

Your application has been **Submitted** with following details

<b>Proposal No</b>	IA/KL/MIS/24820/1910
<b>Compliance ID</b>	28165736
<b>Compliance Number(For Tracking)</b>	EC/M/COMPLIANCE/28165736/2023
<b>Reporting Year</b>	2023
<b>Reporting Period</b>	01 Dec(01 Apr - 30 Sep)
<b>Submission Date</b>	01-12-2023
<b>IRO Name</b>	P Subramanyam
<b>IRO Email</b>	agmu102@ifs.nic.in
<b>State</b>	KERALA
<b>IRO Office Address</b>	Budgam

**Note:-** SMS and E-Mail has been sent to P Subramanyam, KERALA with Notification to Project Proponent.



# Petronet LNG Limited

Survey No. 347, Puthuvypu P.O.  
Kochi - 682 508, India.  
Tel: +91- 484 - 2757302 Fax: +91- 484-2502264  
www.petronetlng.in  
CIN L74899DL1998PLC093073  
PAN: AAACP8148D. GST: 32AAACP8148D1ZP

PLL/KOCHI/MoEF&CC/2023-24/04

01.12.2023

## Additional Principal Chief Conservator of Forests (C)

Ministry of Environment, Forest and Climate Change,  
Regional Office (SZ),  
Kendriya Sadan, 4<sup>th</sup>Floor, E&F Wings, 17<sup>th</sup> Main Road,  
Koramangala II Block,  
Bangalore – 560034.

**Sub: Compliance report to Environment Clearance accorded to the LNG Terminal at Puthuvypu, Kochi.**

**Ref: Environment Clearance No. J-16011/26/2001-IA-III vide your letters dated 31<sup>st</sup> January 2013.**

Sir,

The Six-monthly compliance report for the above clearance for the period of April to September 2023 attached.

Thanking You

Sincerely,



**Upinder Kumar**

Chief General Manager & Vice President (Plant Head)

**Copy:** The Environmental Engineer, District Office 1, Kerala State Pollution Control Board, Gandhinagar, Kochi – 682 020.



### Registered & Corporate Office:

World Trade Centre, First Floor, Babar Road, Barakhamba Lane,  
New Delhi - 110 001 (INDIA)  
Tel: +91-11-23411411 / 23472525 Fax: +91-11-23472550

### Dahej LNG Terminal:

GIDC Industrial Estate, Plot No. 7/A, Dahej Taluka: Vagra, Dist.  
Bharuch - 392130 (Gujarat)  
Tel: +91-2641-257249 Fax: +91-2641-257252

**Compliance report of EC&CRZ Clearance vide No. J-16011/26/2001-IA-III dated 31.01.2013 for enhancing the re-gasification capacity from 2.5 to 5 MMTPA at Puthuvypeen Island, Kochi, Kerala by M/s Petronet LNG Ltd.**

**Period: April to September 2023**

<b>Sl. No</b>	<b>Condition Type</b>	<b>Condition Description</b>	<b>Compliance Status</b>
1	Specific	"Consent for Establishment" shall be obtained from State Pollution Control Board under Air and Water Act and a copy shall be submitted to the Ministry before start of any construction work at the site.	"Consent to Establish" vide No. PCB/HO/EKM/ICER/03/2013 obtained from KSPCB and a copy of the same has already submitted to MoEF&CC along with the six-monthly compliance report for the period April to September 2013.
2	Specific	NOC/Clearance shall be obtained confirming that all the firefighting provisions are as per standards specified by the Chief Controller of Explosives/Petroleum & Explosives Safety Organization (PESO) for the additional storage tanks.	No additional LNG storage tank was envisaged for this enhancement. PESO approval for the existing storage tank is submitted to MoEF&CC with the HYCR for the period October 2022 to March 2023.
3	Specific	Leak detection/warning system shall be provided at strategic locations. Necessary control measures capable of remote operation to shut down the leakage, if any, should be provided.	Flame, gas and spill detection system (FGS) & Emergency shutdown system (ESD) are installed in the terminal to mitigate any such incidents.
4	Specific	Appropriate safety devices such as masks should be provided for use by the workers handling the products at the site and their usage by them should be ensured.	Safety Helmets, Safety Shoes, Goggles, SCBAs, Cryogenic suits, Cryogenic hand gloves, masks are provided to employees & workers. Dust masks are provided to employees & workers involved in dust generating work.
5	Specific	Project proponent should implement all the recommendations stipulated in the EIA, EMP and Risk Assessment reports pertaining to the project.	PLL is complying with all the recommendation stipulated in the EIA, EMP and Risk Assessment reports (QRA) pertaining to our project.
6	Specific	The commitments made during the Public Hearing and as recorded in the Minutes shall be complied with letter and spirit.	Public Hearing commitments are incorporated in the final EIA Report for further action. Commitments are fulfilled and the details were submitted along with six monthly compliance report for October 2015 to March 2016.

7	Specific	All the conditions stipulated in the earlier Clearance including the recommendations of Environment Management Plan, Disaster Management Plan shall be strictly complied with.	All the conditions stipulated in the earlier clearances including the recommendations of EMP and DMP are strictly complied with.
8	Specific	The Committee noted the proponent's statement that augmentation of the capacity from 2.5 MMTPA to 5.0 MMTPA will not induct additional environmental issues and that the planned system will take care of the overall requirements of the facility. However, impacts if any arising out of increased activities to meet the additional capacity shall be brought to the notice of the Ministry with appropriate mitigation measures that will be put in place, to ensure that the given commitment of 'no additional impact' is maintained in letter and spirit.	Noted. However, Augmentation of the capacity from 2.5 MMPTA to 5.0 MMTPA will not induct additional environmental issues.
9	Specific	At least 5% of the total cost of the project shall be earmarked towards the Corporate Social Responsibility (CSR) and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry prior to the commencement of the project. Implementation of such program shall be ensured accordingly in a time bound manner.	5% of the total cost of augmentation of the capacity is earmarked towards CSR projects. A detailed CSR plan was submitted by PLL vide letter No: PLL/KOCHI/MOEF/ 13/C-06 dated 22.03.2013.
10	Specific	It shall be ensured that the proposed activity shall not cause any disturbance to the Fishing activity.	The proposed augmentation/ enhancement of plant capacity does not involve any modification in current marine facilities. Hence will not cause disturbance to fishing activity.
11	Specific	The smooth and safe operation of the system will be ensured by incorporating a computerized SCADA	SCADA, FGS, ESD systems are installed for early detection of any leak and for safe shutdown. RLNG pipeline belongs to GAIL and gas supply will be stopped by PLL upon receiving communication from GAIL.

		(Supervisor Control and Data Acquisition) system. Any leakage in the pipeline shall be immediately detected by the computer system and product pumping shall be immediately cut off.	
12	Specific	Regular patrolling of the pipelines needs to be done. This will help in identifying any activity that have the potential to cause pipeline damage or to identify small leaks whose effects are too small to be detected by instrument.	RLNG pipelines belongs to GAIL. Pipelines within the terminal are equipped with temperature and pressure sensors to raise alarm in case of abnormalities. Gas Detectors are installed near pipelines to raise warnings.
13	Specific	The project shall be carried out as per international standards in vogue and duly certified by competent authorities before commissioning.	The project was carried out in accordance with relevant international and national standards. All equipment's have been inspected and certified by competent third party or by competent authorities.
14	Specific	Oil Spill Contingency Management Plan shall be put in place along with the dedicated staff to deal with Oil spill in and around the port area shall be provided in the port. No oily wastes shall be discharged into the water bodies/mangrove areas.	Oil spill contingency plan is in place as prepared by Cochin Port Trust (CoPT). Any kind of spillage incidents will be handled by Cochin Port Trust. Details of oil spill contingency plan was submitted to MoEF&CC along with the HYCR for the period October 2012 to March 2013.
15	Specific	Regular mock drills shall be conducted to check the effectiveness of the on-site Disaster Management Plan. The recommendations made in the Environmental Management Plan and Disaster Management Plan, as contained in the Environment Impact Assessment and Risk Analysis reports of the project, should be effectively implemented.	Mock drills are conducted in every quarter for different emergency scenarios listed out in the Quantitative risk assessment report (QRA). All the recommendations are being implemented.
16	Specific	No construction works other than those permitted in Coastal Regulation Zone Notification shall be carried out in Coastal Regulation Zone area.	Noted. No other construction work will be done in CRZ area.

17	Specific	The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.	PLL has set up an Environment Management Cell (EMC) under Chief General Manager & Vice President (Plant Head) with members from plant departments
18	Specific	The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.	The fund earmarked for environment management is included in the budget and will not be diverted for other purposes.
19	General	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.	PLL have taken appropriate measure while undertaking digging activities. We conduct ground water analysis on half yearly basis and the latest report is enclosed <b>as Annexure 1</b> .
20	General	Full support shall be extended to the officers of this Ministry/Regional Office at Bengaluru by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.	PLL extend its full support to the officers of this ministry's Regional Office, Bengaluru and the officers of the Central and State Pollution Control Board during the inspection for monitoring purpose.
21	General	A six-Monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bengaluru regarding the implementation of the stipulated conditions.	Six monthly reports have regularly been submitted to regional MoEF&CC office for all EC & CRZ Clearance obtained for the Kochi LNG Terminal project
22	General	Ministry of Environment & Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary, in the interest of environment and the same shall be complied with.	PLL will comply with additional conditions, if any suggested by the ministry or any other competent authority in writing.

23	General	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.	Noted. PLL will abide by all Environment clearance conditions.
24	General	In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.	Project profile and implementation agency were not changed during construction. The project was commissioned in the year, 2013.
25	General	The project proponents shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work.	Site appraisal clearance obtained on 28 <sup>th</sup> Feb 2011. No separate land developmental work was required, as this involved only augmentation of equipment in the same land.
26	General	A copy of the clearance letter shall be marked to concerned Panchayat/local NGO, if any, from whom any suggestion/representation has been made received while processing the proposal.	Letter submitted to Panchayat vide no. PLL/Kochi/MoEF/GP/2013/001 dated 07th March-2013. A copy of the letter has already been submitted with six monthly compliance reports for the period October 2012 to March 2013.
27	General	State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Centre and Collector's Office/Tahsildar's office for 30 days.	Action taken by Kerala State Pollution control board (KSPCB).
28	General	These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 1994, including the amendments and rules made thereafter.	Compliance of EC clearance conditions and other applicable statutes are being ensured regularly.
29	General	All other statutory clearances such as the approvals for storage of diesel from Chief	All the applicable statutory approvals and clearances have been obtained by PLL before commissioning & during operation of the terminal.

		Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.	
30	General	The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental and CRZ Clearance and copies of clearance letters are available with the Kerala Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at <a href="http://www.envfor.nic.in">http://www.envfor.nic.in</a> . The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Bengaluru.	Advertised in two local newspapers widely circulated in the region around the project. Copy of advertisement submitted along with the six-monthly compliance report for the period April to September, 2013.
31	General	This clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.	We noted here that this clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No.460 of 2004.
32	General	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.	Status of the compliance, of various stipulated environmental conditions and environmental safeguards are uploaded in PLL's website



33	General	Any appeal against this clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	We understand that any appeal against this clearance shall lie with the National Green Tribunal as per applicable statutes.
34	General	A copy of the clearance letter shall be sent by the proponent to concern Panchayat, Zilla Parisad/ Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	Letter submitted to Panchayat vide no. PLL/Kochi/MoEF/GP/2013/001 dated 07th March-2013. A copy of the letter was submitted with HYCR for the period October 2012 to March 2013. Copy of letter is put on PLL website also.
35	General	The proponent shall upload the status of compliance of the stipulated 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.	Status of compliance reports are being regularly updated by Petronet on its website, petronetIng.in and being submitted to MoEF&CC & KSPCB.
36	General	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.	Status of compliance reports are being regularly submitted to Regional Office of MoEF and KSPCB district office.

37	General	<p>The environmental statement for each financial year ending 31st March in Form-V as is 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 compliance of Clearance conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.</p>	<p>Form-V (Environment Statement)-FY 2022-23 is displayed on company website along with the status of compliance of EC conditions. Environment statement for FY 2022-23 is <b>enclosed here as Annexure 2.</b></p>
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## TEST REPORT

ULR No: TC540223000010835F

LRI No.: SEAAL23061323A

Date: 21-06-2023

Page 1 of 2

### CUSTOMER DETAILS

Customer Name & Address	<b>M/s Petronet LNG Limited</b> Survey No.347, Puthuvypu P.O Kochi, Ernakulam District
Customer Reference	Test Request Date: 12-06-2023

### SAMPLE DETAILS

Product Category	Water	Sample Code	WT23060220
Sample Name	Ground Water	Sample Received on	13-06-2023
Sample Description by Customer	Bore Well	Temperature @ Receipt	4°C
Sample Conditions at Receipt	Fit for Analysis	Test Commenced on	14-06-2023
Sample Quantity & Packing	10 L & 125 ml in a Plastic Bottle	Test Completed on	20-06-2023
Information Provided by Customer	---	Sampled by	Lab Authorized Sampler

### DETAILS OF SAMPLING

Sample Source	Bore Well (East Side)	Date of Sampling	12-06-2023
Sampling Procedure	SEAAL/ENL/GEN/SOP/01 & SEAAL/MBL/SOP/06	Sample Temperature	24°C

### TEST RESULTS - CHEMICAL PARAMETERS

Sl. No.	PARAMETERS	TEST METHOD	UNIT	RESULT
1	pH	IS 3025 (Part 11):1983	---	8.32
2	Temperature	APHA 23rd 2550 B Edn: 2017	°C	30
3	Total Dissolved Solids	IS 3025 (Part 16):1984	mg/L	1024
4	Electrical Conductivity	IS 3025 (Part 14):1984	µS/cm	1862
5	Turbidity	IS 3025 (Part 10):1984	NTU	<0.1
6	Chloride as Cl	IS 3025 (Part 32):1988	mg/L	328
7	Iron as Fe	IS 3025 (Part 53):2003	mg/L	0.13
8	Fluoride as F	APHA 23 <sup>rd</sup> Edition 4500-F- B D: 2017	mg/L	<0.10
9	Sulphate as SO <sub>4</sub>	IS 3025 (Part 24):1986	mg/L	112
10	Salinity	APHA 23rd 2520 - B Edn.: 2017	---	0.96
11	Mercury as Hg	IS 3025 (Part 48):1994	mg/L	BDL (LOD-0.001)

Shency Joy  
TM-Chemical  
Checked by:



Laju P N  
Laboratory Head  
Authorized Signatory

The results are related only to the samples submitted for analysis and this test report shall not be reproduced except in full, without the written approval of the laboratory.

### Standard<sup>S</sup> Environmental & Analytical Laboratories

Accreditation & Approval: NABL accredited Testing Laboratory as per ISO/IEC 17025:2017  
vide Certificate No. TC - 5402 & "A" Grade Laboratory approved by KSPCB.

K.J. Tower, Paltham, Udyogamandal P.O., Ernakulam-683 501, Tel. 0484-2546660, 93 87 27 24 02, 90 74 34 14 43  
Web: www.sealabs.in, E-mail: sealab@gmail.com

## TEST REPORT

ULR No: TC540223000010835F

LRI No.: SEAAL23061323A

Date: 21-06-2023

Page 2 of 2

### TEST RESULTS – CHEMICAL PARAMETERS

Sl. No.	PARAMETERS	TEST METHOD	UNIT	RESULT
12	Lead as Pb	IS 3025 (Part 47):1994	mg/L	<0.20
13	Copper as Cu	IS 3025 (Part 42):1992	mg/L	BDL (LOD-0.016)
14	Total Chromium as Cr	IS 3025 (Part 52):2003	mg/L	BDL (LOD-0.05)
15	Zinc as Zn	APHA 3111B 23rd Edn, 2017	mg/L	BDL (LOD-0.008)
16	Cadmium as Cd	IS 3025 (Part 41):1992	mg/L	BDL (LOD-0.003)
17	Cyanide as CN	IS 3025 (Part 27):2021	mg/L	<0.01
18	Oil & Grease	IS 3025 (Part 39): 2021	mg/L	<1.00
19	Dissolved Oxygen	IS 3025 (Part 38):1989	mg/L	6.80
20	Biochemical Oxygen Demand (3 days at 27 °C)	IS 3025 (Part 44):1993	mg/L	<2.00
21	Chemical Oxygen Demand	IS 3025 (Part 58):2006	mg/L	8.00
22	Pesticide	SEAAL/INS/RWM/SOP/01	µg/L	< 0.005

Note: BDL-Below Detection Limit,

LOD-Limit of Detection

Remark

\*\*\*End of Report\*\*\*

Shency Joy  
TM-Chemical  
Checked by:



Laju P N  
Laboratory Head  
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# Standards

## TEST REPORT

LRI No.: SEAAL23061323N	Date: 21-06-2023	Page 1 of 1
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Customer Name & Address	<b>M/s Petronet LNG Limited</b> Survey No.347, Puthuvypu P.O Kochi, Ernakulam District
Customer Reference	Test Request Date: 12-06-2023

### SAMPLE DETAILS

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Sample Conditions at Receipt	Fit for Analysis	Test Commenced on	14-06-2023
Sample Quantity & Packing	10 L & 125 ml in a Plastic Bottle	Test Completed on	20-06-2023
Information Provided by Customer	---	Sampled by	Lab Authorized Sampler

### DETAILS OF SAMPLING

Sample Source	Bore Well (East Side)	Date of Sampling	12-06-2023
Sampling Procedure	SEAAL/ENL/GEN/SOP/01 & SEAAL/MBL/SOP/06	Sample Temperature	24°C

### TEST RESULTS - CHEMICAL PARAMETERS

Sl.No.	PARAMETERS	TEST METHOD	UNIT	RESULT
1	Insecticide	SEAAL/INS/RWM/SOP/01	µg/L	Absent

Remark

\*\*\*End of Report\*\*\*



Shency Joy  
TM-Chemical  
Checked by:



Laiju P N  
Laboratory Head  
Authorized Signatory

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**Standards Environmental & Analytical Laboratories**

Approval: "A" Grade Laboratory approved by Kerala State Pollution Control Board.

Behind BPCL Petrol Pump, Edayar, Muppathadam P.O., Ernakulam Dist. - 683 110, Tel. 0484-2546660, 93872 72402, 90743 41443  
Web: www.sealabs.in, E-mail: seaalab@gmail.com

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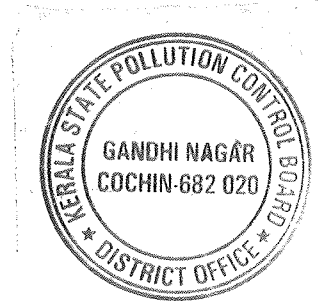
PLL/KOCHI/KSPCB/FORM-V/2022-23



20.09.2023

To,

The Chief Environmental Engineer,  
Kerala State Pollution Control Board,  
Gandhinagar, Kochi – 682020.



Dear Sir,

Subject: Submission of Environment Statement (Form-V) for FY 2022-23.

Kindly find Form-V (Environment Statement) of Petronet LNG Ltd, Kochi Terminal for the financial year 2022-23, as per Environment (Protection) Rules, 1986.

Thanking you,

For, Petronet LNG Ltd., Kochi Terminal

*Y Reddy*  
20.9.23

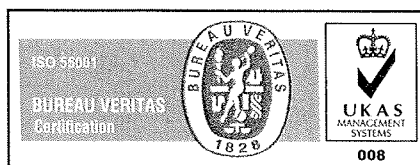
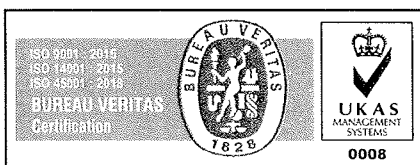
Yogananda Reddy,  
CGM & VP (Plant Head).



Enclosed: Environment Statement (Form-V) for FY 2022-23.

Copy to:

The Environment Engineer, District Office, KSPCB, Ernakulam, 682020.



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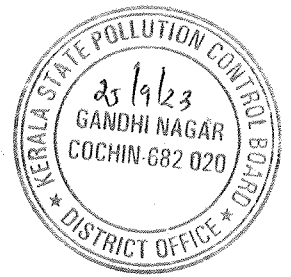
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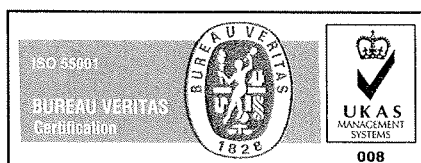
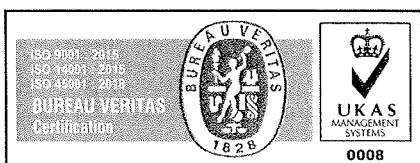
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Bharuch - 392130 (Gujarat)

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**ENVIRONMENTAL STATEMENT FORM-V**  
(See rule 14)

*Environmental Statement for the financial year ending with 31<sup>st</sup> March 2023*

**PART-A**

1	Name and address of the owner/ Occupier of the industry, operation or process.	:	Mr. Pramod Narang, Director (Technical) <b>Kochi Address:</b> Petronet LNG Limited, Puthuvypu P.O., Ernakulam - 682508  <b>Corporate Office:</b> Petronet LNG Limited, World Trade Center, First Floor, Babar Road, Barakamba Lane, New Delhi-110001
2	Industry category	:	Red
3	Production category. Units.	:	5 MMTPA (Million Metric Tonnes per Annum)
4	Year of establishment	:	20 <sup>th</sup> August 2013
5	Date of the last environmental statement submitted.	:	30-09-2022

**PART -B**

Water and Raw Material Consumption:

- I. Water Consumption (M<sup>3</sup>/Day)
- Process : Nil
- Cooling : Nil
- Domestic : 27.35M<sup>3</sup>/day

Name of Products	Process water consumption per unit of product output	
	During the previous financial year	During the current financial year
1. RLNG	Nil	Nil

- II. Raw material consumption

Name of raw materials	Name of Products	Consumption of raw material per unit of output	
		During the previous financial year	During the current financial year
LNG	RLNG	0.01*	0.005*

\*Converted LNG consumed & RLNG produced in energy units (MMBTU).



**PART-C**

Pollution discharged to environment/unit of output  
(Parameter as specified in the consent issued)

<b>Pollutants</b>		<b>Quantity of Pollutants discharged (mass/day)</b>		<b>Concentration of Pollutants discharged (mass/volume)</b>	<b>Percentage of variation from prescribed standards with reasons.</b>
(a) Water		NIL		NIL	NIL
(b) Air	<b>Equipment</b>	<b>Parameters</b>	<b>Quantity of Pollutants discharged (mass/day)</b>	<b>Concentration of Pollutants discharged (mass/volume)</b>	<b>Percentage of variation from prescribed standards with reasons.</b>
	GTG-A	NO <sub>x</sub>	3.78 Kg/day	82.5 mg/Nm <sup>3</sup>	No variation from prescribed standard
	GTG-B	NO <sub>x</sub>	18.58 Kg/day	56.58 mg/Nm <sup>3</sup>	No variation from prescribed standard
	GTG-C	NO <sub>x</sub>	15.68 Kg/day	65.3 mg/Nm <sup>3</sup>	No variation from prescribed standard
	Emergency DG set (EDG)	PM	0.04 Kg/day	22.35mg/Nm <sup>3</sup>	No variation from prescribed standard
		CO <sub>2</sub>	0	0.00 %	
		CO	0.18 Kg/day	85.68 ppm	
		SO <sub>2</sub>	0.02 Kg/day	12.98 mg/Nm <sup>3</sup>	
		NO <sub>x</sub>	0.04 Kg/day	25.05 mg/Nm <sup>3</sup>	
	b) Air	Fire Pumps-C (Diesel Operated)	PM	0 Kg/day	18.75 mg/Nm <sup>3</sup>
CO <sub>2</sub>			0 Kg/day	0.00 %	
CO			0.01 Kg/day	107.65 ppm	
SO <sub>2</sub>			0 Kg/day	8.78 mg/Nm <sup>3</sup>	
NO <sub>x</sub>			0 Kg/day	22.42 mg/Nm <sup>3</sup>	
Fire Pumps-D (Diesel Operated)		PM	0 Kg/day	31.08 mg/Nm <sup>3</sup>	No variation from prescribed standard
		CO <sub>2</sub>	0 Kg/day	0.00 %	
		CO	0.01 Kg/day	110.5 ppm	
		SO <sub>2</sub>	0 Kg/day	11.45 mg/Nm <sup>3</sup>	
		NO <sub>x</sub>	0 Kg/day	26.18 mg/Nm <sup>3</sup>	

Fire Pumps-E (Diesel Operated)	PM	0 Kg/day	30.63 mg/Nm <sup>3</sup>	No variation from prescribed standard
	CO <sub>2</sub>	14.33 Kg/day	8.4 %	
	CO	0.01 Kg/day	119.25 ppm	
	SO <sub>2</sub>	0 Kg/day	11.19 mg/Nm <sup>3</sup>	
	NO <sub>x</sub>	0 Kg/day	27.8 mg/Nm <sup>3</sup>	
Fire Pumps-F (Diesel Operated)	PM	0 Kg/day	24.13 mg/Nm <sup>3</sup>	No variation from prescribed standard
	CO <sub>2</sub>	0 Kg/day	0.00 %	
	CO	0.01 Kg/day	92.5 ppm	
	SO <sub>2</sub>	0 Kg/day	15.65 mg/Nm <sup>3</sup>	
	NO <sub>x</sub>	0 Kg/day	28.05 mg/Nm <sup>3</sup>	
Fire Pumps-G (Diesel Operated)	PM	0 Kg/day	26.73 mg/Nm <sup>3</sup>	No variation from prescribed standard
	CO <sub>2</sub>	10.99 Kg/day	5.7 %	
	CO	0.01 Kg/day	107 ppm	
	SO <sub>2</sub>	0 Kg/day	10.51 mg/Nm <sup>3</sup>	
	NO <sub>x</sub>	0 Kg/day	24.02 mg/Nm <sup>3</sup>	

**Note:** Environmental monitoring in FY 2022-23 was carried out by M/s. Standard Environment & Analytical Laboratories, a KSPCB approved agency.

**PART-D**

HAZARDOUS WASTES

(As specified under Hazardous Wastes (Management & Handling Rules, 2016))

Hazardous Wastes	Total Quantity (Kg)	
	During the previous financial year (2021-22)	During the current financial year (2022-23)
(a) Form Process		
1. Used Oil (Schedule 1, Category: 5.1)	1351.5 Kg	905.3 Kg
2. Waste residue containing oil (Schedule 1, Category: 5.2)	458.6 Kg	353 Kg
3. Empty barrels / containers /liners contaminated with hazardous chemicals /wastes (Schedule 1, Category 33.1). (Used for storing dosing chemicals and used oil)	1818.3 Kg	419.5 Kg

4. Industrial use of paints, and Ink wastes (Schedule 1, Category 21.1)	14 Kg	439 Kg
(b) From pollution control facilities	None	None

Note: For converting used oil from KL to Kg, the density of used oil is taken as 850 Kg/m<sup>3</sup>.

#### PART -E

##### SOLID WASTES:

Solid Wastes	Total Quantity (Kg)	
	During the previous financial year	During the current financial year
a. From process	NIL	NIL
b. From Pollution Control Facility	NIL	NIL
c. Quantity recycled or re-Utilised within the unit.	NIL	NIL

Note: 2270 Kg of kitchen organic wastes converted to manure in the year 2022-23.

#### PART -F

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

SL: No	Hazardous wastes	:	Composition
1	Used oil (Cat 5.1)	:	Organic Matter – 98 – 99 %, Inorganic Matter – 1 – 2 %.
2	Waste residue containing oil (Schedule 1, Category: 5.2)	:	Hydrocarbon
3	Empty barrels / containers /liners contaminated with hazardous chemicals /wastes (Cat 33.1)	:	Plastic or metallic barrels containing chemical / oil residue.
4	Industrial use of paint and Ink wastes (Schedule 1, Category 21.1)	:	Paint pigment, Solvents etc.

#### Storage and disposal practice:

Hazardous wastes generated inside the terminal are being disposed /recycled through the agencies authorized by Kerala state pollution control board (KSPCB). Petronet LNG Limited has an agreement with M/s. Cee Jee Lubricants, Aluva and KEIL (Kerala Enviro Infrastructure Limited, Kochi) for disposing hazardous wastes generated in the terminal. Hazardous wastes are stored in a dedicated hazardous wastes storage shed inside the terminal till its disposal. Hazardous waste storage shed is constructed and maintained as per the requirement of consent issued by KSPCB. Storage shed is provided with impervious flooring and proper roofing as specified in the consent.

Used oil generated is collected in MS barrels or other suitable containers at the generation point and then shifted to storage shed by concerned department. Used oil and empty chemical barrels are sold to KSPCB authorised recycler, M/s. Cee Jee Lubricants, Aluva.

Waste residues containing oil such as oil-soaked cotton wastes generated at various locations are collected and stored in designated storage bin located inside hazardous waste storage shed. These wastes are disposed through KEIL.

Paint and ink wastes are collected & stored in hazardous waste storage area and is disposed through KEIL.

Signboards are installed at hazardous waste storage for displaying each category of waste storages. Records of hazardous wastes generation are maintained in Form 3 as per Hazardous Wastes (Management & Transboundary movement) rules, 2016.

#### ***PART-G***

##### **Impact of the pollution control measures taken on conservation of natural Resources and consequently on the cost of production.**

An environment management cell (EMC) has been constituted and being maintained inside the terminal as required by the environment clearance issued by MoEF&CC to PLL, Kochi Terminal. EMC is headed by Chief General Manager & Vice President (Plant head) and other members are from different plant departments. Environment management cell meets once in a quarter, take review of the situation and propose new environment initiatives.

A rain water harvesting system has installed inside the terminal. Rainwater collected from LNG storage tanks are being collected and stored in raw water storage tanks. This water is being used for domestic use. Condensate water from air heater is directed to fire water storage reservoir. An STP is installed in the terminal for treating domestic sewage. STP water quality is being regularly monitored by plant laboratory and by an external KSPCB grade 'A' environment laboratory. The waste slurry generated from STP has been used as manure for plants inside the plant.

Green belt is developed across the terminal with different plant species appropriate to the environment. Green belt is being maintained by the plant horticulture department. Total 150 new plants were planted in the green belt during World Environment Day celebrations -2022. A kitchen garden is also being maintained inside the terminal.

Gas Turbine Generator (GTG) installed in PLL terminal is fitted with a Dry low emission burner (DLEB). DLE burners are designed to meet stringent emission standards.

A Continuous Ambient Air Quality Monitoring Station (CAAQMS) is installed at our terminal. Ambient air quality data from CAAQMS has been linked to CPCB server. Ambient air quality data is being continuously monitored and being updated to CPCB server.

Food waste converter placed in kitchen for converting all food wastes generated in canteen into manure and this manure has been used as fertilizer inside the plant.

A solar power plant of 250 KW is installed in the terminal for sharing the power requirements for operating the terminal.

**PART -H**

**Additional measures/investment proposal for environmental protection including abatement of pollution.**

PLL has been certified for Environment Management system, ISO 14001. All the aspects and impacts associated with the terminal operations are identified and control measures are implemented. Objectives are established and it is periodically reviewed for the continual improvement of management system.

Ambient air quality data from CAAQMS, stack emission & hazardous waste generation details are being displayed at plant gate using a LED screen.

**PART -I**

**MISCELLANEOUS:**

**Any other particulars in respect of environmental protection and abatement of pollution.**

Nil

**For and on behalf of Petronet LNG Limited**

Sign

: *Y Reddy*

Date

: *20-9-25*



**Approved By: Yogananda Reddy**

**Designation : Chief General Manager & Vice President (Plant Head)**