



# Petronet LNG Limited

Survey No. 347, Puthuvypu P.O.

Kochi - 682 508, India.

Tel: +91-484-2502259 Fax: +91-484-2502264

www.petronetlng.com

CIN L74899DL1998PLC093073

PAN: AAACP8148D. GST: 32AAACP8148D1ZP

PLL/KOCHI/MOEF/2019-20/06

18<sup>th</sup> November, 2019

**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 13<sup>th</sup> March 2006.**

Sir,

The Six monthly compliance report for the above clearances are attached for the period ending 30<sup>th</sup> September 2019.

Thanking You,

With Regards

(T. N. Neelakantan)

Group General Manager & President (Plant Head)



CC:

- 1) The Chief Environmental Engineer,  
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 CRZ Clearance no. J-16011/26/2001-IA-III vide your letters dated 13<sup>th</sup> MARCH 2006; for the Construction of LNG Import Terminal at Puthuvypeen Island, Kochi, Kerala by M/s Petronet LNG Ltd.**

Point-wise compliance to stipulated terms and conditions of the CRZ Clearance is as follows:

**A. SPECIFIC CONDITIONS**

- i. All conditions stipulated in the clearance letter of even number dated 2nd June, 2003 should be strictly implemented. Also, all conditions stipulated by the State Coastal Zone Management Authority vide their letter No.1 143/A212005/STED, dated 14th October, 2005 should be complied.
  - **Conditions mentioned in the Letter No. 4215/B1/2000/STED, dated 09<sup>th</sup> February-2001 does not specifies and conditions for compliance.**
  - **All conditions mentioned in the Letter No. 1143/A2/2005/STED dated 14th October-2005 from Kerala coastal Zone Management Authority are compiled with. Point wise compliance status is given as Annexure#1.**
- ii. No Objection Certificate/consent should be obtained from the Kerala State Pollution Control Board for the enhanced LNG capacity at the terminal, before initiating the project.
  - **We have obtained Consent to Establish with No. PCB/NOC/EK/117/98 dated 17<sup>th</sup> September-1999 before initiating the project and the CTE was subsequent renewed.**
  - **We have obtained Consent to Operate with no. PCB/HO/EKM-1/ICO-R/18/ 2018 dated 10<sup>th</sup> October 2018, and is valid up to on 31st March 2023, a copy of the same has already been submitted along with compliance report dated March-2019.**
- iii. The project proponent should ensure that all necessary precautions including installation of Full-containment - Type LNG tank with concrete roof as indicated in the risk analysis report should be implemented.
  - **PLL has built two LNG storage tanks, both the tanks are of Full-containment with concrete roofing.**
- iv. The project proponent should ensure that no additional dredging/expansion or regasification plant will be undertaken for the above project.
  - **PLL will not undertake additional dredging / expansion of regasification plant without approval of MOEF. Only maintenance dredging is being carried out by Cochin port Trust.**
- v. The budget allocated for environment safeguard measures should not be diverted for any other purpose.
  - **Budget allocated for environment safeguard will not be diverted for other purposes.**

- vi. The comprehensive Environmental Impact Assessment report which is under preparation should be completed early and the final report submitted to this Ministry within one year,
  - **Comprehensive EIA of 2.5 MMTPA Terminal and EIA with QRA and Site emergency response plan of 5 MMTPA terminal has already been submitted with vide letter ND/LNG/K22/2K1 dated 16th February-2001 and letter dated 22nd September-2011 respectively.**
- vii. Based on the risk analysis, Disaster Management Plan should be prepared and submitted to this Ministry within 6 months.
  - **EIA with QRA and site emergency response plan (for 5 MMTPA terminal) submitted to MoEF vide letter dated 22nd September-2011 for EAC recommendations.**

#### B. GENERAL CONDITIONS

i.	Construction of the proposed structure should be undertaken meticulously conforming to the existing Central/local rules and regulations including Coastal Regulation Zone Notification, 1991 and its amendments. All the construction designs/drawings relating to the proposed construction activities must have approvals of the concerned State Government Departments/Agencies.	<ul style="list-style-type: none"> <li>▪ The construction drawings have been approved by the concerned State Government Department/Agencies like Department of Factories and Boilers, Fire and rescue Services etc. Copy of the approvals of Factories and Boiler, Fire rescue services has already been submitted with six monthly compliance report dated 05<sup>th</sup> April-2013.</li> </ul>
ii.	The proponent shall ensure that as a result of the proposed constructions, ingress of the saline water into the groundwater does not take place. Piezometers shall be installed for regular monitoring for this purpose at appropriate locations on the project site.	<ul style="list-style-type: none"> <li>▪ PLL is continuously ensuring that there is no ingress of saline water into the ground water by periodic analysis of ground water, and for the same we have installed two Piezometers at appropriate locations.</li> <li>▪ Sampling of the water drawn from Piezometers is being carried out by approved third party. The latest Ground water analysis report is of the month of June-19 and is enclosed as <b>Annexure#2</b>.</li> </ul>
iii.	Handling, manufacturing, storage and transportation of all hazardous chemicals should be carried out in accordance with MSIHC Rules, 1989 and subsequent amendments, All approvals from State and Central nodal	<ul style="list-style-type: none"> <li>▪ We have applied for NOTIFICATION OF SITES to Factories &amp; Boilers department vide letter no. PLL/KOCHI/F&amp;B/2012-13/C-04 dated 28th November 2012 as</li> </ul>

	<p>agencies including OISD, Chief Controller of Explosives, Chief Inspectorate of Factories must be obtained. A comprehensive contingency plan in collaboration with the concerned authorities must be formulated before commissioning of the project to meet any eventuality in case of an accident</p>	<p>per requirement of MSIHC rules 1989. The same has already been submitted with six monthly compliance report dated 05<sup>th</sup> April-2013.</p> <ul style="list-style-type: none"> <li>▪ We have received final clearance from Chief Controller of Explosive for commissioning of Jetty, LNG unloading line, LNG tanks, and Regasification facilities with letters dated 04<sup>th</sup> February-2013. We have already submitted the same with six monthly compliance reports, dated 05<sup>th</sup> April-2013.</li> <li>▪ Permit to construct and plan approvals were obtained from Director of Factories and Boilers. We have already submitted the details regarding the same with six monthly compliance report, dated 05<sup>th</sup> April-2013.</li> <li>▪ We have received the renewed factory license dated 19<sup>th</sup> December 2018, valid till 31<sup>st</sup> December-2019; a copy of the same has already been submitted along with compliance report dated March-2019.</li> <li>▪ We have prepared Emergency response and Disaster Management Plan and it was submitted to District collector office vide letter no. PLL/KOCHI/ERDMP/DC/2014-15/C-01 dated 5<sup>th</sup> April-2014.</li> <li>▪ A comprehensive contingency plan was prepared in collaboration with the concerned authorities before commissioning of the project to meet any eventuality in case of an accident</li> <li>▪ All approvals as necessary were obtained before the commissioning of the project. Terminal was commissioned on 20<sup>th</sup> August-2013 and all activities related to commissioning were completed by 10<sup>th</sup> September 2013.</li> </ul>
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iv.	<p>A well-equipped laboratory with suitable instruments to monitor the quality of air and water shall be set up as to ensure that the quality of ambient air and water conforms to the prescribed standards. The laboratory will also be equipped with qualified manpower including a marine biologist so that the marine water quality is regularly monitored in order to ensure that the marine life is not adversely affected as a result of implementation of the said project. The quality of ambient air and water shall be monitored periodically in all the seasons and the results should be properly maintained for inspection of the concerned pollution control agencies. The periodic monitoring reports at least once in 6 months must be sent to this Ministry (Regional Office at Bangalore) and State Pollution Control Board.</p>	<ul style="list-style-type: none"> <li>▪ A well-equipped laboratory with suitable Equipments for monitoring the quality of air and water is in place, with Qualified and competent personals. However, PLL is carrying out periodic monitoring of environmental parameters by KSPCB approved agency.</li> <li>▪ Ambient air monitoring is carried out once in a month at four different locations and analysis report for the month of April-19 to September-19 is enclosed as <b>Annexure #3.</b></li> <li>▪ PLL is conducting marine water quality analysis, once in six month. The latest test report, dated June-19 is enclosed as <b>Annexure #4.</b></li> </ul>
v.	<p>Adequate provisions for infrastructure facilities such as water supply, fuel for cooking, sanitation, etc must be provided for the laborers during the construction period in order to avoid damage to the environment, Colonies for the laborers should not be located in the Coastal Regulation Zone area. It should also be fuel wood purpose</p>	<ul style="list-style-type: none"> <li>▪ During the construction phase, PLL has provided adequate infrastructure facilities such as water supply, fuel for cooking, sanitation, etc to the labourers.</li> <li>▪ Labour colonies were not located in Costal Regulation Zone area.</li> </ul>
vi.	<p>To prevent discharge of sewage and other liquid wastes into the water bodies, adequate system for collection and treatment of the wastes must be provided. No sewage and other liquid wastes without treatment should be allowed to enter into the water bodies.</p>	<p>Individual Septic tanks with soak pits have being provided for collection of sewage. The collected sewages are regular disposal through authorized agency of Cochin corporation. No sewage or waste from PLL will be allowed to enter water bodies</p>
vii.	<p>Appropriate facility should be created for the collection of solid and liquid wastes generated by the barges/vessels and their safe treatment and disposal should be ensured to avoid possible contamination of the water bodies</p>	<p>Vessels and tugs will dispose their garbage as per the guidelines of Annex V of Marpol (IMO). We have already submitted the related details with six monthly compliance report dated 05<sup>th</sup> April-2013.</p>
viii.	<p>Necessary navigational aids such as channel markers should be provided to prevent accidents. internationally recognized safety standards shall be applied in case of barge/vessel</p>	<p>PLL has provided 4 Nos. of Buoys as instructed by cochin post trust. In future, if required, more navigation aids will be provided as per instruction/guidance of Cochin Port</p>

	movements	Trust. All required safety standards will be applied to vessel movements as per directions of Cochin Port Trust.
ix.	The project authorities should take appropriate community development and welfare measures for villagers in the vicinity of the project site, including drinking water facilities. A separate fund should be allocated for this purpose.	A separate fund for CSR is kept aside by PLL and we have carried out various activities for the community development and welfare, a brief description of our CSR activities with photographs are enclosed as <b>Annexure # 5</b> .
x.	The quarrying material required for the construction purpose shall be obtained only from the approved quarries/borrow areas. Adequate safeguard measures shall be taken to ensure that the overburden and rocks at the quarry site do not find their way into water bodies.	PLL sourcing of quarrying material is only from Government approved quarries. We have already submitted the details regarding the same with six monthly compliance report on dated 05 <sup>th</sup> April-2013.
xi.	The dredging operations to be undertaken with the prior approval of this Ministry, shall be executed with appropriate safeguard measures to prevent turbidity conditions in consultation with the expert agencies such CWPRS/NIO.	PLL has obtained Environmental clearance from the MOEF vide their order No. J-16011/26/2001-IA-III dated 16 <sup>th</sup> November-2010 for undertaking dredging operations of the basin. Dredging operations is completed and PLL has handed over the basin to M/s Cochin Port Trust for maintenance.
xii.	For employing unskilled, semi-skilled and skilled workers for the project, preference shall be given to local people.	During the project, PLL had given preference to locals while employing unskilled, semi-skilled and skilled worker wherever possible based on their qualification and merits.
xiii.	The recommendations made in the Environment Management Plan and Disaster Management Plan, as contained in the Environmental Impact Assessment and Risk Analysis Reports of the project shall be effectively implemented.	All recommendations made in Environment Management Plan and Disaster Management Plan, as contained in Environment Impact Assessment and Risk Analysis Report of the project are effectively implemented.
xiv.	A separate Environment Management Cell with suitably qualified staff to carry out various environment issues should be set up under the charge of a Senior Executive who will report directly to the Chief Executive of the Company.	PLL has set up Environment Management Cell under Sr. Vice President – (Plant Head), other members of the team includes GM (Operations & Maintenance), Head of Operation department, C&P (Contracts & Procurement) department, Technical department, HSE department, Civil Department, Lab operation & a representative

		from HR department for effective implementing the stipulated environment safeguards. The SOP of the Environment Management Cell was revised on 23/04/2018 and the copy of the same has already been submitted along with the six monthly compliance report for the period ending March-2018.
<b>xv.</b>	The project affected people, if any should be properly compensated and rehabilitated.	No people affected directly as the project was on uninhabited land. Some Land was acquired by Cochin Port Trust for constructing new access road for the project and those affected were provided with infrastructure like road, drain, electricity and water as per guideline by authorities.
<b>Xvi.</b>	The funds earmarked for environment protection measures should be maintained in a separate account and there should be no diversion of these funds for any other purpose. A year wise expenditure on environmental safeguards should be reported to this Ministry.	Budget allocated for environment safeguard will not be diverted for other purposes.
<b>Xvii.</b>	Full support should be extended to the officers of this Ministry's Regional Office at Bangalore and the officers of the Central and State Pollution Control Boards by the project proponents during their inspection for monitoring purposes, by furnishing full details and action plans including the action taken reports in respect of mitigative measures and other environmental protection activities.	PLL will extend 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 by furnishing full details of analysis reports and action plans for environmental protection
<b>Xviii.</b>	In case of deviation or alteration in the project including the implementing agency, a fresh reference should be made to this Ministry for modification in the clearance conditions or imposition of new ones for ensuring environmental protection. The project proponents should be responsible for implementing the suggested safeguard measures.	PLL has not carried out any deviation or alteration in the project.  PLL will comply with this requirement and will take permit from the Ministry prior to any deviation, alteration and modification in the project.

<b>xix.</b>	This Ministry reserves the right to revoke this clearance, if any of the conditions	PLL is aware of the Ministry's right to revoke clearance for not complying
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	stipulated are not complied with to the satisfaction of this Ministry.	with the conditions stipulated in the clearance.
xx.	This Ministry or any other competent authority may stipulate any additional conditions subsequently, if deemed necessary for environmental protection, which shall be complied with.	PLL will comply with additional conditions, if any suggested by the ministry or any other competent authority in writing.
xxi.	The project proponent should advertise at least in two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance and copies of clearance letters are available with the State Pollution Control Committee and may also be seen at Website of the Ministry of Environment & Forests at <a href="http://www.envforin.in">http://www.envforin.in</a> . The advertisement should be made within 7 days from the date of issue of the clearance letter and a copy of the same should be forwarded to the Regional Office of this Ministry at Bangalore.	PLL had advertised regarding environmental clearance accorded by the Ministry of Environment & Forest in two local newspapers widely circulated in the region around the project. Copy of the advertisement given in the two local newspapers has already been along with the six monthly compliance report dated 30 <sup>th</sup> September-2013.
xxii.	The Project proponents should 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.

Thanking You,

With Regards

(T. N. Neelakantan)  
GGM & P (Plant Head)





Annexure-1

Conditions mentioned in the Letter No. 4215/B1/2000/STED, dated 9<sup>th</sup> February-2001 does not specifies and conditions for compliance.

Conditions mentioned in the Letter No. 1143/A2/2005/STED dated 14<sup>th</sup> October-2005 from Kerala coastal Zone Management Authority are and PLL compliance remarks are as under:

Sr. No.	Conditions mentioned	PLL Compliance remarks
1.	No activities will be undertaken in the Mangrove area or in the buffer zone of the mangrove. The route of the pipeline and other activities shall have minimum of 50m from the nearby mangroves and forest land if any in the CRZ area.	PLL's plot is not in the mangrove area, it is about 100 m away from the buffer zone. All activities including the laying of pipelines are confined within the PLL's plot.
2.	Expansion of existing service road in the Costal Regulation Zone-I shall not be carried out.	Expansion of the existing service road in the Costal Regulation Zone-I belongs to Panchayat and PLL will not do any expansion of the service road.
3.	No groundwater shall be tapped for the project	PLL will not tap any ground water during operation of the terminal as water requirement will be met from the condensed water from air. During construction stage, requirement of water was met by outsourcing. At present the water requirement is met by procuring the water from vendors.
4.	The proponent shall obtain necessary No Objection Certificate (NOC) from Kerala State Pollution Control Board.	PLL has obtained required NOC from Kerala State Pollution Control Board in 1999 vide NOC <b>No. PCB/NOC/EK/117/98 dated 17<sup>th</sup> September-1999</b> which was renewed every time (mostly 2 years) before expiry of its validity period. We have obtained Consent to Operate with no. <b>PCB/HO/EKM-1/ICO-R/18/ 2018 dated 10<sup>th</sup> October 2018, and is valid up to on 31st March 2023, a copy of the same has already been submitted along with the compliance report dated March-2019.</b>
5.	EIA document including risk analysis and disaster management plan should be submitted directly to MoEF for environment clearance, under intimation to this office.	Comprehensive EIA of 2.5 MMTPA Terminal and EIA with QRA and Site emergency response plan of 5 MMTPA terminal has already been submitted with vide letter ND/LNG/K22/2K1 dated 16 <sup>th</sup> Feb-2001 and letter dated 22 <sup>nd</sup> Sept-2011 respectively.

Test Report No: TC540219000002697P	Date: 01.07.2019	Page 1 of 1
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CUSTOMER DETAILS			
Customer Name & Address		M/s Petronet LNG Limited Survey No.347 ,Puthuvypu P.O Kochi - 682 508	
Customer Reference		Test Request Form Dated 25.06.2019	
SAMPLE DETAILS			
Sample Code	TC540219000002697P	Sample Received On	26.06.2019
Sample Name	Water	Sampling Procedure	---
Sample Description	Ground Water-Bore Well	Sampling Location	East Side
Identification By Customer	---	Sampling Condition	Good
Sampled On	25.06.2019	Test Started On	26.06.2019
Sampled By	Laboratory	Test Completed on	01.07.2019

SL NO	TEST PARAMETER	TEST METHOD	UNIT	RESULT	ACCEPTABLE LIMIT (IS 10500 - 2012)
01	pH	IS 3025 Part 11:1983 RA 2017	---	6.72	6.50 - 8.50
02	Total Dissolved Solids	IS 3025 Part 16:1984 RA 2017	mg/L	172	500 (Max)
03	Turbidity	IS 3025 Part 10: 1984 RA 2017	NTU	0.80	1.00 (Max)
04	Chloride (as Cl)	IS 3025 Part 32:1988 RA 2014	mg/L	31.9	250 (Max)
05	Iron (as Fe)	IS 3025 Part 53:2003 RA 2014	mg/L	0.31	1.00 (Max)
06	Fluoride(as F)	APHA 23 <sup>rd</sup> Edition 4500-F- B D: 2017	mg/L	< 0.10	1.00 (Max)
07	Sulphate (as SO <sub>4</sub> )	IS 3025 Part 24:1986 RA 2014	mg/L	28.5	200 (Max)
08	Electrical Conductivity	IS 3025 Part 14:1984 RA 2013	µS/cm	278	---
09	Mercury (as Hg)	IS 3025 Part 48:1994 RA 2014	mg/L	< 0.001	0.001 (Max)
10	Lead (as Pb)	IS 3025 Part 47:1994 RA 2014	mg/L	< 0.01	0.01 (Max)
11	Copper (as Cu)	IS 3025 Part 42:1992 RA 2014	mg/L	< 0.05	0.05 (Max)
12	Total Chromium (as Cr)	IS 3025 Part 52:2003 RA 2014	mg/L	< 0.05	0.05 (Max)
13*	Zinc (as Zn)	IS 3025 Part 49:1994 RA 2009	mg/L	< 0.20	5.00 (Max)
14	Temperature	IS 3025 Part 9:1984 RA 2006	°C	29.0	---
15*	Salinity	SEAAL/SOP/06	ppm	0.058	---
16	Oil & Grease	IS 3025 Part 39:1991 RA 2014	mg/L	< 5.00	---
17	Dissolved Oxygen	IS 3025 Part 38:1989 RA 2014	mg/L	6.75	---
18	Biochemical Oxygen Demand (3 days at 27 °C)	IS 3025 Part 44:1993 RA 2014	mg/L	< 2.00	---
19	Chemical Oxygen Demand	IS 3025 Part 58:2006 RA 2012	mg/L	< 10.0	---
20*	Cyanide (as CN)	IS 3025 Part 27:1986 RA 2009	mg/L	< 0.01	0.05 (Max)
21	Cadmium (as Cd)	IS 3025 Part 41:1992 RA 2014	mg/L	< 0.003	0.003 (Max)
22*	Pesticide	USEPA 508 : 1995	---	Absent	---
23*	Insecticide	USEPA 508 : 1995	---	Absent	---

\*Not Under NABL scope

Note: Parameters Lead, Mercury, Total Chromium does not meet the range of NABL Scope compare with Specification.

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

For and on behalf of  
Standard<sup>S</sup> Environmental & Analytical Laboratories

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 and Approval: NABL as per ISO 17025: 2005 & "A" Grade laboratory of KSPCB

K.J. Tower, Pathalam, 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: seaalab@gmail.com, info@sealabs.in

Annexure-03

Ambient Air Monitoring Report, (April 2019 to September 2019)									
LOCATION NO.	Location of Ambient Air Sampling	Month & Date of Sampling	PM (<10 microns) in Micrograms/m <sup>3</sup> ; Limit 100 Micrograms/m <sup>3</sup>	PM (<2.5 microns) in Micrograms/m <sup>3</sup> ; Limit 60 Micrograms/m <sup>3</sup>	SOx as SO <sub>2</sub> in Micrograms/m <sup>3</sup> ; Limit 80 Micrograms/m <sup>3</sup>	NOx, Oxides of Nitrogen in Micrograms/m <sup>3</sup> ; Limit 80 Micrograms/m <sup>3</sup>	Carbon Monoxide (CO); mg/m <sup>3</sup> 4.0 mg/m <sup>3</sup>	OZONE Micrograms/m <sup>3</sup> ; Limit 180 Micrograms/m <sup>3</sup>	Hydrocarbons (HC); Micrograms/m <sup>3</sup>
1	(Watch tower-2) near MGH building	Apr-19	72.8	24.1	0	0	0	0	0
		May-19	75.4	25.9	0	0	0	0	0
		Jun-19	51.4	15.6	0	0	0	0	0
		Jul-19	48.6	14.1	0	0	0	0	0
		Aug-19	43.6	11.3	0	0	0	0	0
		Sep-19	49.3	18.4	0	0	0	0	0
		Average	57.02	18.23	0.00	0.00	0.00	0.00	0.00
2	Near Fire Station Building	Apr-19	77.8	27.6	0	5.12	0	0	0
		May-19	81.4	29.2	0	4.94	0	0	0
		Jun-19	26.2	9.43	0	4.13	0	0	0
		Jul-19	28.6	10.4	0	3.94	0	0	0
		Aug-19	23.9	8.6	0	2.84	0	0	0
		Sep-19	54.2	20.3	0	0	0	0	0
		Average	48.68	17.59	0.00	3.50	0.00	0.00	0.00
3	Fire water Reservoir+ Watch Tower-5	Apr-19	70.3	26.5	0	4.1	0	0	0
		May-19	65.8	24.1	0	5.36	0	0	0
		Jun-19	69.2	18.3	0	2.51	0	0	0
		Jul-19	34.2	12.6	0	3.38	0	0	0
		Aug-19	29.6	10.3	0	2.21	0	0	0
		Sep-19	47.5	17.8	0	5.22	0	0	0
		Average	52.77	18.27	0.00	3.80	0.00	0.00	0.00
4	Watch tower-3 near Tank T-101	Apr-19	80.1	28.6	0	0	0	0	0
		May-19	73.9	26.4	0	0	0	0	0
		Jun-19	60.8	15.6	0	0	0	0	0
		Jul-19	60.8	15.6	0	0	0	0	0
		Aug-19	58.4	12.6	0	0	0	0	0
		Sep-19	51.1	18.7	0	0	0	0	0
		Average	64.18	19.58	0.00	0.00	0.00	0.00	0.00



Dy. Manager HSE



Sr. Manager HSE

Test Report No: TC540219000002694P	Date: 01.07.2019	Page 1 of 1
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CUSTOMER DETAILS			
Customer Name & Address		M/s Petronet LNG Limited Survey No.347 ,Pathuvypu P.O Kochi - 682 508	
Customer Reference		Test Request Form Dated 25.06.2019	
SAMPLE DETAILS			
Sample Code	TC540219000002694P	Sample Received On	26.06.2019
Sample Name	Water	Sampling Procedure	SEAAL/MSP/24 & SEAAL/MBL/SOP/06
Sample Description	Marine Water	Sampling Location	Jetty Head
Identification By Customer	Jetty Head	Sampling Condition	Good
Sampled On	25.06.2019	Test Started On	26.06.2019
Sampled By	Laboratory	Test Completed on	01.07.2019

SL NO	TEST PARAMETER	TEST METHOD	UNIT	RESULT
01	Temperature	IS 3025 Part 9:1984 RA 2006	°C	30.0
02	Colour	IS 3025 Part 4:1983 RA 2017	Hazen	1.00
03	pH	IS 3025 Part 11:1983 RA 2017	---	7.20
04	Electrical Conductivity	IS 3025 Part 14:1984 RA 2013	µS/cm	30200
05	Total Dissolved Solids	IS 3025 Part 16:1984 RA 2017	mg/L	18400
06	Turbidity	IS 3025 Part 10:1984 RA 2017	NTU	8.20
07	Chloride (as Cl)	IS 3025 Part 32:1988 RA 2014	mg/L	11096
08*	Salinity	SEAAL/SOP/06	ppt	20.0
09	Sulphate (as SO <sub>4</sub> )	IS 3025 Part 24:1986 RA 2014	mg/L	1108
10	Iron (as Fe)	IS 3025 Part 53:2003 RA 2014	mg/L	1.11
11	Mercury (as Hg)	IS 3025 Part 48:1994 RA 2014	mg/L	< 0.002
12	Lead (as Pb)	IS 3025 Part 47:1994 RA 2014	mg/L	< 0.20
13	Copper (as Cu)	IS 3025 Part 42:1992 RA 2014	mg/L	< 0.05
14*	Zinc (as Zn)	IS 3025 Part 49:1994 RA 2009	mg/L	< 0.20
15	Nickel (as Ni)	IS 3025 Part 54:2003 RA 2014	mg/L	< 0.10
16	Cadmium (as Cd)	IS 3025 Part 41:1992 RA 2014	mg/L	< 0.03
17*	Cyanide (as CN)	IS 3025 Part 27:1986 RA 2009	mg/L	< 0.01
18	Fluoride(as F <sup>-</sup> )	APHA 23 <sup>rd</sup> Edition 4500-F- B D: 2017	mg/L	1.19
19	Arsenic (as As)	IS 3025 Part 37:1988 RA 2014	mg/L	< 0.002
20	Hexavalent Chromium (as Cr <sup>6+</sup> )	IS 3025 Part 52:2003 RA 2014	mg/L	< 0.20
21*	Pesticide	USEPA 508 : 1995	---	Absent
22*	Insecticide	USEPA 508 : 1995	---	Absent
23	Oil & Grease	IS 3025 Part 39:1991 RA 2014	mg/L	< 5.00
24	Dissolved Oxygen	IS 3025 Part 38:1989 RA 2014	mg/L	6.55
25	Biochemical Oxygen Demand (3 days at 27 °C)	IS 3025 Part 44:1993 RA 2014	mg/L	< 2.00
26	Chemical Oxygen Demand	IS 3025 Part 58:2006 RA 2017	mg/L	490
27	Total Suspended Solids	IS 3025 Part 17:1984 RA 2017	mg/L	18.0
28	Total Bacterial Count	IS 1622:1981 RA 2014	cfu/mL	500
29	Faecal Coliform	IS 1622:1981 RA 2014	MPN/100ml	< 2
30	E coli	IS 1622:1981 RA 2014	MPN/100ml	< 2

\*Not Under NABL scope

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

For and on behalf of  
Standard<sup>S</sup> Environmental & Analytical Laboratories

*Vedhis*  
Authorized Signatory

*Dya*  
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 and Approval: NABL as per ISO 17025: 2005 & "A" Grade laboratory of KSPCB

K.J. Tower, Pathalam, 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: seaalab@gmail.com, info@sealabs.in

Annexure-5



**PETRONET  
LNG  
LIMITED**



## **CSR UPDATE KOCHI**

**Major Highlights  
April 2019- September 2019**

# EDUCATION & SKILL DEVELOPMENT



## 1. "Naipunyam" Vocational Skill Development programme 2018-2019



INAUGURATAL CEREMONY

EDUCATIONAL KIT DISTRIBUTION



FIRE & SAFETY CLASS

ASSESSMENT SESSION

# EDUCATION & SKILL DEVELOPMENT

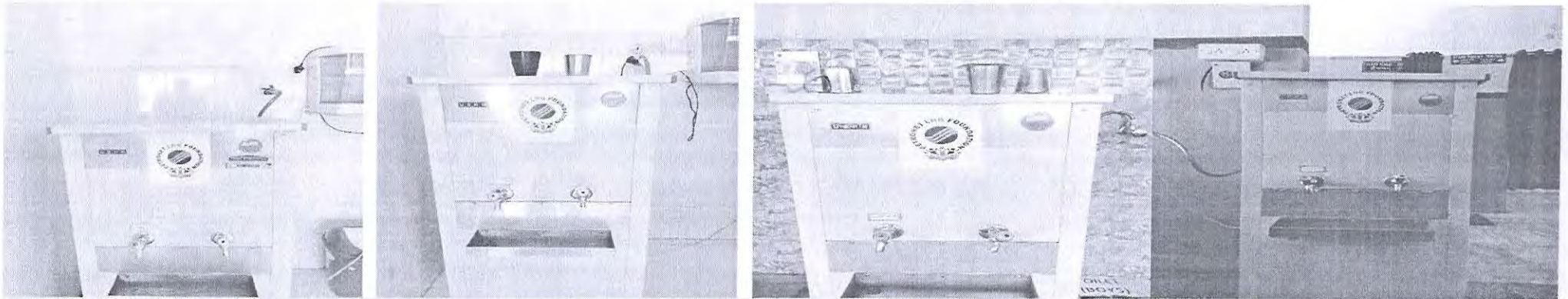
## 2. Valedictory Ceremony of "Velicham" Educational project in Vypin



Awarding the best performers of the Velicham project.

# EDUCATION & SKILL DEVELOPMENT

## 3. Drinking Water Facility in Kendriya Vidyalaya, Kadavanthara



Support with 4 Nos of Water Cooler In Kendriya Vidhyalaya, Kadavanthara

## 4. Infrastructure Development of Rama Varma Union LP School, Cherai



Supply of 30 pairs of Benches and desk with 2 pairs of Almirah to RVU LP School, Cherai



# ENVIRONMENT

## 1. Haritha Vypin



Valedictory Ceremony of Haritha Vypin Street painting Drive in Cherai



Environment Day Celebration Under Haritha Vypin Project

# DISASTER MANAGEMENT



Supply of essential items to the relief camps in the state

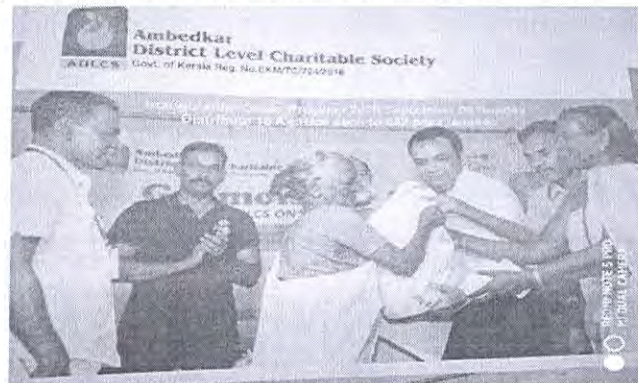
# HEALTH/HUNGER/POVERTY ERADICATION

## 1. Numma Oonu – Hunger Eradication Project



Meeting on Numma Oonu with regard to its extension and expansion.

## 2. Supply of Rice bags through ADLCS



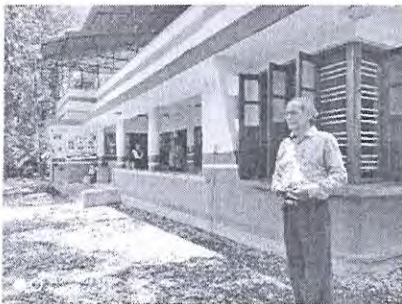
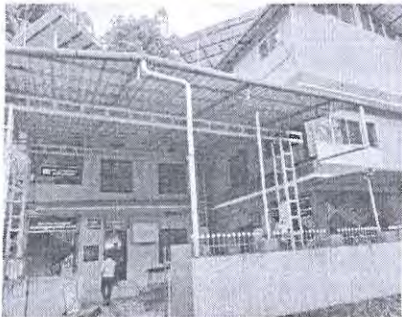
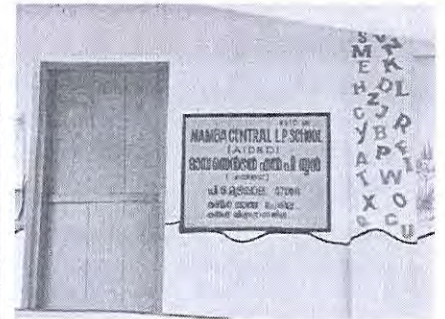
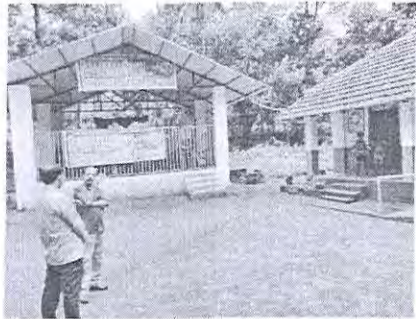
100 bags of rice supplied to underprivileged section in Kumbalam Grama panchayath through Ambedkar District Level Charitable Society .

# GENDER EQUALITY/ SETTING UP OF OLD AGE HOME



Extended support in the infrastructure development of old age home run by Samraksha Charitable Trust.

# Project Assessment through Field Visits/ Meetings





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