियम भंडारण के लिए वया संशोधित कर इस पत्र के साथ आदेश का रहा है।
 Licence No. P/HQ/TN/15/4786 (P226617) dated 08/01/2014 valid upto 31/12/2014 is returned herewith duly amended with respect to Capacity Amendment.

विस्फोटक में अनुमति मात्रा (Quantity allowed in KL)

पेट्रोलियम का विवरण (Description of Petroleum)

वर्ग A पेट्रोलियम (Petroleum Class A, in bulk)	NIL
वर्ग A पेट्रोलियम से अलग (Petroleum Class A, otherwise than in bulk)	271.00 KL
वर्ग B पेट्रोलियम (Petroleum Class B, in bulk)	NIL
वर्ग B पेट्रोलियम से अलग (Petroleum Class B, otherwise than in bulk)	NIL
वर्ग C पेट्रोलियम (Petroleum Class C, in bulk)	NIL
वर्ग C पेट्रोलियम से अलग (Petroleum Class C, otherwise than in bulk)	271.00 KL

कुल मात्रा (Total)

कृपया सही है।

Please acknowledge the receipt.
 Note: Your Balance Amount with the Organisation is Rs. 2222, which will be used for processing of the same License in future

आपका (Yours faithfully)

(आर.पी.सिंह)
 R.P. Singh
 उप मुख्य विस्फोटक नियंत्रक
 Dy. Chief Controller of Explosives
 एवं मुख्य विस्फोटक नियंत्रक
 For Chief Controller of Explosives
 नागपुर
 Nagpur

Copy forwarded to :-
 1. The Fire Control Revenue Officer, Tiruvallur (T.N.), THIRUVALLUR (Tamil Nadu) with reference to his NOC No. R-37212/08 M3 Dated 17/06/2009
 2. Dy. Chief Controller of Explosives, South Circle Office, CHENNAI. A Copy of the licence along with approved plan is enclosed.
 3. Dy. Chief Controller of Explosives, Sivakasi, THIRUVHENGUR. A Copy of the licence along with approved plan is enclosed.

Chief Controller of Explosives,
 Nagpur

(आपके जानकारी जैसे अधिकतम की क्षमता, शुल्क तथा अन्य विवरण के लिए हमारी वेबसाइट <http://peso.gov.in> पर है।)
 (For more information regarding status fees and other details please visit our website <http://peso.gov.in>)

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भारत सरकार
Government of India
वाणिज्य और उद्योग मंत्रालय
Ministry of Commerce & Industry
पेट्रोलियम तथा विस्फोटक सुरक्षा समिति (पेसो)
Petroleum & Explosives Safety Organisation (PESO)
वायदा तंत्र, ए-ब्लॉक, सी.जी.ओ. कॉम्प्लेक्स, सेमिनारी हिल्स
नागपुर- 440006
5th Floor, A-Block, CGO Complex, Seminary Hills,
Nagpur - 440006

E-mail: explosives@explosives.gov.in
Phone/Fax No: 0712-2510248, Fax: 2510577

संख्या /No. PIHQ/TN/15/4786 (P226617)

दिनांक /Dated 08/01/2015

सेवा में /To

M/s. M/s OPG Power Generation Pvt. Ltd.,
107 St. Marys Road Alwarpet,
NA,
Chennai,
District: CHENNAI,
State: Tamil Nadu
PIN: 600018

विषय /Subj: Plot No. S. No. 195/2A, NA, Peppankuppam, Taluka: Thiruvallur, District: THIRUVALLUR, State: Tamil Nadu, PIN: 999999 में स्थित पेट्रोलियम वर्ग B अतिथिस्थल - पेट्रोलियम नियम 2002 के अंतर्गत प्रकृ. XV में जारी अनुमति सं. PIHQ/TN/15/4786 (P226617) - स्वीकृति के संदर्भ में।
Existing Petroleum Class B installation at Plot No. S. No. 195/2A, NA, Peppankuppam, Taluka: Thiruvallur, District: THIRUVALLUR, State: Tamil Nadu, PIN: 999999- Licence No. PIHQ/TN/15/4786 (P226617) - granted in form XV under Petroleum Rules 2002 - Amendment regarding

संदर्भ /Ref: 15]

कृपया आपके उपरोक्त विषय में संबंधित पत्र संख्या OPGPGJMD/CCOe/1443/14-15 दिनांक 05/01/2014 का संदर्भ ग्रहण करें।
Reference to your letter No OPGPGJMD/CCOe/1443/14-15 dated 05/01/2014 on the above subject.

दिनांक 31/12/2019 तक वैध अनुमति संख्या PIHQ/TN/15/4786 (P226617) दिनांक 08/01/2015 तिथिसे अधिकतम वर्ग B वायदाओं में पेट्रोलियम अडान के लिए गया संशोधित कर इस पत्र के साथ लौटाई जा रही है।
Licence No PIHQ/TN/15/4786 (P226617) dated 08/01/2015 valid upto 31/12/2019 is returned herewith duly amended with respect to Capacity Amendment.

पेट्रोलियम का विवरण /Description of Petroleum

किलोलीटरों में अनुमति क्षमता /Quantity licensed in KL

वर्ग A प्रचुर पेट्रोलियम /Petroleum Class A, in bulk	NIL
वर्ग A प्रचुर पेट्रोलियम से भिन्न /Petroleum Class A, otherwise than in bulk	NIL
वर्ग B प्रचुर पेट्रोलियम /Petroleum Class B, in bulk	271.00 KL
वर्ग B प्रचुर पेट्रोलियम से भिन्न /Petroleum Class B, otherwise than in bulk	NIL
वर्ग C प्रचुर पेट्रोलियम /Petroleum Class C, in bulk	NIL
वर्ग C प्रचुर पेट्रोलियम से भिन्न /Petroleum Class C, otherwise than in bulk	NIL
कुल क्षमता /Total	271.00 KL

कृपया सावटी दें।

Please acknowledge the receipt.

Note - Your Balance Amount with the Organisation is Rs. 5000/- which will be used for processing of the same licence in future

अभ्यर्थी /Yours faithfully

(अ.पी.सिंह)
(R.P. Singh)
उप मुख्य विस्फोटक नियंत्रक
Dy. Chief Controller of Explosives
मुख्य विस्फोटक नियंत्रक
For Chief Controller of Explosives
नागपुर
Nagpur

Copy forwarded to :-

1. The District Revenue Officer, Thiruvallur (T.N.), THIRUVALLUR (Tamil Nadu) with reference to his NOC No: RC-37212/09 M3 Dated 17/06/2009
2. Dy. Chief Controller of Explosives, South Circle Office, CHENNAI. A Copy of the licence along with approved plan is enclosed.
3. Dy. Chief Controller of Explosives, Sivakasi, VIRUDHUNAGAR. A Copy of the licence along with approved plan is enclosed.

*For Chief Controller of Explosives...
Nagpur

(अधिक जानकारी जैसे आवेदन की स्थिति, शुल्क तथा अन्य विवरण के लिए हमारी वेबसाइट <http://peso.gov.in> देखें।
(For more information regarding status fees and other details please visit our website: <http://peso.gov.in>)

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High Speed Diesel / Gas Oil
Indian Oil Diesel meets the requirements of
IS 1460: 2005 (5th Revision)

Sl. No.	Characteristics	Requirements		Method of Test
		BS II	BS III	
(i)	Acidity, inorganic	Nil	Nil	P:2
(ii)	Acidity, total mg of KOH/g, Max	To Report	To Report	P:2
(iii)	Ash, percent by mass, Max	0.01	0.01	P:4 / ISO 6245
(iv)	Carbon residue (Ramsbottom) on 10 percent residue ⁽¹⁾ percent by mass, Max	0.30	0.30	P:8 / ISO 10370
(v)	Cetane number ⁽²⁾ , Min	48 ⁽³⁾	51 ⁽³⁾	P:9 / ISO 5165
(vi)	Cetane index ⁽²⁾ , Min	46 ⁽³⁾	46 ⁽³⁾	D 4737 / ISO 4264
(vii)	Pour points ⁽⁴⁾ Max a) Winter b) Summer	3°C 15°C	3°C 15°C	P:10 / D 5949 or D 5950 or D 5985
(viii)	Copper strip corrosion for 3hr at 100°C	Not worse than No. 1	Not worse than No. 1	P:15 / ISO 2160
(ix)	Distillation, percent (v/v) recovered			P:18 / ISO 3405
	a) at 350°C	85	-	
	b) at 360°C	-	95	
	c) at 370°C	95	-	
(x)	Flash point			
	a) Abel °C, Min	35	35	P:20
	b) Pensky Martens closed cup ⁽⁵⁾ °C, Min	66	66	P:21
(xi)	Kinematic viscosity, cSt, at 40°C	2.0 to 5.0	2.0 to 5.0	P:25 / ISO 3104
(xii)	Sediments, percent by mass, Max	0.05	-	P:30
(xiii)	Total Contamination, mg/kg	24	24	EN 12662
(xiv)	Density at 15°C ⁽⁶⁾ , kg/m ³	820-860	820-845	P:16 or P:32 ⁽⁷⁾ / D 4052 / ISO 3675 or ISO 12185
(xv)	Total sulphur ⁽⁸⁾ , mg/kg, Max	500	350	IP 336 or 4294, ⁽⁹⁾ ISO 14596 or ISO 8754/ P:83 / D 2785 / D 5433 / D 2622 / D 3120
(xvi)	Water content, percent(v/v) Water content, mg/kg, Max	0.05 -	- 200	P:40 / ISO 3733 / ISO 6296 / ISO 12937
(xvii)	Cold Filter Plugging point (CFPP) ⁽⁴⁾ Max a) Winter b) Summer	6°C 18°C	6°C 18°C	P:110 / D 6371
(xviii)	Total sediments ⁽¹⁰⁾ mg per 100 ml, Max	1.5	-	Annex A / ISO 11205 / D 2274 ⁽¹⁰⁾
(xix)	Oxidation Stability, g/m ³ , Max	-	25	ISO 12205 or D 2274
(xx)	Polycyclic Aromatic Hydrocarbon (PAH) percent by mass, Max	-	11	IP 391 or EN 1296
(xxi)	Lubricity corrected wear scar diameter (WSD 1.4) at 60°C, microns, Max	460	460	ISO 12156-1
(xxii)	Oxygen content ⁽¹¹⁾ percent by mass, Max	0.6	0.6	Annex B

Q.H.

NOTES

- 1 This limit is applicable prior to addition of ignition improvers, if used. In case a value exceeding the limit is obtained on finished fuels in the market, ASTM D 4046 / ISO 13759 shall be used to establish the presence of nitrate containing compound. In such case the present limit for carbon residue cannot be applied. However, the use of ignition improver does not exempt the manufacturer from meeting this requirement prior to the addition of additives.
- 2 Fuel meant for vehicles meeting Bharat Stage II emission norms is required to meet either of these two parameters.
- 3 For fuel processed from Assam crude, cetane number and cetane index is relaxed by 3 units.
- 4 Winter shall be the period from November to February in central and northern plains of India (both months inclusive) and rest of the months of the year shall be called as summer.
- 5 Applicable for Naval applications and fishing vessels requiring high flash HSD.
- 6 For fuel processed from Assam crude, the density range is relaxed to 820-870 and 820-850 for Bharat Stage II and Bharat Stage III grades respectively.
- 7 In case of dispute P:32 shall be the referee test method.
- 8 For HSD supplied to Indian Navy, the limit of sulphur shall be in agreement between the buyer and the supplier.
- 9 In case of dispute, ASTM D 4294 shall be the referee test method.
- 10 This test shall be carried out only at the refinery or manufacturer's end. As an alternative, the test method given in Annex A can also be used with a limit of 1.6 mg/100 ml. In case of dispute, ASTM D 2274 shall be referee method.
- 11 Shall be applicable only for HSD blended with 5 percent (v/v) Bio-diesel and the limit shall proportionately vary as and when the different blending percent of bio-diesel is permitted.

Last Updated on September 26, 2007

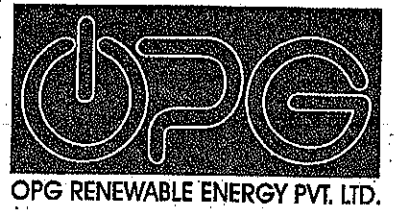
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Fly Ash Customer List

Fly Ash Customer Details			
S no	Name	Contact Person	Address
1	Amba Recycler	Ashok	Chennai
2	Amma Fly ash Bricks	Murail	21B, By pass road, Gummidipoondi-601201
3	Amman Roadways Agency Pvt Ltd		200A, Padmavathy complex, Salem Road, Namakkal-637001
4	B.Sekar	Sekar	Chennai
5	Hyderabad Industrial Ltd (HIL)	Sasthri	Kanigapuram, Periyapalayam, Thiruvallur
6	Kavery Industries	R.V Reddy	Nemalure, Matharapakkam
7	Lakshmi Agencies	Parasuraman	59/29, Arunachalam 2nd St, (Opp Sivan Kovil), Arakkonam-631001
8	Methra Industries India Pvt Ltd	Manokaran	New No: 62, Panjallyamman kovil st, Arumbakkam, Chennai-106
9	Munusamy & Co		Chennai
10	Om Muruga	Prakash	No 27, Madhalaiyar st, Mannelore, Gummidipoondi Taluk, Thiruvallur-601201
11	Sastha Enterprises		Ambattur, Chennai
12	Sri Balaji Agencies	Srinivasan	Chennai
13	Sri Kameshwaran Fly Ash Bricks		Ponneri - 601204
14	Sri Preeven Enterprises	Mony	25, Indranagar, Nanganallur, Mathavaram, Chennai-600061
15	The India Cements Ltd	Mohammad	PSN Nagar, Dafavoi, Ariyalur-621704
16	Thirumalai Agencies	Gopal	Mathavaram
17	Ultra Tech Cements Ltd	Arulprakash	Reddypalayam Post, Reddypalayam, Ariyalur-621704
18	Vasantham Enterprises	Selvaraj	No 19, By-pass road, Gummidipoondi
19	Boomi Brick Industries		Boomi Brick Industries, Veeraraghavapuram village, Thiruvallur-602001
20	Vijay Agency		11E, 21A Michael Thottam, Housing Uhit, Metturdam-636401
21	Saravana Supply		GNT Road, Kavarpettai-601206
22	Raydium Flyash Bricks		126/2A, 2B Vanniakkam Village 601203 Ponneri Taluk,
23	Sri Nithya Supplier		3/33, Nagaraja kandigai village, Gummidipoondi - 601201
24	Sree Kandan Traders		Sree Kandan Traders, Veeraraghavapuram Village, Thiruvallur District -602021
25	Thirumurugan Concrete Blocks		12/3 Big street, Dhimmavaram, Chengalpattu - 603101

Bh.

Form V (2016-17)



28-April-17

OPGPG: JMD/PCB/2016-17/76

The Joint Chief Environmental Engineer
Tamil Nadu Pollution Control Board
Chennai Region
77A, South Avenue Road,
Ambattur Industrial Estate
Chennai - 600058.

Sir,

Sub: TNPCB Industries – M/S OPG Power Generation Private Limited – Submission of Environmental Statement – Reg.

We Herewith submit the Annual Environmental Statement in Form V for the financial year 2016-2017 ending with March 2017

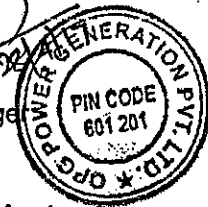
This is for your kind information and Documentation.

For further any clarification or data if required we are at your disposal.

Thanking you,

Yours Sincerely,
For OPG POWER GENERATION PRIVATE LIMITED

G.Mohan
EHS – Manager



- Cc: 1. The Member Secretary, TNPCB Board, Chennai 32 with Encl.
2. The District Environmental engineer, Thiruvallore District – Only Copy of letter

New No. 6, Sardar Patel Road, Guindy, Chennai - 600 032.
Phone : +91 44 4291 1222, Fax : +91 44 4291 1209

E-mail : admin@opgpower.com

Website : www.opgpower.com

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Sl. No.	Name of the Products	Process water consumption per unit of product output l/kwh	
		During the previous financial year	During the current financial year
		(1)	(2)
1.	Electricity	0.073 liter/kwh – Unit 1 0.054 liter/kwh – Unit 2 0.072 liter/kwh – Unit 3 0.048 liter/kwh – Unit 3	0.038 liter/kwh – Unit 1 0.058 liter/kwh – Unit 2 0.061 liter/kwh – Unit 3 0.046 liter/kwh – Unit 4

(2) Raw Material Consumption (Specific Coal consumption)

Sl. No.	Name of the Raw materials	Consumption of raw material per unit	
		During the previous financial year	During the current financial year
		(1)	(2)
1.	Blended Coal	0.777 kg/kwh –Unit 1 0.740 kg/kwh –Unit 2 0.748 kg/kwh –Unit 3 0.641 kg/kwh –Unit 4	0.764 kg/kwh –Unit 1 0.780 kg/kwh –Unit 2 0.739 kg/kwh –Unit 3 0.598 kg/kwh –Unit 4

*Industry may use codes if disclosing details of raw material would violate contractual obligations, otherwise all industries have to name the raw materials used.

Qm.

PART E

SOLID WASTES

	Total quantity	
	During the previous financial year	During the current financial year
(a) From process	Fly Ash 174316 MT Bottom Ash 40644 MT	Fly Ash 129815 MT Bottom Ash 30142 MT
(b) From pollution control facilities	Nil	Nil
(c) (1) Quantity recycled or re-utilised with in the unit	Nil	Nil
(2) Sold	Fly Ash 174316 MT Bottom Ash 40644 MT	Fly Ash 129815 MT Bottom Ash 30142 MT
(3) Disposed	Nil	Nil

PART F

Please specify the characterization (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adapted for both these categories of wastes.

- Hazardous waste production: Approximately 1000 kg of used/spent oil of all 4 units disposed to authorized recycler.
- Dry Fly ash and Bottom ash Disposal Practice:
 - _____ Dry Fly ash : 100% disposal to end-user – Cement industries & brick making
 - _____ Dry Bottom ash : 100% disposal to end-user – Filling for Road laying & Brick making

- Typical Fly ash analysis:

Unburnt carbon: <1%	SiO ₂ : 51.29 %	Al ₂ O ₃ : 28.52 %
Fe ₂ O ₃ : 5.48 %	CaO: 7 %	MgO: 1.91 %
TiO ₂ : 1.28 %	Na ₂ O: 0.7 %	K ₂ O: 0.84 %
P ₂ O ₅ : 0.1 %	SO ₃ : 0.4 %	

JH

PART I

Any other particulars for improving the quality of environment

- a) Green belt is developed in more than 33% of the total area and this task is kept in continual improvement
- b) ISO 14001: 2004 Environment Management System and OHSAS 18001:2007 Occupational Health & Safety Accreditation System certificates were obtained and the systems are maintained well.
- i) Rainwater harvesting by infiltration-recharge pits and open ponds were established based on independent hydrological study
- c) 100% disposal of fly ash and bottom ash are being ensured.
- d) All the noise generating equipment were covered with acoustics to avoid the noise pollution

PH.

Noise level Report

April 2017 – Sep 2017



AMBIENT NOISE LEVEL MONITORING - April 2017 to September 2017

April- 2017

Ambient NOISE LEVEL (April 2017)								
Date	Day Time (6.00 AM to 10.00 PM)				Night Time (10.00 PM to 06.00 AM)			
	North Gate	South Gate	Kanishk Gate	RR Thulasi	North Gate	South Gate	Kanishk Gate	RR Thulasi
Limits in dB	55				45			
07.04.2017	51.2	52.1	53.8	52.3	42.1	42.1	44.1	39.6
15.04.2017	50.1	50.8	51.5	51.5	41.4	42	41.6	41
24.04.2017	50.2	50.1	50.5	50	42.1	41	41	41.8
30.04.2017	50.2	51.2	50.6	51.4	41.8	41.6	42	41

May-2017

Ambient NOISE LEVEL (May 2017)								
Date	Day Time (6.00 AM to 10.00 PM)				Night Time (10.00 PM to 06.00 AM)			
	North Gate	South Gate	Kanishk Gate	RR Thulasi	North Gate	South Gate	Kanishk Gate	RR Thulasi
Limits in dB	55				45			
03.05.2017	52.2	51.4	52.1	51.1	41.8	42.8	41.8	42.3
09.05.2017	50.2	50.1	50.5	50	42.5	41.2	41.4	41.2
18.05.2017	51.2	52.1	53.8	52.3	42.3	42.4	43.8	42.1
26.05.2017	51.4	50.8	51.4	52.1	42.1	41.8	41.4	41.8

GR



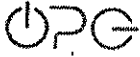
June -2017

Ambient NOISE LEVEL (June 2017)								
Date	Day Time (6.00 AM to 10.00 PM)				Night Time (10.00 PM to 06.00 AM)			
	North Gate	South Gate	Kanishk Gate	RR Thulasi	North Gate	South Gate	Kanishk Gate	RR Thulasi
Limits in dB	55				45			
07.06.2017	51.2	51.6	51.7	50.8	42.5	42.1	42	42.2
15.06.2017	51.2	52.1	53.8	52.3	42.1	41.8	42.2	40.1
21.06.2017	51.2	51.4	50.8	51.2	41.8	41.8	41.5	41.8
28.06.2017	50.2	49.5	51.2	49.2	42.2	41.5	41.2	40.5

July -2017

Ambient NOISE LEVEL (July 2017)								
Date	Day Time (6.00 AM to 10.00 PM)				Night Time (10.00 PM to 06.00 AM)			
	North Gate	South Gate	Kanishk Gate	RR Thulasi	North Gate	South Gate	Kanishk Gate	RR Thulasi
Limits in dB	55				45			
04.07.2017	51.2	51.8	52.2	52.8	42.4	42.6	42.2	42.1
12.07.2017	50.1	51.2	51.6	50.4	41.8	42.2	41.8	41.6
19.07.2017	50.2	50.1	50.5	50	42.1	41	41	41.8
27.07.2017	50.4	51.2	50.8	51	41.8	41.4	41.8	41.8

gjh.



August- 2017

Ambient NOISE LEVEL (August 2017)								
Date	Day Time (6.00 AM to 10.00 PM)				Night Time (10.00 PM to 06.00 AM)			
	North Gate	South Gate	Kanishk Gate	RR Thulasi	North Gate	South Gate	Kanishk Gate	RR Thulasi
Limits in dB	55				45			
08.08.2017	51.2	52.1	52.4	52.3	42.1	42.1	44.1	39.6
16.08.2017	50.2	51.4	51.2	50	41.4	41.4	40.8	40.6
22.08.2017	50.1	51.2	50.4	50.4	41.8	42.2	41.8	41.6
29.08.2017	52.1	52.1	51.8	52.1	41.8	41.4	44.2	41.1

September -2017

Ambient NOISE LEVEL (September 2017)								
Date	Day Time (6.00 AM to 10.00 PM)				Night Time (10.00 PM to 06.00 AM)			
	North Gate	South Gate	Kanishk Gate	RR Thulasi	North Gate	South Gate	Kanishk Gate	RR Thulasi
Limits in dB	55				45			
02.09.2017	51.2	51.8	52.2	52.8	42.4	42.6	42.2	42.1
08.09.2017	51.2	52.1	53.8	52.3	42.1	42.1	44.1	39.6
15.09.2017	50.2	50.1	50.5	50	42.1	41	41	41.8
23.09.2017	50.4	51.2	50.8	51	41.8	41.4	41.8	41.8

Sh.