

**BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI**

Original Application No. 256 of 2020 (SZ)

IN THE MATTER OF

Tribunal on its own motion

...Applicant

Versus

1. Union of India,
Ministry of Environment, Forest and Climate Change
And Ors.

... Respondents

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DATED AT CHENNAI ON THIS THE 3rd JULY OF 2021

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**BEFORE THE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI**

Original Application No. 256 of 2020 (SZ)

IN THE MATTER OF

Tribunal on its own motion- SUO MOTU
Based on The News item in News Desk
Magazine Dated 11.11.2020, Air Pollution
and Industries, "These Six Industries in
North Chennai are polluting the air for
more than half the year, the North Chennai
Thermal Power Station alone Ennore Port."

...Applicant

Versus

1. Union of India,
Ministry of Environment, Forest and Climate Change,
Rep. by its Secretary,
Indira Paryavaran Bhavan,
Jorbagh Road, New Delhi – 100 003.
2. The Chief Secretary to Govt. of Tamil Nadu
Govt. Secretariat, Fort St. George,
Chennai, Tamil Nadu – 600009
3. The Secretary to Govt. of Tamil Nadu,
Department of Environment,
Govt. Secretariat, Fort St. George,
Chennai, Tamil Nadu – 600009
4. The Principal Secretary to Govt. of Tamil Nadu,
Industries Department,
Govt. Secretariat, Fort St. George,
Chennai, Tamil Nadu – 600009
5. Additional Chief Secretary to Govt. of Tamil Nadu,
Municipal Administration and Water Supply Department,
Govt. Secretariat, Fort St. George,
Chennai, Tamil Nadu – 600009
6. Principal Secretary to Government,
Health and Family Welfare Department,
Secretariat, Chennai 600 009.
7. The Chairman,
Central Pollution Control Board (CPCB),
Parivesh Bhawan, East Arjun Nagar,
Shahdara, Delhi 110 032.
8. The Chairman, Tamil Nadu Pollution Control Board (TNPCB),
No.76, Anna Salai, Guindy,
Chennai, Tamil Nadu – 600032

P. Shankar

P. SHANKAR

कंपनी सचिव

Company Secretary

चेन्नै पेट्रोलियम कॉर्पोरेशन लिमिटेड
Chennai Petroleum Corporation Ltd.
तेनाम्पेट/Teynampet, चेन्नै/Chennai-600 018

9. The Greater Chennai Corporation,
Rep. by its Commissioner,
Rippon Building, Chennai – 600 003.
10. The District Collector,
Chennai District,
District Collectorate Office,
No. 62, Rajaji Salai,
4th Floor, Chennai 600 001.
11. North Chennai Thermal Power Station,
Rep. by its Chairman cum Managing Director (TANGEDCO),
Attpattu Main Road, Thiruvallur District,
Athipattu, Tamil Nadu 600 120.
12. NTPC Tamil Nadu Energy Company Limited (NTECL),
Rep. by its General manager (TS),
Vallur Thermal Power Project,
P.O: VellivoyalChavadi, Ponneri Taluk,
Thiruvallur District, Chennai 600 103.
13. Chennai Petroleum Corporation Limited (CPCL),
Rep. by its Managing Director,
New No. 536, Anna Salai,
Teynampet Chennai 600018.
14. Tamil Nadu Petro Products Limited (TPL),
Rep. by its Chairperson
Manali Express Highway, Manali,
Chennai 600 068, India
15. Manali Petrochemicals Limited (MPL),
Rep. by its Chairman, SPIC House,
VI Floor, No. 88 Mount Road,
Guindy, Chennai 600 032.
16. Madras Fertilizers Limited (MFL),
Rep by its Chairman & Managing Director,
SH 104, Harikrishna Puram, Manali,
Chennai, Tamil Nadu 600 068

... Respondents

REPLY STATEMENT FILED BY THE 13th RESPONDENT

I, P Shankar, Son of (late) Mr. P.S. Parameswaran, aged 55 years, residing at CEEBROS Gardens, May Flower Block, Flat no. 6E, 1/2 Vembuli Amman Koil Street, Virugambakkam, Chennai- 600 092, working as Company Secretary of Chennai Petroleum Corporation Limited (CPCL), 536, Anna Salai, Teynampet, Chennai – 600 018, do hereby solemnly affirm and sincerely state as follows:


 पी. शंकर
 P. SHANKAR
 कंपनी सचिव
 Company Secretary
 चेन्नै पेट्रोलियम कॉर्पोरेशन लिमिटेड
 Chennai Petroleum Corporation Ltd.

1. I state that I am the Company Secretary of Chennai Petroleum Corporation Limited (CPCL), representing the 13th Respondent herein and as such I am well acquainted with the facts of the case from the records and I am authorized to file this Reply Statement on behalf of the 13th Respondent.

2. I humbly submit that the above case has been Suo Motu taken on file by this Hon'ble Tribunal on the basis of the newspaper report published in News Desk Magazine dated, 11.11.2020 under the caption "*These Six Industries in North Chennai are polluting the air for more than half the year*".

3. I humbly submit that this Hon'ble Tribunal in its order dated 15.12.2020 has constituted a Joint Committee comprising of (1) Ministry of Environment, Forest and Climate Change (MoEF&CC), Regional office, Chennai, (2) Central Pollution Control Board, Regional office, Chennai, (3) The Tamil Nadu Pollution Control Board, (4) Anna University of Environmental Engineering, Chennai, to inspect the area in question and submit a factual as well as action taken report, if there is any violation found. Further, this Hon'ble Tribunal has also directed the Respondents to file their independent response as to the allegation in the news article.

4. I humbly submit that pursuant to the above direction of this Hon'ble Tribunal, the instant Reply Statement is being filed in order to bring out the true and correct factual position as to the allegation made in the news article. Nothing contained in this Reply Statement shall be construed as an admission of any statement or averment made in the present Application save and except what has specifically been admitted by the answering Respondent herein. The answering Respondent reserves liberty to file a further detailed Statement and additional documents if the situation so requires at a later stage.

5. I humbly submit that this respondent corporation is one of the leading group companies of IndianOil, being a refinery designed to produce fuels and lube base stocks. I submit that this respondent



पी. शंकर

P. SHANKAR

कंपनी सचिव

Company Secretary

चेन्नै पेट्रोलियम कॉर्पोरेशन लिमिटेड
Chennai Petroleum Corporation Ltd

stands tall among the public-sector refining companies in India, with one of the most complex refineries of its kind in the country, producing an array of value-added petroleum products. It also pioneered key initiatives in several areas such as process optimisation, technology absorption, energy conservation, waste land reclamation and environment management.

6. I humbly submit that this respondent is a public sector undertaking (A group company of Indian Oil Corporation Limited) primarily engaged in the production of fuel products, lubricants and petrochemical feed stocks and meeting the demand of petroleum products in South India along with other refineries.

(i) This respondent plant was commissioned in 1969 as the 9th in the chain of refineries in the country.

(ii) This Respondent Plant in Manali comprises of three Refineries namely Refinery -I, Refinery-II & Refinery-III for processing Crude Oil and associated secondary Treating units and the present installed refining capacity of this Respondent at its Manali Refinery is 10.5 MMTPA. This Respondent has also implemented a Euro VI Project to meet the revised specifications of MS and HSD according to Auto Fuel Policy which is more environment friendly fuel.

(iii) The products produced by this Respondent meet the needs of the nation in the field of power, energy, agriculture and Industry.

(iv) This Respondent as a responsible industry, commissioned Desalination plant in 2010 and is also utilising treated sewage of CMWSSB to meet the water requirement thereby reducing equivalent quantity of fresh water consumption so as to use the same for the need of city requirement.

(v) As a sustainable & Green initiative, this Respondent has commissioned a wind mill in 2007 at Pushpathur for a capacity of 17.6 MW and the power generated is utilised in Desalination

P. Shankar

पी. शंकर

P. SHANKAR

कंपनी सचिव

Company Secretary

चेन्नै पेट्रोलियम कॉर्पोरेशन लिमिटेड
Chennai Petroleum Corporation Ltd.

Plant on Wheeling arrangement.CO2 reduction achieved through wind mill is 34000 MT / year.

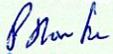
(vi) In addition to the above, this Respondent has installed solar panels since 2013 for a total capacity of 270 kW at various locations in Chennai & Nagapattinam.

(vii) Further, seven nos of Reverse Vending Machines were also installed in Chennai at strategic locations in 2019 & 2020 to create awareness on plastic recycling among general public.

7. I humbly submit that as per the news article, the specific allegation against this Respondent is that the air quality in Ennore - Manali region has been seriously affected on account of and violation of emission standards for 65% of the time in 2019 by this Respondent, which is not correct, false and hereby denied, as this Respondent is following all the norms prescribed by the Central Pollution Control Board (CPCB) and the Tamil Nadu Pollution Control Board (TNPCB). This Respondent adopts various pollution control measures towards adhering to emission standards as prescribed by MoEF&CC.

8. I humbly submit that this Respondent is equipped with the requisite pollution control and monitoring facilities in the project area as per the guidelines / consent conditions issued by TNPCB / CPCB and this Respondent is taking continuous efforts to reduce the emission level through all possible measures, without any default.

9. I humbly submit that to safeguard the environment and control air pollution, this Respondent has provided stack monitoring in all the Process Heaters, Boilers & Gas Turbines in the subject project of this Respondent, as per the guidelines / Consent conditions issued by TNPCB / CPCB. Further, the data connectivity of Stack parameters is connected with both TNPCB & CPCB.TNPCB Field Survey on Stack and Ambient Air Quality Measurements and its report for the year 2018 and 2019 is enclosed as Annexure-I. It can be inferred from the report that all parameters of stock and Ambient air quality are within limits.

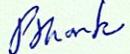

पी. शंकर
P. SHANKAR
कंपनी सचिव
Company Secretary
चेन्नै पेट्रोलियम कॉर्पोरेशन लिमिटेड
Chennai Petroleum Corporation Ltd.

10. I humbly submit that similarly, this Respondent has also taken Stack and Ambient Air Quality monitoring thro' NABL accredited Lab half yearly once in 2018-19 and 2019-20. The report is enclosed as Annexure-II. It can be inferred and apparently clear from the above reports, that there was no exceedance of standards in the parameters as well as in Ambient air quality by this Respondent at any point of time as alleged in the news article.

11. I humbly submit that in addition to the above, the Stack and Ambient Air Quality Field testing was carried out by this Respondent through Indian Institute of Technology (IIT), Madras, since January 2021. The final report towards the same is enclosed as Annexure-III. TNPCB also has carried out Stack and Ambient air quality monitoring during April and May 2021. The report of TNPCB is enclosed as Annexure-IV. It is crystal clear from the above reports and it can also be observed that all the values/parameters are within the prescribed limits only.

12. I humbly submit that one of the major milestones towards environment friendly measure adopted in recent times is the utilization of Regassified Liquefied Natural Gas (RLNG), a cleaner & Environmental friendly fuel in process heaters, Boilers & Gas turbines in place of Fuel oil in heaters & boilers and naphtha in Gas Turbines. The RLNG conversion and consumption was started in March 2019 and presently this Respondent is using 30,000 MT of RLNG per month, with an object to protect the environment.

13. I humbly submit that taking into account the reports annexed herein and the above statements, it is a proven fact that this Respondent has not violated any of the norms or procedures prescribed and issued by TNPCB and CPCB and the allegation whatsoever in the news report are false, frivolous and without any basis. This Respondent is strictly complying with all statutory norms without any default.


पी. शंकर
P. SHANKAR
कंपनी सचिव
Company Secretary
चेन्नै पेट्रोलियम कॉर्पोरेशन लिमिटेड
Chennai Petroleum Corporation Ltd.
तेनाम्पेट/Teynampet, चेन्नै/Chennai-600 018

14. I humbly submit that this Respondent has always sought to ensure the strictest compliance to the safety norms and the maintenance of environmental protection standards and will further comply with all norms prescribed in the future.

For the reasons stated above, I humbly pray that this Hon'ble Tribunal may be pleased to dismiss the above application and pass such further or other orders as this Hon'ble Tribunal may deem fit and proper in the circumstances of the case and thus render justice.

Dated at Chennai on this the day of July, 2021



पी. शंकर
P. SHANKAR
कंपनी सचिव
Company Secretary
चेन्नै पेट्रोलियम कॉर्पोरेशन लिमिटेड
Chennai Petroleum Corporation Ltd.
तेनाम्पेट/Teynampet, चेन्नै/Chennai-600 018

13th RESPONDENT

VERIFICATION

I, P Shankar, Son of Mr.(late) Mr. P.S. Parameswaran, aged 55 years, having address at CEEBROS Gardens, May Flower Block, Flat no. 6E, 1/2 Vembuli Amman Koil Street, Virugambakkam, Chennai- 600 092, working as Company Secretary of Chennai Petroleum Corporation Limited (CPCL), 536, Anna Salai, Teynampet, Chennai – 600 018, do hereby verify that the contents of the above paragraph are true to the best of my knowledge and are believed to be true on legal advice and that I have not suppressed any material fact.

Verified at Chennai on this the day of July, 2021



पी. शंकर
P. SHANKAR
कंपनी सचिव
Company Secretary
चेन्नै पेट्रोलियम कॉर्पोरेशन लिमिटेड
Chennai Petroleum Corporation Ltd.
तेनाम्पेट/Teynampet, चेन्नै/Chennai-600 018

13th RESPONDENT



TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Manali.

From

D.Sivakumar,
Deputy Chief Scientific Officer,
District Environmental Laboratory,
Tamilnadu Pollution Control Board,
950/1, Poonamallee High Road,
Arumbakkam, Chennai-106

To

M/s CPCL,
Manali
Chennai – 600 068.

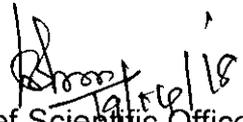
Letter No.TNPCB/Manali/Air Survey/SM/NLS/2017-18 Dated 18.04.2018

Sir,

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

I am sending herewith the Report of Analysis of Ambient Air Quality/
Stack Monitoring/Ambient Noise Level Survey conducted in the vicinity of your
Industry **M/S. CPCL**, Chennai 600 068, between **09.03.2018 to 16.03.2018** along
With Invoice for **Rs. 2,94,900/-** (Rupees Two lakhs ninety four thousand and nine
hundred only) towards the above survey/analysis charges.

Kindly acknowledge the receipt of the above without fail.


Dy. Chief Scientific Officer
DEL - Manali

18/4

Encl: As above

Copy submitted:-

1. The Joint Chief Environmental Engineer (Monitoring), Ch-58.
2. The District Environmental Engineer, TNPCB, Ambattur.
3. The Deputy Director (Labs) TNPCB, Ch-32.
4. To file.

**TAMILNADU POLLUTION CONTROL BOARD**

District Environmental Laboratory, Manali.

AMBIENT AIR QUALITY SURVEY – Report of Analysis**Report No.61/AAQS/2017-18****Date :18.04.2018**

1. Name of the Industry : **M/s CPCL.,**
2. Address of the Industry : **Manali, Chennai-68.**
3. Date of Survey : **09.03.2018**
4. Duration of Survey : **8 Hours / 24 Hours**
5. Category : **Red/Orange/Green –Large/Medium/Small**
6. Land use classification : **Industrial/Commercial/Residential/Sensitive**

Meteorological Conditions – During Air Survey

Ambient Temperature (°C)	Min	Max	Relative Humidity (%)	Min	Max
	28	33		41	79
Weather Condition	Clear Sky		Rain Fall (mm)	Nil	
Predominant wind direction	ENE to WSW		Mean Wind Speed (Km/hr)	13.05	

Ambient Air Quality Survey Results

Sl. No	Location	Direction	Distance (m)	Height from GL (m)	Pollutants Concentration ($\mu\text{g}/\text{m}^3$)			
					PM ₁₀	PM _{2.5}	SO ₂	NO _x
1.	On top of platform near crude division.	N	500	4.0	79	--	11	14
2.	On top of platform near North security gate.	NNE	800	4.0	*137	51	8	18
3.	On top of Platform near CPP.	NE	900	4.0	63	--	10	12
4.	On top of Platform near Flair area.	E	300	4.0	75	--	9	15
5.	On top Platform near ETP-I	ESE	500	4.0	62	--	11	11
6.	On top Platform near Temple.	SE	750	4.0	57	13	8	11

* - Near north gate civil work & heavy vehicle movement observed during survey period.

[Signature]
Dy. Chief Scientific Officer
DEL - Manali

[Signature]
17/4



TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Manali.

AMBIENT AIR QUALITY SURVEY – Report of Analysis

Report No.61/AAQS/2017-18

Date :18.04.2018

1. Name of the Industry : **M/s CPCL.,**
2. Address of the Industry : **Manali, Chennai-68.**
3. Date of Survey : **12.03.2018**
4. Duration of Survey : **8 Hours / 24 Hours**
5. Category : **Red/Orange/Green –Large/Medium/Small**
6. Land use classification : **Industrial/Commercial/Residential/Sensitive**

Meteorological Conditions – During Air Survey

Ambient Temperature (°C)	Min	Max	Relative Humidity (%)	Min	Max
	30	33		53	74
Weather Condition	Clear Sky		Rain Fall (mm)	Nil	
Predominant Wind Direction	East to West		Mean Wind Speed (Km/hr)	14.63	

Ambient Air Quality Survey Results

Sl. No	Location	Direction	Distance (m)	Height from GL (m)	Pollutants Concentration (µg/m ³)			
					PM ₁₀	PM _{2.5}	SO ₂	NO ₂
1.	On top of platform near South Gate	S	500	3.0	68	--	14	13
2.	On top of Platform near ETP-II Control Room	S	800	3.0	49	--	13	10
3.	On top of Platform near TTP control Room	SW	900	4.0	51	10	15	9
4.	On top of Platform near Ref-II sub station	SW	300	3.0	69	--	17	14
5.	On top Platform near Fire&Safety	W	500	4.0	82	--	24	15
6.	On top Platform near CISF Dc Office(Weigh Bridge)	NW	750	3.0	*131	64	23	18

* - Near Material gate civil work & heavy vehicle movement observed during survey period.

[Signature]
Dy.Chief Scientific Officer
DEL - Manali

[Signature]



TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Manali

STACK MONITORING SURVEY – Report of Analysis

Report No.61/SM/2017-2018

Date :18.04.2018

1. Name of the Industry : **M/s CPCL.,**
2. Address of the Industry : **Manali, Chennai – 600 068.**
3. Date of Survey : **09.03.2018 to 16.03.2018**

Stack Monitoring Survey Results

Sl. No.	Stack attached to	Fuel Used	Stack Temp. °K	Velocity in (m/sec)	Discharge rate in (Nm ³ /day)	Pollutants (mg/Nm ³)		
						PM	SO ₂	NO _x
1.	Boiler – IV	FO	476	36.27	5107118	51	508	234
2.	Boiler-I	FO	441	33.14	5036702	48	684	309
3.	206-F1	Fuel Gas	538	16.17	2014316	12	15	50
4.	206-F2	Fuel Gas/FO	572	20.84	2441916	16	61	105
5.	206-combined	Natural Gas	603	24.21	2699582	11	5	43
6.	212-F-01	Fuel Gas	631	21.45	2285447	19	20	42
7.	207-OHCU	FO/FG	460	18.31	2521834	26	287	145
8.	207-F-01	FG	501	21.01	2565965	11	3	122
9.	201-F1&F2 combined	FO	478	18.67	9614872	31	406	132
10.	205-F1	Fuel Gas	540	19.84	2408033	14	8	65
11.	205-F2	FO	540	21.43	2618028	27	159	36
12.	214-F1	Fuel Gas	451	16.55	2475848	12	3	39
13.	9F-301	Naptha	505	22.84	979594	10	5	98
14.	9F-201	FO	493	16.42	1523705	22	108	164

15.	73-F-101	FO	536	18.49	1878852	28	221	108
16.	73-F-102	FO	465	19.89	2437712	26	113	169
17.	10-F-101	FO/FG	509	22.24	1284237	19	93	128
18.	76-F-01	Fuel Gas	433	21.45	676881	11	3	17
19.	SRU 210 F1	--	635	26.35	3319164	21	631	21
20.	14 F01	FO	677	25.25	2982983	23	331	113
21.	14-F-101	LPG	672	23.91	2845501	10	3	53

[Handwritten Signature]
19/04/18
Deputy Chief Scientific Officer
DEL- Manali
[Handwritten Initials]



TAMIL NADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Manali.

AMBIENT NOISE LEVEL SURVEY - Report of analysis

Report No.: 61 / NLS / 2017 - 2018

Dated : 18.04.2018

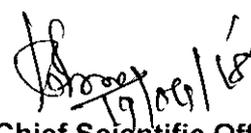
1	Name of the Industry	M/s. CPCL,			
2	Address of the industry	Manali			
		Chennai -68			
3	Date of survey	16.03.2018			
4	Category	RL	Land use classification	Industrial	
5	Type of Survey:	Ambient	Time of Survey	Day	
6	Meteorological conditions	Calm / Windy / Rainy		Windy	
Logging Parametes					
Instrument Used		Larson - Davis System - 824	Serial No:	824A2010	
Logging interval		10 minutes each point	Measuring Range dB(A)	40 to 120	
Weighing		Peak weighting	'C'	Time weighting	10 min
Sound Incidence		Random	Time in hrs	14.00-15.00	

Report of Noise Level Monitoring

Sl. No.	Location	Duration (min)	Distance (mts)	Direction	Leq dB(A)
1	Near Fire Station	10	700	N	60.5
2	Near R & D	10	900	NNE	55.5
3	Near CPP Online station	10	800	NE	61.2
4	Near Cooling Tower	10	500	ENE	75.8
5	Near Flair Area	10	300	E	62.1

#The Direction and Distance are from the Centre of the Plant.

#Leq value is the average energy for the measured period


 Deputy Chief Scientific Officer
 DEL MANALI

4/14



TAMIL NADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Manali.

AMBIENT NOISE LEVEL SURVEY - Report of analysis

Report No.: 61/ NLS / 2017 - 2018

Dated : 18.04.2018

1	Name of the Industry	M/s. CPCL		
2	Address of the industry	Manali, Chennai -68.		
3	Date of survey	16.03.2018		
4	Category	RL	Land use classification	Industrial
5	Type of Survey	Ambient	Time of Survey	Day
6	Meteorological conditions	Calm / Windy / Rainy		Windy
Logging Parametes				
Instrument Used		Larson - Davis System - 824	Serial No:	824A2010
Logging interval		10 minutes each point		Measuring Range dB(A) 40 to 120
Weighing		Peak weighting	' C '	Time weighting 10 min
Sound Incidence		Random		Time in hrs 14.00-15.00

Report of Noise Level Monitoring

Sl. No.	Location	Duration	Distance	Direction	Leq dB(A)
1	Near ETP-I	10	700	ESE	62.8
2	Near Temple	10	900	SE	52.1
3	Near South Gate	10	800	S	59.5
4	Near Tank No.119	10	500	SW	54.1
5	Near Sub Station- Ref.II	10	300	WSW	68.5

#The Direction and Distance are from the Centre of the Plant.

#Leq value is the average energy for the measured period

Deputy CSD (Lab)
 DEL MANALI
 4/17/18



TAMIL NADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Manali.

AMBIENT NOISE LEVEL SURVEY - Report of analysis

Report No.:61 / NLS / 2017 - 2018

Dated :18.04.2018

1	Name of the Industry	M/s. CPCL,			
2	Address of the industry	Manali,			
		Chennai- 68.			
3	Date of survey	16.03.2018			
4	Category	RL	Land use classification	Industrial	
5	Type of Survey:	Ambient	Time of Survey	Day	
6	Meteorological conditions	Calm / Windy / Rainy	Windy		
Logging Parametes					
Instrument Used		Larson - Davis System - 824	Serial No:	824A2010	
Logging interval		10 minutes each point	Measuring Range dB(A)	40 to 120	
Weighing		Peak weighting	'C'	Time weighting	10 min
Sound Incidence		Random	Time in hrs	14.00-15.00	

Report of Noise Level Monitoring

Sl. No.	Location	Duration (min)	Distance (mts)	Direction	Leq dB(A)
1	Near Fire & Sefety	10	700	W	62.2
2	Near CISF DC Office	10	900	WNW	71.5
3	Near Over Bridge	10	300	NNW	72.9
4	Near Ref III Sub Station	10	500	NW	68.5
5	Near Pond	10	700	NW	60.1

#The Direction and Distance are from the Centre of the Plant.

#Leq value is the average energy for the measured period


 Deputy Chief Scientific Officer
 DEL MANALI
 4/4



TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Manali.

TVOC Survey - Report of Analysis

Report No: 61 /TVOC/ 2017-18

Dated: 18.04.2018

1. Name of the Industry : **M/s. CPCL,**
 2. Address of the Industry Manali
 Chennai -68.
 3. Date Of Survey 16.03.2018
 4. Category RL

TVOC- Analysis Report

Station No.	Location	Direction	Distance (mts)	TVOC ($\mu\text{g}/\text{m}^3$)
1	Near Fire Station	N	700	504
2	Near R & D	NNE	900	571
3	Near CPP	NE	800	514
4	Near Cooling Tower	ENE	500	570
5	Near Flair Area	E	300	691
6	Near ETP-I	ESE	500	656
7	Near Temple	SE	900	519
8	Near South Gate	S	800	815
9	Near Tank Area (119)	SW	900	930
10	Near Ref-II Substation	WSW	300	1310
11	Near Fire & Safety	W	400	815
12	Near CISF DC Office	WNW	600	755
13	Near Bridge	NW	400	985
14	Near Ref-III Substation	NW	600	912
15	Near Pond	NNW	700	805

#The Direction and Distance are from the centre of the Plant

[Signature]
 Deputy Chief Scientific Officer,
 DEL - Manlai

[Signature]



TAMILNADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Manali

INVOICE

Report No.61/ AAQ/SM/NLS/2017-18

Invoice No.	61/2017-18
Date	18.04.2018

To
M/s. CPCL.
Manali, Chennai- 68.

Sl. No.	Description	No. of Stations	Rate (Rs.)	Amount (Rs.)
1.	Ambient Air Quality Survey – PM ₁₀	12	2000	24,000
2.	Ambient Air Quality Survey – PM _{2.5}	4	3000	12,000
3.	Stack Monitoring	21	7500	1,57,500
4.	Analysis Charges	33	1800	59,400
5.	Ambient Noise Level testing charges (Ref-I, Ref-II and Ref-III)	3X5	4000	12,000
6.	VOC	15	2000	30,000
Total				2,94,900
Amount paid vide SBI cheque No.967786dt. 28.03.2018 Our CR. No.2886 dt. 06.04.2018				2,94,900


 19/04/18
 DY. Chief Scientific Officer,
 DEL – Manali




TAMILNADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Manali.

From

L. Asha Kumari, M.Sc., M.Phil., B.L., M.B.A.,
Deputy Chief Scientific Officer,
District Environmental Laboratory,
Tamilnadu Pollution Control Board,
950/1, Poonamallee High Road,
Arumbakkam, Chennai-106

To

M/s CPCL.,
Manali
Chennai – 600 068.

Letter No.TNPCB/Manali/Air Survey/SM/NLS/2018-19 Dated 11.04.2019

Sir,

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

I am sending herewith the Report of Analysis of Ambient Air Quality/
Stack Monitoring/Ambient Noise Level Survey conducted in the vicinity of your
Industry **M/S. CPCL**, Chennai 600 068, between **01.03.2019 to 13.03.2019** along
With Invoice for **Rs. 3,50,700/-** (Rupees Three Lakhs Fifty Thousand and Seven
Hundred only) towards the above survey/analysis charges.

Kindly acknowledge the receipt of the above without fail.


Dy. Chief Scientific Officer
DEL - Manali
11/4/19

Encl: As above

Copy submitted:-

1. The Joint Chief Environmental Engineer (Monitoring), Chennai
2. The District Environmental Engineer, TNPCB, Ambattur
3. The Deputy Director (Labs) TNPCB, Chennai-32
4. To file.



TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Manali.

AMBIENT AIR QUALITY SURVEY – Report of Analysis

Report No. 67/AAQS/2018-19

Date : 11.04.2019

1. Name of the Industry : **M/s CPCL.**
2. Address of the Industry : **Manali, Chennai-68.**
3. Date of Survey : **11.03.2019**
4. Duration of Survey : **8 Hours / 24 Hours**
5. Category : **Red/Orange/Green – Large/Medium/Small**
6. Land use classification : **Industrial/Commercial/Residential/Sensitive**

Meteorological Conditions – During Air Survey

Ambient Temperature (°C)	Min	Max	Relative Humidity (%)	Min	Max
	29	35		44	74
Weather Condition	Clear sky		Rain Fall (mm)	Nil	
Predominant wind direction	SSE to NNW		Mean Wind Speed (Km/hr)	16.47	

Ambient Air Quality Survey Results

Sl. No	Location	Direction	Distance (m)	Height from GL (m)	Pollutants Concentration ($\mu\text{g}/\text{m}^3$)			
					PM ₁₀	PM _{2.5}	SO ₂	NO _x
1.	On top of platform near crude division.	N	500	4.0	86	--	27	16
2.	On top of platform near North security gate.	NNE	800	4.0	83	39	12	18
3.	On top of Platform near CPP.	NE	900	4.0	63	--	10	14
4.	On top of Platform near Flair area.	E	300	4.0	67	--	9	14
5.	On top Platform near ETP-I	ESE	500	4.0	56	--	9	11
6.	On top Platform near Temple.	SE	750	4.0	75	24	8	18


 Dy. Chief Scientific Officer
 DEL - Manali
 4/4
 11/4/19



TAMILNADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Manali.

AMBIENT AIR QUALITY SURVEY – Report of Analysis

Report No.67/AAQS/2018-19

Date : 11.04.2019

1. Name of the Industry : **M/s CPCL.,**
2. Address of the Industry : **Manali, Chennai-68.**
3. Date of Survey : **12.03.2019**
4. Duration of Survey : **8 Hours / 24 Hours**
5. Category : **Red/Orange/Green –Large/Medium/Small**
6. Land use classification : **Industrial/Commercial/Residential/Sensitive**

Meteorological Conditions – During Air Survey

Ambient Temperature (°C)	Min	Max	Relative Humidity (%)	Min	Max
	30	35		36	70
Weather Condition	Clear Sky		Rain Fall (mm)	Nil	
Predominant Wind Direction	SSE to NNW		Mean Wind Speed (Km/hr)	18.10	

Ambient Air Quality Survey Results

Sl. No	Location	Direction	Distance (m)	Height from GL (m)	Pollutants Concentration ($\mu\text{g}/\text{m}^3$)			
					PM ₁₀	PM _{2.5}	SO ₂	NO ₂
1.	On top of platform near South Gate	S	500	3.0	67	--	10	15
2.	On top of Platform near ETP-II Control Room	S	800	3.0	48	--	8	9
3.	On top of Platform near TTP control Room	SW	900	4.0	49	13	8	9
4.	On top of Platform near Ref-II sub station	SW	300	3.0	68	--	13	15
5.	On top Platform near Fire & Safety	W	500	4.0	64	--	13	14
6.	On top Platform near CISF Dc Office near gate no. 3 weigh bridge	NW	750	3.0	183*	64*	16	17

*Near gate no. 3 heavy vehicle movement observed during survey period.


 Dy. Chief Scientific Officer
 DEL - Manali
 11/4/19



TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Manali

STACK MONITORING SURVEY – Report of Analysis

Report No.67/SM/2018-2019

Date : 11.04.2019

1. Name of the Industry : **M/s CPCL.,**
2. Address of the Industry : **Manali, Chennai – 600 068.**
3. Date of Survey : **01.03.2019 ¹⁶ & 13.03.2019**

Stack Monitoring Survey Results

Sl. No.	Stack attached to	Fuel Used	Stack Temp. °K	Velocity in (m/sec)	Discharge rate in (Nm ³ /Hr)	Pollutants (mg/Nm ³)		
						PM	SO ₂	NO _x
1	Boiler – IV COGEN PLANT	FO/FG	484	36.97	211938	53	1234	425
2	Boiler – III COGEN PLANT	FO/FG	494	40.99	230216	45	743	302
3	212-F1- Isomer	FG	600	24.15	1113132	14	BDL	39
4	9F-201	FG	487	19.61	76273	12	3	76
5	9F-301	Naptha	491	20.43	37198	15	BDL	72
6	4-F1	FO	665	25.02	51489	29	648	140
7	10F-101	FO/FG	514	22.35	53075	21	122	103
8	14 F1	FO	665	27.70	55754	18	98	94
9	14-F-02	FO/FG	643	26.14	54416	26	31	185
10	206-F1	FG	544	18.63	95935	12	2	51
11	206-F2	FG	575	21.71	105808	17	24	68
12	205-F1	Naptha	532	20.50	105558	13	42	29
13	205-F2	Naptha	545	20.34	101933	11	2	29

14	Boiler-I	FO/FG	504	36.07	199867	52	364	207
15	207-F2	FO/FG	528	21.19	101998	10	BDL	105
16	207-F1-OHCU	FG	514	21.64	110772	10	2	94
17	214-F1	FG	468	17.68	105866	12	3	31
18	211-F1	FG	506	17.96	99473	10	BDL	31
19	SRU-210-F1	--	647	27.33	139847	39	12741	14
20	201- F1 & F2 combined	FO/FG	494	17.32	362102	14	915	140
21	86-F01-DCU	FO/FG	391	19.19	383156	23	49	60
22	71-F-101	FG	490	20.77	116542	11	3	60
23	73-F-102	FG/FG	471	19.29	97252	16	47	80
24	73-F-101	FO/FG	528	16.51	70736	21	168	96
25	77-F01	FG	455	21.68	10232	11	BDL	55
26	76-F01	FO/FG	438	20.31	10089	29	440	29
27	16-F1	FG	489	16.35	93987	11	BDL	47

...2


 Deputy Chief Scientific Officer
 DEL - Manali
 11/7/19



TAMIL NADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Manali.

AMBIENT NOISE LEVEL SURVEY - Report of analysis

Report No.: 67 / NLS / 2018 - 2019

Dated : 11.04.2019

1	Name of the Industry	M/s. CPCL.,			
2	Address of the industry	Manali, Chennai - 600 068.			
3	Date of survey	13.03.2019			
4	Category	RL	Land use classification	Industrial	
5	Type of Survey	Ambient	Time of Survey	Day	
6	Meteorological conditions	Calm / Windy / Rainy	Windy		
Logging Parametes					
Instrument Used		Larson - Davis System -824	Serial No:	824A2010	
Logging interval		10 minutes each point	Measuring Range dB(A)	40 to 120	
Weighing		Peak weighting	'C'	Time weighting	10 min
Sound Incidence		Random	Time in hrs	14.00 - 15.00	

Report of Noise Level Monitoring

Sl. No.	Location	Duration (min)	Distance (mts)	Direction	Leq dB(A)
1	Near Fire Station	10	700	N	59.1
2	Near R & D	10	900	NNE	57.1
3	Near CPP Online Station	10	800	NE	62.8
4	Near Cooling Tower	10	500	ENE	76.1
5	Near Flair Area	10	300	E	61.8

#The Direction and Distance are from the Centre of the Plant.

#Leq value is the average energy for the measured period


 Deputy Chief Scientific Officer 11/4/19
 DEL MANALI

#11/4



TAMIL NADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Manali.

AMBIENT NOISE LEVEL SURVEY - Report of analysis

Report No.: 67 / NLS / 2018 - 2019

Dated : 11.04.2019

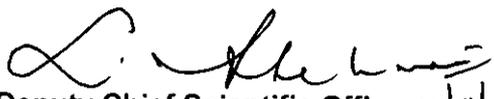
1	Name of the Industry	M/s. CPCL.,			
2	Address of the industry	Manali, Chennai - 600 068.			
3	Date of survey	13.03.2019			
4	Category	RL	Land use classification	Industrial	
5	Type of Survey:	Ambient	Time of Survey	Day	
6	Meteorological conditions	Calm / Windy / Rainy		Windy	
Logging Parametes					
Instrument Used		Larson - Davis System -824	Serial No:	824A2010	
Logging interval		10 minutes each point	Measuring Range dB(A)	40 to 120	
Weighing		Peak weighting	'C'	Time weighting	10 min
Sound Incidence		Random	Time in hrs	14.00 - 15.00	

Report of Noise Level Monitoring

Sl. No.	Location	Duration (min)	Distance (mts)	Direction	Leq dB(A)
1	Near ETP - I	10	700	ESE	52.2
2	Near Temple	10	900	SE	50.8
3	Near South Gate	10	800	S	58.5
4	Near Tank No. 119	10	500	SW	51.2
5	Near Sub Station - Ref.II	10	300	WSW	65.7

#The Direction and Distance are from the Centre of the Plant.

#Leq value is the average energy for the measured period


 Deputy Chief Scientific Officer 11/4/19
 DEL MANALI
 #1/4



TAMIL NADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Manali.

AMBIENT NOISE LEVEL SURVEY - Report of analysis

Report No.: 67 / NLS / 2018 - 2019

Dated : 11.04.2019

1	Name of the Industry	M/s. CPCL.,		
2	Address of the industry	Manali, Chennai - 600 068.		
3	Date of survey	13.03.2019		
4	Category	RL	Land use classification	Industrial
5	Type of Survey:	Ambient	Time of Survey	Day
6	Meteorological conditions	Calm / Windy / Rainy	Windy	
Logging Parametes				
Instrument Used		Larson - Davis System -824	Serial No:	824A2010
Logging interval		10 minutes each point	Measuring Range dB(A)	40 to 120
Weighing		Peak weighting	'C'	Time weighting
Sound Incidence		Random	Time in hrs	14.00 - 15.00

Report of Noise Level Monitoring

Sl. No.	Location	Duration (min)	Distance (mts)	Direction	Leq dB(A)
1	Near Fire & Safety	10	700	W	60.8
2	Near CISF DC Office	10	900	WNW	70.8
3	Near Over Bridge	10	300	NNW	65.1
4	Near Ref III Sub Station	10	500	NW	64.7
5	Near Pond	10	700	NW	73.2

#The Direction and Distance are from the Centre of the Plant.

#Leq value is the average energy for the measured period


 Deputy Chief Scientific Officer, 11/4/19
 DEL MANALI
 11/4



TAMILNADU POLLUTION CONTROL BOARD

District Environmental Laboratory, Manali.

TVOC Survey - Report of Analysis

Report No: 67 /TVOC/ 2018-19

Dated: 11.04.2019

1. Name of the Industry : **M/s. CPCL,**
 2. Address of the Industry : Manali
 Chennai -68.
 3. Date Of Survey : 13.03.2019
 4. Category : RL

TVOC - Analysis Report

Station No.	Location	Direction	Distance (mts)	TVOC ($\mu\text{g}/\text{m}^3$)
1	Near Fire Station	N	700	592
2	Near R&D	NNE	900	512
3	Near CPP	NE	800	484
4	Near Cooling Tower	ENE	500	517
5	Near Flair Area	E	300	715
6	Near ETP-I	ESE	500	485
7	Near Temple	SE	900	561
8	Near South Gate	S	800	745
9	Near Tank Area (119)	SW	900	817
10	Near Ref-II Substation	WSW	300	902
11	Near Fire & Safety	W	400	971
12	Near CISF DC Office.	WNW	600	814
13	Near Bridge	NW	400	1094
14	Near Ref-III Substation	NW	600	1134
15	Near Pond	NNW	700	912

#The Direction and Distance are from the centre of the Plant


 Deputy Chief Scientific Officer, 11/4/19
 DEL - Manlai
 11/4/19



TAMILNADU POLLUTION CONTROL BOARD
District Environmental Laboratory, Manali

INVOICE

Report No.67/ AAQ/SM/NLS/2018-19

Invoice No.	67/2018-19
Date	11.04.2019

To
M/s. CPCL.
Manali, Chennai- 68 .

Sl. No.	Description	No. of Stations	Rate (Rs.)	Amount (Rs.)
1.	Ambient Air Quality Survey – PM ₁₀	12	2000	24,000
2.	Ambient Air Quality Survey – PM _{2.5}	4	3000	12,000
3.	Stack Monitoring	27	7500	2,02,500
4.	Analysis Charges	39	1800	70,200
5.	Noise Level Survey	15	800	12,000
6.	VOC	15	2000	30,000
Total				3,50,700
Amount to be paid				3,50,700


 DY. Chief Scientific Officer, 11/4/19
 DEL – Manali

Test Report

Report No : MI18120001-01 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 1F1A

Sample No : MI18120001-01 Sampling Date : 10 Dec 2018

Sampling Location : Plant ATM Sample Received on : 17 Dec 2018

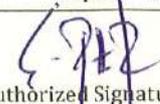
Sample Condition : Fit for Analysis Test Started on : 17 Dec 2018

Sampling Procedure : GL/EN/SOP/111 Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	632	K	-
2	Velocity	EPA Method 1-3	8.9	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	79958	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	66	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	15.9	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	129	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	104	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....
Page 1 of 1


 Authorized Signature:
E. Prithvirajan
 Manager - Lab

1 | Page #6/1, Sri Joythi Complex, 1st Floor, Murugesan Nagar, Balavinayagar Street Arumbakkam, Chennai - 106.

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Test Report

Report No : MI18120001-02 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
 Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068
 Sample Name : Stack Emission
 Sample Description : 1F1 B
 Sample No : MI18120001-02 Sampling Date : 10 Dec 2018
 Sampling Location : Plant ATM Sample Received on : 17 Dec 2018
 Sample Condition : Fit for Analysis Test Started on : 17 Dec 2018
 Sampling Procedure : GL/EN/SOP/111 Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	483	K	-
2	Velocity	EPA Method 1-3	7.9	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	29284	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	66	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	21	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	138.6	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	127	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

Page 1 of 1


 Authorized Signature:
E. Prithivirajan
 Manager - Lab

1 | Page #6/1, Sri Joythi Complex, 1st Floor, Murugesan Nagar, Balavinayagar Street Arumbakkam, Chennai -106.

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Test Report

Report No : MI18120001-03 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 1F 2

Sample No : MI18120001-03

Sampling Date : 10 Dec 2018

Sampling Location : Plant VAC

Sample Received on : 17 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 17 Dec 2018

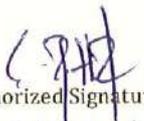
Sampling Procedure : GL/EN/SOP/111

Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	483	K	-
2	Velocity	EPA Method 1-3	9.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	23539	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	51	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	17.7	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	142.8	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	124	mg/Nm ³	Gas - 350
					Liquid -450

.....End of Report.....
Page 1 of 1


 Authorized Signature:
E. Prithvirajan
 Manager - Lab

1 | Page #6/1, Sri Joythi Complex, 1st Floor, Murugesan Nagar, Balavinayagar Street Arumbakkam, Chennai - 106.

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Test Report

Report No : MI18120001-04 **Report Date** : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 1F 3

Sample No : MI18120001-04

Sampling Date : 10 Dec 2018

Sampling Location : Plant VAC

Sample Received on : 17 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 17 Dec 2018

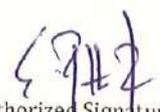
Sampling Procedure : GL/EN/SOP/111

Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	471	K	-
2	Velocity	EPA Method 1-3	10.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	26707	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	78	mg/m ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	38.2	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	155	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	107	mg/Nm ³	Gas - 350
					Liquid -450

.....End of Report.....
Page 1 of 1


Authorized Signature:
E. Prithvirajan
Manager - Lab

1 | Page #6/1, Sri Joythi Complex, 1st Floor, Murugesan Nagar, Balavinayagar Street Arumbakkam, Chennai - 106.

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Test Report

Report No : MI18120001-05 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 15F1A

Sample No : MI18120001-05 Sampling Date : 10 Dec 2018

Sampling Location : Plant 15 ATM Sample Received on : 17 Dec 2018

Sample Condition : Fit for Analysis Test Started on : 17 Dec 2018

Sampling Procedure : GL/EN/SOP/111 Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	483	K	-
2	Velocity	EPA Method 1-3	8.9	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	104625	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	55	mg/m ³	Gas -150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	32.3	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	132	mg/Nm ³	Gas -50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	102	mg/Nm ³	Gas - 350
					Liquid -450

.....End of Report.....

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 Manager - Lab

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Test Report

Report No : MI18120001-06 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 15F1B

Sample No : MI18120001-06

Sampling Date : 10 Dec 2018

Sampling Location : Plant 15 ATM

Sample Received on : 17 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 17 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	491	K	-
2	Velocity	EPA Method 1-3	7.9	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	39056	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	83	mg/m ³	Gas -150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	24	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	181	mg/Nm ³	Gas -50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	104	mg/Nm ³	Gas - 350
					Liquid -450

.....End of Report.....
Page 1 of 1


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Test Report

Report No : MI18120001-07 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 15F2A

Sample No : MI18120001-07

Sampling Date : 11 Dec 2018

Sampling Location : Plant 15 VAC

Sample Received on : 17 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 17 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	602	K	-
2	Velocity	EPA Method 1-3	9.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	27868	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	42	mg/m ³	Gas -150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	26.5	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	151	mg/Nm ³	Gas -50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	124	mg/Nm ³	Gas - 350
					Liquid -450

.....End of Report.....

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Test Report

Report No : MI18120001-08 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 15F2B

Sample No : MI18120001-08

Sampling Date : 11 Dec 2018

Sampling Location : Plant 15 VAC

Sample Received on : 17 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 17 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	629	K	-
2	Velocity	EPA Method 1-3	8.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	23584	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	63	mg/m ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	15.3	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	172	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	123	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....
Page 1 of 1


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Test Report

Report No : MI18120001-09 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 16F1

Sample No : MI18120001-09 Sampling Date : 11 Dec 2018

Sampling Location : Plant 16 Sample Received on : 17 Dec 2018

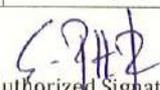
Sample Condition : Fit for Analysis Test Started on : 17 Dec 2018

Sampling Procedure : GL/EN/SOP/111 Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	582	K	-
2	Velocity	EPA Method 1-3	17.1	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	79958	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	29	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	10.1	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	16	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	63	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....
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Test Report

Report No : MI18120001-10 **Report Date** : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 206 F2

Sample No : MI18120001-10 **Sampling Date** : 11 Dec 2018

Sampling Location : Plant 206 NHT **Sample Received on** : 17 Dec 2018

Sample Condition : Fit for Analysis **Test Started on** : 17 Dec 2018

Sampling Procedure : GL/EN/SOP/111 **Test Completed on** : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	583	K	-
2	Velocity	EPA Method 1-3	22.1	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	103160	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	75	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	20.1	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	41	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	82	mg/Nm ³	Gas - 350
					Liquid - 450

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Test Report

Report No : MI18120001-11 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : Boiler 1

Sample No : MI18120001-11

Sampling Date : 11 Dec 2018

Sampling Location : NCCP Boiler 1

Sample Received on : 17 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 17 Dec 2018

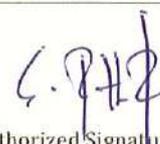
Sampling Procedure : GL/EN/SOP/111

Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	432	K	-
2	Velocity	EPA Method 1-3	18.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	116541	Nm ³ /hr	-
5	Carbon Monoxide as CO	GL/EN/SOP/149	63	mg/Nm ³	Gas - 150
					Liquid - 200
7	Particulate Matter	GL/EN/SOP/113	42.4	mg/Nm ³	Gas - 10
					Liquid - 100
8	Sulphur Dioxide as SO ₂	EPA Method 6	404	mg/Nm ³	Gas - 50
					Liquid - 1700
9	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	163	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....
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Test Report

Report No : MI18120001-12 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : Boiler 2

Sample No : MI18120001-12

Sampling Date : 11 Dec 2018

Sampling Location : OPH Boiler -II

Sample Received on : 17 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 17 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	441	K	-
2	Velocity	EPA Method 1-3	18.7	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	115396	Nm ³ /hr	-
5	Carbon Monoxide as CO	GL/EN/SOP/149	38	mg/Nm ³	Gas - 150
					Liquid - 200
7	Particulate Matter	GL/EN/SOP/113	41.4	mg/Nm ³	Gas - 10
					Liquid - 100
8	Sulphur Dioxide as SO ₂	EPA Method 6	434	mg/Nm ³	Gas - 50
					Liquid - 1700
9	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	143	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....
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Test Report

Report No : MI18120001-13 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : Boiler 3

Sample No : EN18120001-13

Sampling Date : 12 Dec 2018

Sampling Location : NCCP Boiler -III

Sample Received on : 17 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 17 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	459	K	-
2	Velocity	EPA Method 1-3	19.3	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	114428	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	63	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	58.2	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	639	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides Of Nitrogen as NO ₂	GL/EN/SOP/149	175	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-14 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : Boiler 4

Sample No : MI18120001-14

Sampling Date : 12 Dec 2018

Sampling Location : NCCP Boiler -IV

Sample Received on : 17 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 17 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	483	K	-
2	Velocity	EPA Method 1-3	20.1	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	113250	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	62	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	40.9	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	615	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	106	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-15 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 201F1/F2

Sample No : MI18120001-15

Sampling Date : 10 Dec 2018

Sampling Location : Plant 201 VAC

Sample Received on : 17 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 17 Dec 2018

Sampling Procedure : GL/EN/SOP/111

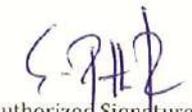
Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	462	K	-
2	Velocity	EPA Method 1-3	3.7	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	80065	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	62	mg/m ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	36	mg/Nm ³	Gas - 10
					Liquid -100
6	Sulphur Dioxide as SO ₂	EPA Method 6	376	mg/Nm ³	Gas - 50
					Liquid -1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	261	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-16 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 205F1

Sample No : MI18120001-16

Sampling Date : 12 Dec 2018

Sampling Location : Plant 205 HGU PDS

Sample Received on : 17 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 17 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	485	K	-
2	Velocity	EPA Method 1-3	20.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	111937	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	170	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	12.9	mg/Nm ³	Gas -10
					Liquid -100
6	Sulphur Dioxide as SO ₂	EPA Method 6	37	mg/Nm ³	Gas - 50
					Liquid -1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	63	mg/Nm ³	Gas -350
					Liquid -450

.....End of Report.....
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Test Report

Report No : MI18120001-17 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 205F2

Sample No : MI18120001-17

Sampling Date : 12 Dec 2018

Sampling Location : Plant 205 Reformer

Sample Received on : 17 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 17 Dec 2018

Sampling Procedure : GL/EN/SOP/111

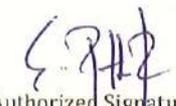
Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	441	K	-
2	Velocity	EPA Method 1-3	20.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	123105	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	38	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	20.4	mg/Nm ³	Gas -10
					Liquid -100
6	Sulphur Dioxide as SO ₂	EPA Method 6	19	mg/Nm ³	Gas - 50
					Liquid -1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	44	mg/Nm ³	Gas -350
					Liquid -450

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Manager - Lab

Test Report

Report No : MI18120001-18 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 206 F1

Sample No : MI18120001-18

Sampling Date : 12 Dec 2018

Sampling Location : Plant 206 NHT

Sample Received on : 17 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 17 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	527	K	-
2	Velocity	EPA Method 1-3	18.6	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	96049	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	77	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	27.1	mg/Nm ³	Gas - 10
					Liquid -100
6	Sulphur Dioxide as SO ₂	EPA Method 6	19	mg/Nm ³	Gas - 50
					Liquid -1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	62	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....
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 Manager - Lab

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Test Report

Report No : MI18120001-19 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 206 F3-F6

Sample No : MI18120001-19

Sampling Date : 13 Dec 2018

Sampling Location : Plant 206 CCR

Sample Received on : 17 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 17 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	549	K	-
2	Velocity	EPA Method 1-3	9.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	47091	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	19	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	56.4	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	85	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	51	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....
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Test Report

Report No : MI18120001-20 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 210 F1

Sample No : MI18120001-20

Sampling Date : 13 Dec 2018

Sampling Location : Plant 210 TR-A

Sample Received on : 17 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 17 Dec 2018

Sampling Procedure : GL/EN/SOP/111

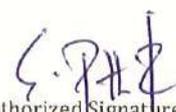
Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	837	K	-
2	Velocity	EPA Method 1-3	19.2	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	74017	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	108	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	11.0	mg/Nm ³	-
					-
6	Sulphur Dioxide as SO ₂	EPA Method 6	475	mg/Nm ³	-
					-
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	124	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-21 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 211 F1

Sample No : MI18120001-21

Sampling Date : 13 Dec 2018

Sampling Location : Plant 211 DHDT

Sample Received on : 17 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 17 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	438	K	-
2	Velocity	EPA Method 1-3	11.3	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	70209	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	55	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	27.1	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	305	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	143	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-22 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 214 F1

Sample No : MI18120001-22

Sampling Date : 13 Dec 2018

Sampling Location : Plant 214 HGU

Sample Received on : 17 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 17 Dec 2018

Sampling Procedure : GL/EN/SOP/111

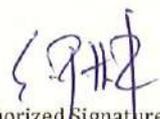
Test Completed on : 21 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	462	K	-
2	Velocity	EPA Method 1-3	12.1	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	71274	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	65	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	19.0	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	253	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	144	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-23 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 207-F2

Sample No : MI18120001-23

Sampling Date : 17 Dec 2018

Sampling Location : Plant-207 OHCU

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	529	K	-
2	Velocity	EPA Method 1-3	21.2	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	99582	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	76	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	11.4	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	5.5	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	208	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-24 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 212 F1

Sample No : MI18120001-24

Sampling Date : 17 Dec 2018

Sampling Location : Plant-212 ISOM

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	507	K	-
2	Velocity	EPA Method 1-3	4.73	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	25389	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	28	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	58.6	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	63	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	88	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-25 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 207-F1

Sample No : MI18120001-25

Sampling Date : 17 Dec 2018

Sampling Location : Plant-207 OHCU

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	515	K	-
2	Velocity	EPA Method 1-3	21.8	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	105184	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	88	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	12.3	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	8.2	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	102	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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 Manager - Lab

Test Report

Report No : MI18120001-26 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 204-F1

Sample No : MI18120001-26

Sampling Date : 17 Dec 2018

Sampling Location : Plant-204

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

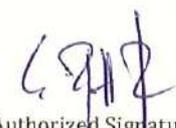
Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	562	K	-
2	Velocity	EPA Method 1-3	9.1	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	161878	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	50	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	27.9	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	173.0	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	64	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-27 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 86F1

Sample No : MI18120001-27

Sampling Date : 17 Dec 2018

Sampling Location : 86-DCU

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

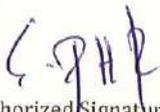
Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	393	K	-
2	Velocity	EPA Method 1-3	19.2	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	369314	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	87	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	22.7	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	54.9	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	68	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-28 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 4F1

Sample No : MI18120001-28

Sampling Date : 17 Dec 2018

Sampling Location : Plant-4

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	481	K	-
2	Velocity	EPA Method 1-3	10.9	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	26055	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	75	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	37.7	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	165	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	104	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-29 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 10F101

Sample No : MI18120001-29

Sampling Date : 17 Dec 2018

Sampling Location : Plant-10

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	559	K	-
2	Velocity	EPA Method 1-3	9.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	20068	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	42	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	31.9	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	242	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	143	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-30 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 13F1

Sample No : MI18120001-30

Sampling Date : 18 Dec 2018

Sampling Location : Plant-13

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	499	K	-
2	Velocity	EPA Method 1-3	10.1	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	9310	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	41	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	27.0	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	135	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	197	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-31 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 14F1

Sample No : MI18120001-31

Sampling Date : 18 Dec 2018

Sampling Location : Plant-14 DOU

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	1023	K	-
2	Velocity	EPA Method 1-3	12.7	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	16033	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	37	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	23.6	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	96.1	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	79	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-32 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 9F201

Sample No : MI18120001-32

Sampling Date : 18 Dec 2018

Sampling Location : Plant-9

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

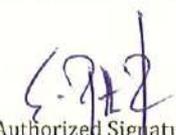
Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	553	K	-
2	Velocity	EPA Method 1-3	12.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	41586	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	50	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	27.2	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	93.3	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	62	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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 Authorized Signature:
E. Prithvirajan
 Manager - Lab

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Test Report

Report No : MI18120001-33 **Report Date** : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 9F301

Sample No : MI18120001-33

Sampling Date : 18 Dec 2018

Sampling Location : Plant-9

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	536	K	-
2	Velocity	EPA Method 1-3	13.9	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	22662	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	49	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	19.1	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	91	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	97	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-34 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission
Sample Description : 73F101
Sample No : MI18120001-34 Sampling Date : 18 Dec 2018
Sampling Location : Plant-73 Sample Received on : 21 Dec 2018
Sample Condition : Fit for Analysis Test Started on : 21 Dec 2018
Sampling Procedure : GL/EN/SOP/111 Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	549	K	-
2	Velocity	EPA Method 1-3	12.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	50189	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	62	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	26.9	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	146	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	82	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....
Page 1 of 1


 Authorized Signature:
 E. Prithivirajan
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Test Report

Report No : MI18120001-35 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 73F102

Sample No : MI18120001-35

Sampling Date : 18 Dec 2018

Sampling Location : Plant-73

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	554	K	-
2	Velocity	EPA Method 1-3	11.7	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	48881	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	42	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	19.2	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	184	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	108	mg/Nm ³	Gas - 350
					Liquid - 450

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Test Report

Report No : MI18120001-36 **Report Date** : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 14F101

Sample No : MI18120001-36

Sampling Date : 19 Dec 2018

Sampling Location : Plant-14 Hi Fi

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	1018	K	-
2	Velocity	EPA Method 1-3	13.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	171127	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	39	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	29.1	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	132	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	82	mg/Nm ³	Gas - 350
					Liquid - 450

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Test Report

Report No : MI18120001-37 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 71F1

Sample No : MI18120001-37

Sampling Date : 20 Dec 2018

Sampling Location : Plant-71

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	803	K	-
2	Velocity	EPA Method 1-3	13.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	44741	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	41	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	15.4	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	115	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	82	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-38 **Report Date** : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 76F01

Sample No : MI18120001-38

Sampling Date : 20 Dec 2018

Sampling Location : Plant-76 H2

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	441	K	-
2	Velocity	EPA Method 1-3	20.3	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	86993	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	62	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	32	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	494	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	27	mg/Nm ³	Gas - 350
					Liquid - 450

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Test Report

Report No : MI18120001-39 **Report Date** : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 77F1

Sample No : MI18120001-39

Sampling Date : 20 Dec 2018

Sampling Location : Plant-77

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	611	K	-
2	Velocity	EPA Method 1-3	7.95	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	24590	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	109	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	38.1	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	5	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	18	mg/Nm ³	Gas - 350
					Liquid - 450

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Test Report

Report No : MI18120001-40 **Report Date** : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 78F1

Sample No : MI18120001-40

Sampling Date : 20 Dec 2018

Sampling Location : Plant-78 Tr-B

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	512	K	-
2	Velocity	EPA Method 1-3	9.1	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	3732	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	38	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	51.9	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	1263	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	22	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-41 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : GT1

Sample No : MI18120001-41

Sampling Date : 20 Dec 2018

Sampling Location : HRSG-I

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	701	K	-
2	Velocity	EPA Method 1-3	13.2	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	51244	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	41	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	5.6	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	49	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	126	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-42 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : GT2

Sample No : MI18120001-42

Sampling Date : 21 Dec 2018

Sampling Location : HRSG-2

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	456	K	-
2	Velocity	EPA Method 1-3	10.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	73542	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	26	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	35.6	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	36	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	91	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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**Test Report****Report No** : MI18120001-43 **Report Date** : 31 Dec 2018**SAMPLE DRAWN BY LABORATORY****Customer Name** : M/S. Chennai Petroleum Corporation Limited- Refinery**Customer Address** : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068**Sample Name** : Stack Emission**Sample Description** : GT3**Sample No** : MI18120001-43**Sampling Date** : 21 Dec 2018**Sampling Location** : HRSG-3**Sample Received on** : 21 Dec 2018**Sample Condition** : Fit for Analysis**Test Started on** : 21 Dec 2018**Sampling Procedure** : GL/EN/SOP/111**Test Completed on** : 31 Dec 2018**Test result**

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	709	K	-
2	Velocity	EPA Method 1-3	12.2	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	46828	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	42	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	6.8	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	27	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	102	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : EN18120001-44 **Report Date** : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : GT4

Sample No : EN18120001-44

Sampling Date : 21 Dec 2018

Sampling Location : HRSG-4

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	782	K	-
2	Velocity	EPA Method 1-3	13.9	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	48372	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	41	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	19.4	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	129	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	117	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Test Report

Report No : MI18120001-45 Report Date : 21 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
 Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068
 Sample Name : Stack Emission
 Sample Description : Boiler 5
 Sample No : MI18120001-45 Sampling Date : 21 Dec 2018
 Sampling Location : OPH-Boiler V Sample Received on : 21 Dec 2018
 Sample Condition : Fit for Analysis Test Started on : 21 Dec 2018
 Sampling Procedure : GL/EN/SOP/111 Test Completed on : 31 Dec 2018

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	618	K	-
2	Velocity	EPA Method 1-3	17.7	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	216507	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	43	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	25.6	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	60	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	163	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....
Page 1 of 1


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 Manager - Lab

Test Report

Report No : MI18120001-46 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
 Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068
 Sample Name : Ambient Air Quality
 Sample Description : Ambient Air Quality Sampling Date & Time : 10 to 11 Dec 2018
 Sample No : MI18120001-46 08:30 am to 08:30 am
 Sample Location : CPCL R & D Top Sample Received on : 21 Dec 2018
 Sample Condition : Fit for Analysis Test Started on : 21 Dec 2018
 Relative Humidity : 60 % Test Completed on : 31 Dec 2018
 Sampling Procedure : IS 5182 Part V & XIV Ambient Temperature : 33°C

Test Results

Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
1	Sulphur Dioxide as SO ₂	IS 5182 (Part 2):2001	16.5	µg/m ³	80
2	Nitrogen Dioxide as NO ₂	IS 5182 (Part 6):2006	22.3	µg/m ³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	58.2	µg/m ³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	26.7	µg/m ³	60
5	Ozone as O ₃	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m ³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m ³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m ³	4
8	Ammonia as NH ₃	GL/EN/SOP/057	BDL(DL:20)	µg/m ³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m ³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m ³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter.

Note : BDL: Below Detection Limit, DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

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 Authorized Signature:
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Test Report

Report No : MI18120001-47 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
 Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068
 Sample Name : Ambient Air Quality
 Sample Description : Ambient Air Quality Sampling Date & Time : 10 to 11 Dec 2018
 Sample No : MI18120001-47 09:00 am to 09:00 am
 Sample Location : CPCL CPP Sample Received on : 21 Dec 2018
 Sample Condition : Fit for Analysis Test Started on : 21 Dec 2018
 Relative Humidity : 60 % Test Completed on : 31 Dec 2018
 Sampling Procedure : IS 5182 Part V & XIV Ambient Temperature : 33°C

Test Results

Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
1	Sulphur Dioxide as SO ₂	IS 5182 (Part 2):2001	10.8	µg/m ³	80
2	Nitrogen Dioxide as NO ₂	IS 5182 (Part 6):2006	14.3	µg/m ³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	46.5	µg/m ³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	19.4	µg/m ³	60
5	Ozone as O ₃	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m ³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m ³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m ³	4
8	Ammonia as NH ₃	GL/EN/SOP/057	BDL(DL:20)	µg/m ³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m ³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m ³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter.

Note : BDL: Below Detection Limit., DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

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Authorized Signature:

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Test Report

Report No : MI18120001-48 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
 Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068
 Sample Name : Ambient Air Quality
 Sample Description : Ambient Air Quality Sampling Date & Time : 10 to 11 Dec 2018
 Sample No : MI18120001-48 09:30 am to 09:30 am
 Sample Location : CPCL SS-5 Sample Received on : 21 Dec 2018
 Sample Condition : Fit for Analysis Test Started on : 21 Dec 2018
 Relative Humidity : 60 % Test Completed on : 31 Dec 2018
 Sampling Procedure : IS 5182 Part V & XIV Ambient Temperature : 33°C

Test Results

Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
1	Sulphur Dioxide as SO ₂	IS 5182 (Part 2):2001	12.1	µg/m ³	80
2	Nitrogen Dioxide as NO ₂	IS 5182 (Part 6):2006	17.3	µg/m ³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	51.7	µg/m ³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	22.8	µg/m ³	60
5	Ozone as O ₃	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m ³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m ³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m ³	4
8	Ammonia as NH ₃	GL/EN/SOP/057	BDL(DL:20)	µg/m ³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m ³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m ³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter.

Note : BDL: Below Detection Limit, DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

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Test Report

Report No : MI18120001-49 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Ambient Air Quality

Sample Description : Ambient Air Quality

Sampling Date & Time : 10 to 11 Dec 2018

Sample No : MI18120001-49

10:00 am to 10:00 am

Sample Location : CPCL Temple

Sample Received on : 21 Dec 2018

Sample Condition : Fit for Analysis

Test Started on : 21 Dec 2018

Relative Humidity : 60 %

Test Completed on : 31 Dec 2018

Sampling Procedure : IS 5182 Part V & XIV

Ambient Temperature : 33°C

Test Results

Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
1	Sulphur Dioxide as SO ₂	IS 5182 (Part 2):2001	18.1	µg/m ³	80
2	Nitrogen Dioxide as NO ₂	IS 5182 (Part 6):2006	23.6	µg/m ³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	60.2	µg/m ³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	28.6	µg/m ³	60
5	Ozone as O ₃	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m ³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m ³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m ³	4
8	Ammonia as NH ₃	GL/EN/SOP/057	BDL(DL:20)	µg/m ³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m ³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m ³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter.

Note : BDL: Below Detection Limit, DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

End of Report

Page 1 of 1

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Test Report

Report No : MI18120001-50 Report Date : 31 Dec 2018

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068
Sample Name : Ambient Air Quality
Sample Description : Ambient Air Quality Sampling Date & Time : 10 to 11 Dec 2018
Sample No : MI18120001-50 10:30 am to 10:30 am
Sample Location : CPCL TTP Sample Received on : 21 Dec 2018
Sample Condition : Fit for Analysis Test Started on : 21 Dec 2018
Relative Humidity : 60 % Test Completed on : 31 Dec 2018
Sampling Procedure : IS 5182 Part V & XIV Ambient Temperature : 33°C

Test Results

Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
1	Sulphur Dioxide as SO ₂	IS 5182 (Part 2):2001	10.8	µg/m ³	80
2	Nitrogen Dioxide as NO ₂	IS 5182 (Part 6):2006	14.9	µg/m ³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	50.3	µg/m ³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	22.1	µg/m ³	60
5	Ozone as O ₃	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m ³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m ³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m ³	4
8	Ammonia as NH ₃	GL/EN/SOP/057	BDL(DL:20)	µg/m ³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m ³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m ³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter.

Note : BDL: Below Detection Limit, DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

End of Report

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TEST REPORT

Report No : EN19020022-01 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 1F1A

Sample No : EN19020022-01

Sampling Date : 22 Feb 2019

Sampling Location : Plant ATM

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

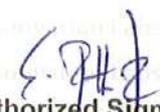
Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part-3):2008	509	K	
2	Velocity	EPA Method 1-3	8.7	m/sec	
3	Volume of Gas Discharge	IS 11255 (Part-3):2008	97049	Nm ³ /hr	
4	Carbon Monoxide as CO	GL/EN/SOP/149	67	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	20	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	145.5	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	119	mg/Nm ³	Gas - 350 Liquid - 450

.....End of Report.....

Page 1 of 1


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TEST REPORT

Report No : EN19020022-02 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 1F1 B

Sample No : EN19020022-02

Sampling Date : 22 Feb 2019

Sampling Location : Plant ATM

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	465	K	
2	Velocity	EPA Method 1-3	7.4	m/sec	
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	28492	Nm ³ /hr	
4	Carbon Monoxide as CO	GL/EN/SOP/149	50	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	15.1	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	142.8	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	110	mg/Nm ³	Gas - 350 Liquid - 450

.....End of Report.....

Page 1 of 1

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TEST REPORT

Report No : EN19020022-03 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 1F 2

Sample No : EN19020022-03

Sampling Date : 22 Feb 2019

Sampling Location : Plant VAC

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	474	K	-
2	Velocity	EPA Method 1-3	9.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	24241	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	80	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	20.1	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	134.5	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	137	mg/Nm ³	Gas - 350 Liquid - 450

.....End of Report.....

Page 1 of 1

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TEST REPORT

Report No : EN19020022-05 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 15F1-A

Sample No : EN19020022-05

Sampling Date : 22 Feb 2019

Sampling Location : Plant 15 ATM

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part-3):2008	476	K	-
2	Velocity	EPA Method 1-3	8.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part-3):2008	101392	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	47	mg/Nm ³	Gas -150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	26.1	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	110	mg/Nm ³	Gas -50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	88	mg/Nm ³	Gas - 350
					Liquid -450

.....End of Report.....

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TEST REPORT

Report No : EN19020022-06 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 15F1B

Sample No : EN19020022-06

Sampling Date : 22 Feb 2019

Sampling Location : Plant 15 ATM

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part-3):2008	468	K	-
2	Velocity	EPA Method 1-3	7.3	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part-3):2008	37863	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	53	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	22.3	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	132	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	110	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : EN19020022-07 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 15F2A

Sample No : EN19020022-07

Sampling Date : 23 Feb 2019

Sampling Location : Plant 15 VAC

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	583	K	-
2	Velocity	EPA Method 1-3	8.9	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	26959	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	55	mg/m ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	25.9	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	143	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	110	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Authorized Signature

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TEST REPORT

Report No : EN19020022-09 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 16F1

Sample No : EN19020022-09 Sampling Date : 23 Feb 2019

Sampling Location : Plant 16 Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111 Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part-3):2008	582	K	-
2	Velocity	EPA Method 1-3	16.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part-3):2008	77153	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	20	mg/m ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	10.3	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	16	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	53	mg/Nm ³	Gas - 350 Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : EN19020022-10 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 206F-02

Sample No : EN19020022-10

Sampling Date : 23 Feb 2019

Sampling Location : Plant 206 NHT

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part-3):2008	564	K	-
2	Velocity	EPA Method 1-3	21.7	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part-3):2008	104706	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	56	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	18	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	38	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	82	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : EN19020022-11 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : Boiler 1

Sample No : EN19020022-11

Sampling Date : 22 Feb 2019

Sampling Location : NCCP Boiler 1

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part-3):2008	430	K	-
2	Velocity	EPA Method 1-3	18.9	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part-3):2008	119614	Nm ³ /hr	-
5	Carbon Monoxide as CO	GL/EN/SOP/149	44	mg/Nm ³	Gas - 150 Liquid - 200
7	Particulate Matter	GL/EN/SOP/113	49.8	mg/Nm ³	Gas - 10 Liquid - 100
8	Sulphur Dioxide as SO ₂	EPA Method 6	384	mg/Nm ³	Gas - 50 Liquid - 1700
9	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	168	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19020022-12 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : Boiler 2

Sample No : EN19020022-12

Sampling Date : 23 Feb 2019

Sampling Location : OPH Boiler -II

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part-3):2008	428	K	-
2	Velocity	EPA Method 1-3	18.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part-3):2008	116994	Nm ³ /hr	-
5	Carbon Monoxide as CO	GL/EN/SOP/149	57	mg/Nm ³	Gas - 150 Liquid - 200
7	Particulate Matter	GL/EN/SOP/113	55.6	mg/Nm ³	Gas - 10 Liquid - 100
8	Sulphur Dioxide as SO ₂	EPA Method 6	420	mg/Nm ³	Gas - 50 Liquid - 1700
9	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	155	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19020022-13 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : Boiler 3

Sample No : EN19020022-13

Sampling Date : 25 Feb 2019

Sampling Location : NCCP Boiler -III

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part-3):2008	458	K	-
2	Velocity	EPA Method 1-3	18.6	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part-3):2008	110519	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	56	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	51.3	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	612	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides Of Nitrogen as NO ₂	GL/EN/SOP/149	163	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19020022-14 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : Boiler 4

Sample No : EN19020022-14

Sampling Date : 25 Feb 2019

Sampling Location : NCCP Boiler -IV

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	479	K	-
2	Velocity	EPA Method 1-3	19.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	112908	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	53	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	42.2	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	609	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	154	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19020022-15 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 201F01/F02

Sample No : EN19020022-15

Sampling Date : 25 Feb 2019

Sampling Location : Plant 201 VAC

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	453	K	-
2	Velocity	EPA Method 1-3	3.3	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	72828	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	59	mg/Nm ³	Gas - 450 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	28.7	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	343	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	274	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19020022-16 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 205F-01

Sample No : EN19020022-16

Sampling Date : 25 Feb 2019

Sampling Location : Plant 205 HGU PDS

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	471	K	-
2	Velocity	EPA Method 1-3	19.6	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	110744	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	138	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	8.3	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	38	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	42	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19020022-17 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 205F2

Sample No : EN19020022-17

Sampling Date : 25 Feb 2019

Sampling Location : Plant 205 Reformer

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	435	K	
2	Velocity	EPA Method 1-3	19.8	m/sec	
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	121132	Nm ³ /hr	
4	Carbon Monoxide as CO	GL/EN/SOP/149	22	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	11.7	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	19	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	42	mg/Nm ³	Gas - 350 Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : EN19020022-18 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 206F-01

Sample No : EN19020022-18

Sampling Date : 25 Feb 2019

Sampling Location : Plant 206 NHT

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	538	K	-
2	Velocity	EPA Method 1-3	18.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	98073	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	56	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	13.5	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	19	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	64	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : EN19020022-19 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 206 F3-F6

Sample No : EN19020022-19

Sampling Date : 26 Feb 2019

Sampling Location : Plant 206 CCR

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part-3):2008	534	K	-
2	Velocity	EPA Method 1-3	9.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part-3):2008	47904	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	19	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	55.7	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	74	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	53	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19020022-20 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 210F-01

Sample No : EN19020022-20

Sampling Date : 27 Feb 2019

Sampling Location : Plant 210 TR-A

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	832	K	-
2	Velocity	EPA Method 1-3	18.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	71747	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	58	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	14.5	mg/Nm ³	-
6	Sulphur Dioxide as SO ₂	EPA Method 6	442	mg/Nm ³	-
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	79	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19020022-21 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 211F-01

Sample No : EN19020022-21

Sampling Date : 27 Feb 2019

Sampling Location : Plant 211 DHDT

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	433	K	-
2	Velocity	EPA Method 1-3	10.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	65992	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	51	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	38.4	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	253	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	139	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Authorized Signature

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TEST REPORT

Report No : EN19020022-22 Report Date : 07 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited - Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 214F-01

Sample No : EN19020022-22

Sampling Date : 27 Feb 2019

Sampling Location : Plant 214 HGU

Sample Received on : 28 Feb 2019

Sample Condition : Fit for Analysis

Test Started on : 28 Feb 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 07 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	443	K	-
2	Velocity	EPA Method 1-3	11.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	70645	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	53	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	22.8	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	255	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	141	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....
Page 1 of 1

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TEST REPORT

Report No : MI19030001-01 Report Date : 16 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
 Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission
 Sample Description : 207-F2
 Sample No : MI19030001-01
 Sampling Location : Plant-207 OHCU
 Sample Condition : Fit for Analysis
 Sampling Procedure : GL/EN/SOP/111

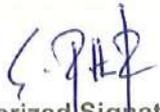
Sampling Date : 04 Mar 2019
 Sample Received on : 12 Mar 2019
 Test Started on : 12 Mar 2019
 Test Completed on : 15 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	523	K	-
2	Velocity	EPA Method 1-3	21.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	101675	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	87	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	12.2	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	8.2	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	188	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : MI19030001-02 Report Date : 16 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 212 F1

Sample No : MI19030001-02

Sampling Date : 04 Mar 2019

Sampling Location : Plant-212 ISOM

Sample Received on : 12 Mar 2019

Sample Condition : Fit for Analysis

Test Started on : 12 Mar 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 15 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	514	K	-
2	Velocity	EPA Method 1-3	4.6	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	24355	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	34	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	52.5	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	55	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	102	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI19030001-03 Report Date : 16 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 207-F1

Sample No : MI19030001-03

Sampling Date : 04 Mar 2019

Sampling Location : Plant-207 OHCU

Sample Received on : 12 Mar 2019

Sample Condition : Fit for Analysis

Test Started on : 12 Mar 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 15 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	512	K	-
2	Velocity	EPA Method 1-3	21.6	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	104830	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	99	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	14.8	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	5.5	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	110	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI19030001-04 Report Date : 16 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 204-F1

Sample No : MI19030001-04

Sampling Date : 04 Mar 2019

Sampling Location : Plant-204

Sample Received on : 12 Mar 2019

Sample Condition : Fit for Analysis

Test Started on : 12 Mar 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 15 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	553	K	-
2	Velocity	EPA Method 1-3	9.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	169936	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	55	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	32.8	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	186.7	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	73	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : MI19030001-05 Report Date : 16 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
 Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068
 Sample Name : Stack Emission
 Sample Description : 86F1
 Sample No : MI19030001-05 Sampling Date : 04 Mar 2019
 Sampling Location : 86-DCU Sample Received on : 12 Mar 2019
 Sample Condition : Fit for Analysis Test Started on : 12 Mar 2019
 Sampling Procedure : GL/EN/SOP/111 Test Completed on : 15 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	388	K	-
2	Velocity	EPA Method 1-3	19.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	377969	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	97	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	20.9	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	49.4	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	79	mg/Nm ³	Gas - 350 Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : MI19030001-07 Report Date : 16 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 10F101

Sample No : MI19030001-07

Sampling Date : 04 Mar 2019

Sampling Location : Plant-10

Sample Received on : 12 Mar 2019

Sample Condition : Fit for Analysis

Test Started on : 12 Mar 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 15 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	553	K	-
2	Velocity	EPA Method 1-3	9.2	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	19855	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	50	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	30.7	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	225	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	146	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : MI19030001-08 Report Date : 16 Mar 2019

SAMPLE DRAWN BY LABORATORY

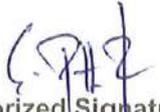
Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
 Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068
 Sample Name : Stack Emission
 Sample Description : 13F1
 Sample No : MI19030001-08 Sampling Date : 05 Mar 2019
 Sampling Location : Plant-13 Sample Received on : 12 Mar 2019
 Sample Condition : Fit for Analysis Test Started on : 12 Mar 2019
 Sampling Procedure : GL/EN/SOP/111 Test Completed on : 15 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	505	K	-
2	Velocity	EPA Method 1-3	10.3	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	9381	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	50	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	23.1	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	129	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	179	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

Page 1 of 1


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TEST REPORT

Report No : MI19030001-11 Report Date : 16 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
 Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068
 Sample Name : Stack Emission
 Sample Description : 9F301
 Sample No : MI19030001-11
 Sampling Location : Plant-9
 Sample Condition : Fit for Analysis
 Sampling Procedure : GL/EN/SOP/111

Sampling Date : 05 Mar 2019
 Sample Received on : 12 Mar 2019
 Test Started on : 12 Mar 2019
 Test Completed on : 15 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	530	K	-
2	Velocity	EPA Method 1-3	13.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	22259	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	56	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	21.7	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	102	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	111	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : MI19030001-12 Report Date : 16 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 73F101

Sample No : MI19030001-12

Sampling Date : 05 Mar 2019

Sampling Location : Plant-73

Sample Received on : 12 Mar 2019

Sample Condition : Fit for Analysis

Test Started on : 12 Mar 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 15 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	543	K	-
2	Velocity	EPA Method 1-3	12.7	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	51556	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	69	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	28.5	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	159	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	101	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : MI19030001-13 Report Date : 16 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
 Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068
 Sample Name : Stack Emission
 Sample Description : 73F102
 Sample No : MI19030001-13 Sampling Date : 05 Mar 2019
 Sampling Location : Plant-73 Sample Received on : 12 Mar 2019
 Sample Condition : Fit for Analysis Test Started on : 12 Mar 2019
 Sampling Procedure : GL/EN/SOP/111 Test Completed on : 15 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	562	K	-
2	Velocity	EPA Method 1-3	11.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	46949	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	52	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	15.2	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	181	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	119	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : MI19030001-14 Report Date : 16 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 14F101

Sample No : MI19030001-14

Sampling Date : 06 Mar 2019

Sampling Location : Plant-14 Hi Fi

Sample Received on : 12 Mar 2019

Sample Condition : Fit for Analysis

Test Started on : 12 Mar 2019

Sampling Procedure : GL/EN/SOP/111

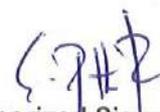
Test Completed on : 15 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	1013	K	-
2	Velocity	EPA Method 1-3	13.6	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	17339	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	33	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	25.4	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	110	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	73	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Authorized Signature
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TEST REPORT

Report No : MI19030001-17 Report Date : 16 Mar 2019

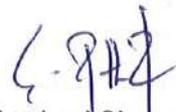
SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
 Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068
 Sample Name : Stack Emission
 Sample Description : 77F1
 Sample No : MI19030001-17 Sampling Date : 06 Mar 2019
 Sampling Location : Plant-77 Sample Received on : 12 Mar 2019
 Sample Condition : Fit for Analysis Test Started on : 12 Mar 2019
 Sampling Procedure : GL/EN/SOP/111 Test Completed on : 15 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	614	K	-
2	Velocity	EPA Method 1-3	7.7	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	23700	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	97	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	39.6	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	8	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	18	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....
Page 1 of 1


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TEST REPORT

Report No : MI19030001-18 Report Date : 16 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 78F1

Sample No : MI19030001-18

Sampling Date : 06 Mar 2019

Sampling Location : Plant-78 Tr-B

Sample Received on : 12 Mar 2019

Sample Condition : Fit for Analysis

Test Started on : 12 Mar 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 15 Mar 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	518	K	-
2	Velocity	EPA Method 1-3	9.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	3811	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	48	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	56.6	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	1252	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	33	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI19030001-24 Report Date : 16 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Ambient Air Quality
Sample Description : Ambient Air Quality Sampling Date & Time : 07 to 08 Mar 2019
Sample No : MI19030001-24 08:30 am to 08:30 am
Sample Location : CPCL R & D Top Sample Received on : 12 Mar 2019
Sample Condition : Fit for Analysis Test Started on : 12 Mar 2019
Relative Humidity : 60 % Test Completed on : 15 Mar 2019
Sampling Procedure : IS 5182 Part V & XIV Ambient Temperature : 33°C

Test Results

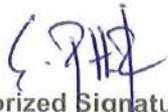
Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
1	Sulphur Dioxide as SO ₂	IS 5182 (Part 2):2001	14.3	µg/m ³	80
2	Nitrogen Dioxide as NO ₂	IS 5182 (Part 6):2006	17.8	µg/m ³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	53.4	µg/m ³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	23.6	µg/m ³	60
5	Ozone as O ₃	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m ³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m ³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m ³	4
8	Ammonia as NH ₃	GL/EN/SOP/057	BDL(DL:20)	µg/m ³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m ³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m ³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter.

Note : BDL: Below Detection Limit., DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

End of Report

Page 1 of 1


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TEST REPORT

Report No : MI19030001-25 Report Date : 16 Mar 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Ambient Air Quality
Sample Description : Ambient Air Quality Sampling Date & Time : 07 to 08 Mar 2019
Sample No : MI19030001-25 09:00 am to 09:00 am
Sample Location : CPCL CPP Sample Received on : 12 Mar 2019
Sample Condition : Fit for Analysis Test Started on : 12 Mar 2019
Relative Humidity : 60 % Test Completed on : 15 Mar 2019
Sampling Procedure : IS 5182 Part V & XIV Ambient Temperature : 33°C

Test Results

Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
1	Sulphur Dioxide as SO ₂	IS 5182 (Part 2):2001	16.3	µg/m ³	80
2	Nitrogen Dioxide as NO ₂	IS 5182 (Part 6):2006	19.2	µg/m ³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	45.3	µg/m ³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	17.2	µg/m ³	60
5	Ozone as O ₃	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m ³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m ³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m ³	4
8	Ammonia as NH ₃	GL/EN/SOP/057	BDL(DL:20)	µg/m ³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m ³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m ³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter.

Note : BDL: Below Detection Limit, DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

End of Report

Page 1 of 1


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TEST REPORT

Report No : EN19080028-03 Report Date : 06 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 1F 2

Sample No : EN19080028-03

Sampling Date : 26 Aug 2019

Sampling Location : Plant VAC

Sample Received on : 29 Aug 2019

Sample Condition : Fit for Analysis

Test Started on : 29 Aug 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 06 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	481	K	-
2	Velocity	EPA Method 1-3	9.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	23637	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	99	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	22.9	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	144.5	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	150	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : EN19080028-04 Report Date : 06 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 1F 3

Sample No : EN19080028-04 Sampling Date : 26 Aug 2019

Sampling Location : Plant VAC Sample Received on : 29 Aug 2019

Sample Condition : Fit for Analysis Test Started on : 29 Aug 2019

Sampling Procedure : GL/EN/SOP/111 Test Completed on : 06 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	455	K	-
2	Velocity	EPA Method 1-3	10.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	27646	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	63	mg/Nm ³	Gas -150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	39.3	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	150	mg/Nm ³	Gas -50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	74	mg/Nm ³	Gas - 350 Liquid -450

.....End of Report.....

Page 1 of 1

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TEST REPORT

Report No : EN19080028-05 Report Date : 06 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 15F1-A

Sample No : EN19080028-05 Sampling Date : 26 Aug 2019

Sampling Location : Plant 15 ATM Sample Received on : 29 Aug 2019

Sample Condition : Fit for Analysis Test Started on : 29 Aug 2019

Sampling Procedure : GL/EN/SOP/111 Test Completed on : 06 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	468	K	
2	Velocity	EPA Method 1-3	8.8	m/sec	
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	106765	Nm ³ /hr	
4	Carbon Monoxide as CO	GL/EN/SOP/149	15	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	28.8	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	129	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	95	mg/Nm ³	Gas - 350 Liquid - 450

.....End of Report.....
Page 1 of 1

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TEST REPORT

Report No : EN19080028-06 Report Date : 06 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 15F1B

Sample No : EN19080028-06

Sampling Date : 26 Aug 2019

Sampling Location : Plant 15 ATM

Sample Received on : 29 Aug 2019

Sample Condition : Fit for Analysis

Test Started on : 29 Aug 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 06 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	477	K	
2	Velocity	EPA Method 1-3	6.9	m/sec	
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	35113	Nm ³ /hr	
4	Carbon Monoxide as CO	GL/EN/SOP/149	73	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	20.9	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	131	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	105	mg/Nm ³	Gas - 350 Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : EN19080028-07 Report Date : 06 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 15F2 A

Sample No : EN19080028-07

Sampling Date : 27 Aug 2019

Sampling Location : Plant 15 ATM

Sample Received on : 29 Aug 2019

Sample Condition : Fit for Analysis

Test Started on : 29 Aug 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 06 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	597	K	
2	Velocity	EPA Method 1-3	9.9	m/sec	
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	29285	Nm ³ /hr	
4	Carbon Monoxide as CO	GL/EN/SOP/149	65	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	22.4	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	115	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	119	mg/Nm ³	Gas - 350 Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : EN19080028-08 Report Date : 06 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 15F2 B

Sample No : EN19080028-08 Sampling Date : 27 Aug 2019

Sampling Location : Plant 15 ATM Sample Received on : 29 Aug 2019

Sample Condition : Fit for Analysis Test Started on : 29 Aug 2019

Sampling Procedure : GL/EN/SOP/111 Test Completed on : 06 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	640	K	-
2	Velocity	EPA Method 1-3	8.9	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	24558	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	50	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	19.6	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	134	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	127	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19080028-09 Report Date : 06 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 16F1

Sample No : EN19080028-09

Sampling Date : 27 Aug 2019

Sampling Location : Plant 16

Sample Received on : 29 Aug 2019

Sample Condition : Fit for Analysis

Test Started on : 29 Aug 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 06 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	578	K	
2	Velocity	EPA Method 1-3	17.2	m/sec	
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	80982	Nm ³ /hr	
4	Carbon Monoxide as CO	GL/EN/SOP/149	26	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	10.5	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	14	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	63	mg/Nm ³	Gas - 350 Liquid - 450

.....End of Report.....
Page 1 of 1


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TEST REPORT

Report No : EN19080028-10 Report Date : 06 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 206 F-02

Sample No : EN19080028-10 Sampling Date : 27 Aug 2019

Sampling Location : Plant 206 NHT Sample Received on : 29 Aug 2019

Sample Condition : Fit for Analysis Test Started on : 29 Aug 2019

Sampling Procedure : GL/EN/SOP/111 Test Completed on : 06 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	567	K	-
2	Velocity	EPA Method 1-3	22.6	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	108471	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	62	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	18.7	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	36	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	79	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19080028-11 Report Date : 06 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Boiler 1

Sample Description : EN19080028-11

Sample No : NCCP Boiler 1

Sampling Date : 27 Aug 2019

Sampling Location : Fit for Analysis

Sample Received on : 29 Aug 2019

Sample Condition : GL/EN/SOP/111

Test Started on : 29 Aug 2019

Sampling Procedure : Boiler 1

Test Completed on : 06 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	428	K	
2	Velocity	EPA Method 1-3,	18.4	m/sec	
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	116994	Nm ³ /hr	
4	Carbon Monoxide as CO	GL/EN/SOP/149	52	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	42.7	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	393	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	164	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19080028-13 Report Date : 06 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : Boiler 3

Sample No : EN19080028-13 Sampling Date : 28 Aug 2019

Sampling Location : NCCP Boiler -III Sample Received on : 29 Aug 2019

Sample Condition : Fit for Analysis Test Started on : 29 Aug 2019

Sampling Procedure : GL/EN/SOP/111 Test Completed on : 06 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part-3):2008	462	K	
2	Velocity	EPA Method 1-3	18.9	m/sec	
3	Volume of Gas Discharge	IS 11255 (Part-3):2008	111329	Nm ³ /hr	
4	Carbon Monoxide as CO	GL/EN/SOP/149	63	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	62.4	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	639	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	175	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19080028-14 Report Date : 06 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : Boiler 4

Sample No : EN19080028-14 Sampling Date : 28 Aug 2019

Sampling Location : NCCP Boiler -IV Sample Received on : 29 Aug 2019

Sample Condition : Fit for Analysis Test Started on : 29 Aug 2019

Sampling Procedure : GL/EN/SOP/111 Test Completed on : 06 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	477	K	
2	Velocity	EPA Method 1-3	19.6	m/sec	
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	111822	Nm ³ /hr	
4	Carbon Monoxide as CO	GL/EN/SOP/149	55	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	30	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	613	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	119	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19080028-15 Report Date : 06 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 201F01/F02

Sample No : EN19080028-15 Sampling Date : 28 Aug 2019

Sampling Location : Plant 201 VAC Sample Received on : 29 Aug 2019

Sample Condition : Fit for Analysis Test Started on : 29 Aug 2019

Sampling Procedure : GL/EN/SOP/111 Test Completed on : 06 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part-3):2008	451	K	
2	Velocity	EPA Method 1-3	4.7	m/sec	
3	Volume of Gas Discharge	IS 11255 (Part-3):2008	104185	Nm ³ /hr	
4	Carbon Monoxide as CO	GL/EN/SOP/149	62	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	39.3	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	334	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	286	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19080028-16 Report Date : 06 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 205F-01

Sample No : EN19080028-16 Sampling Date : 28 Aug 2019

Sampling Location : Plant 205 HGU PDS Sample Received on : 29 Aug 2019

Sample Condition : Fit for Analysis Test Started on : 29 Aug 2019

Sampling Procedure : GL/EN/SOP/111 Test Completed on : 06 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part-3):2008	456	K	-
2	Velocity	EPA Method 1-3	19.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part-3):2008	113803	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	120	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	G2L/EN/SOP/113	8.4	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	41	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	5	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19080028-18 Report Date : 06 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 206F-01

Sample No : EN19080028-18 Sampling Date : 29 Aug 2019

Sampling Location : Plant 206 NHT Sample Received on : 29 Aug 2019

Sample Condition : Fit for Analysis Test Started on : 30 Aug 2019

Sampling Procedure : GL/EN/SOP/111 Test Completed on : 06 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per EPCB Standard
1	Stack Temperature	IS 11255 (Part-3):2008	529	K	
2	Velocity	EPA Method 1-3	18.5	m/sec	
3	Volume of Gas Discharge	IS 11255 (Part-3):2008	95171	Nm ³ /hr	
4	Carbon Monoxide as CO	GL/EN/SOP/149	66	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	8.5	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	19	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	74	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19080028-19 Report Date : 06 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 206 F3- F6

Sample No : EN19080028-19 Sampling Date : 29 Aug 2019

Sampling Location : Plant 206 CCR Sample Received on : 29 Aug 2019

Sample Condition : Fit for Analysis Test Started on : 30 Aug 2019

Sampling Procedure : GL/EN/SOP/111 Test Completed on : 06 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	521	K	
2	Velocity	EPA Method 1-3	9.6	m/sec	
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	50144	Nm ³ /hr	
4	Carbon Monoxide as CO	GL/EN/SOP/149	20	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	45.9	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	65	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	85	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19080028-20 Report Date : 06 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 210 F- 01

Sample No. : EN19080028-20 Sampling Date : 29 Aug 2019

Sampling Location : Plant 210 TR A Sample Received on : 29 Aug 2019

Sample Condition : Fit for Analysis Test Started on : 30 Aug 2019

Sampling Procedure : GL/EN/SOP/111 Test Completed on : 06 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part-3):2008	833	K	
2	Velocity	EPA Method 1-3	20.1	m/sec	
3	Volume of Gas Discharge	IS 11255 (Part-3):2008	77859	Nm ³ /hr	
4	Carbon Monoxide as CO	GL/EN/SOP/149	56	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	14.3	mg/Nm ³	
6	Sulphur Dioxide as SO ₂	EPA Method 6	441	mg/Nm ³	
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	83	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19080028-21 Report Date : 06 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 211F-01

Sample No : EN19080028-21 Sampling Date : 29 Aug 2019

Sampling Location : Plant 211 DHDT Sample Received on : 29 Aug 2019

Sample Condition : Fit for Analysis Test Started on : 30 Aug 2019

Sampling Procedure : GL/EN/SOP/111 Test Completed on : 06 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part-3):2008	440	K	
2	Velocity	EPA Method 1-3	10.9	m/sec	
3	Volume of Gas Discharge	IS 11255 (Part-3):2008	67416	Nm ³ /hr	
4	Carbon Monoxide as CO	GL/EN/SOP/149	62	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	41.1	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	186	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	158	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : EN19080028-22 Report Date : 06 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 214F-01

Sample No : EN19080028-22 Sampling Date : 29 Aug 2019

Sampling Location : Plant 214 HGU Sample Received on : 29 Aug 2019

Sample Condition : Fit for Analysis Test Started on : 30 Aug 2019

Sampling Procedure : GL/EN/SOP/111 Test Completed on : 06 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	452	K	
2	Velocity	EPA Method 1-3	11.7	m/sec	
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	70443	Nm ³ /hr	
4	Carbon Monoxide as CO	GL/EN/SOP/149	50	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	24.5	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	216	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	125	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : MI19090007-01 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission
Sample Description : 207-F2
Sample No : MI19090007-01
Sampling Location : Plant-207 OHCU
Sample Condition : Fit for Analysis
Sampling Procedure : GL/EN/SOP/111

Sampling Date : 09 Sep 2019
Sample Received on : 16 Sep 2019
Test Started on : 16 Sep 2019
Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	533	K	-
2	Velocity	EPA Method 1-3	21.9	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	102098	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	88	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	9.3	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	11.0	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	329	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : MI19090007-02 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 212 F1

Sample No : MI19090007-02

Sampling Date : 09 Sep 2019

Sampling Location : Plant-212 ISOM

Sample Received on : 16 Sep 2019

Sample Condition : Fit for Analysis

Test Started on : 16 Sep 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	503	K	-
2	Velocity	EPA Method 1-3	4.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	24346	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	22	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	59.3	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	55	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	75	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : MI19090007-04 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 204-F1

Sample No : MI19090007-04

Sampling Date : 09 Sep 2019

Sampling Location : Plant-204

Sample Received on : 16 Sep 2019

Sample Condition : Fit for Analysis

Test Started on : 16 Sep 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	543	K	-
2	Velocity	EPA Method 1-3	9.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	173065	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	52	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	30.4	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	183.9	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	79	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : MI19090007-05 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 86F1

Sample No : MI19090007-05

Sampling Date : 09 Sep 2019

Sampling Location : 86-DCU

Sample Received on : 16 Sep 2019

Sample Condition : Fit for Analysis

Test Started on : 16 Sep 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	398	K	-
2	Velocity	EPA Method 1-3	19.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	370372	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	97	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	19.9	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	65.9	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	82	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI19090007-06 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 4F1

Sample No : MI19090007-06

Sampling Date : 09 Sep 2019

Sampling Location : Plant-4

Sample Received on : 16 Sep 2019

Sample Condition : Fit for Analysis

Test Started on : 16 Sep 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	471	K	-
2	Velocity	EPA Method 1-3	10.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	25388	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	69	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	39.5	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	156	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	91	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : MI19090007-07 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 10F101

Sample No : MI19090007-07

Sampling Date : 09 Sep 2019

Sampling Location : Plant-10

Sample Received on : 16 Sep 2019

Sample Condition : Fit for Analysis

Test Started on : 16 Sep 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	553	K	-
2	Velocity	EPA Method 1-3	9.2	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	19855	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	80	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	41.3	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	228	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	155	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI19090007-09 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 14F1

Sample No : MI19090007-09

Sampling Date : 10 Sep 2019

Sampling Location : Plant-14 DOU

Sample Received on : 16 Sep 2019

Sample Condition : Fit for Analysis

Test Started on : 16 Sep 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	1013	K	-
2	Velocity	EPA Method 1-3	12.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	15936	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	48	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	26.4	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	107.1	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	102	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI19090007-10 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 9F201

Sample No : MI19090007-10

Sampling Date : 10 Sep 2019

Sampling Location : Plant-9

Sample Received on : 16 Sep 2019

Sample Condition : Fit for Analysis

Test Started on : 16 Sep 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	544	K	-
2	Velocity	EPA Method 1-3	12.8	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	43289	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	69	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	23.6	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	101.6	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	101	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI19090007-12 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 73F101

Sample No : MI19090007-12

Sampling Date : 10 Sep 2019

Sampling Location : Plant-73

Sample Received on : 16 Sep 2019

Sample Condition : Fit for Analysis

Test Started on : 16 Sep 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	547	K	-
2	Velocity	EPA Method 1-3	12.7	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	51179	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	77	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	23.3	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	222	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	102	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI19090007-13 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 73F102

Sample No : MI19090007-13

Sampling Date : 10 Sep 2019

Sampling Location : Plant-73

Sample Received on : 16 Sep 2019

Sample Condition : Fit for Analysis

Test Started on : 16 Sep 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	548	K	-
2	Velocity	EPA Method 1-3	11.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	48571	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	50	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	21.3	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	173	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	124	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI19090007-14 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 14F101

Sample No : MI19090007-14

Sampling Date : 10 Sep 2019

Sampling Location : Plant-14 Hi Fi

Sample Received on : 16 Sep 2019

Sample Condition : Fit for Analysis

Test Started on : 16 Sep 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	1026	K	-
2	Velocity	EPA Method 1-3	13.8	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	17371	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	76	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	32	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	113	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	122	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : MI19090007-15 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 71F1

Sample No : MI19090007-15

Sampling Date : 11 Sep 2019

Sampling Location : Plant-71

Sample Received on : 16 Sep 2019

Sample Condition : Fit for Analysis

Test Started on : 16 Sep 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	796	K	-
2	Velocity	EPA Method 1-3	13.1	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	43797	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	75	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	19.1	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	110	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	102	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : MI19090007-16 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 76F1

Sample No : MI19090007-16

Sampling Date : 11 Sep 2019

Sampling Location : Plant-76 H2

Sample Received on : 16 Sep 2019

Sample Condition : Fit for Analysis

Test Started on : 16 Sep 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	449	K	-
2	Velocity	EPA Method 1-3	20.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	86285	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	71	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	28.3	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	508	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	33	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : M119090007-17 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 77F1

Sample No : M119090007-17

Sampling Location : Plant-77

Sample Condition : Fit for Analysis

Sampling Procedure : GL/EN/SOP/111

Sampling Date : 11 Sep 2019

Sample Received on : 16 Sep 2019

Test Started on : 16 Sep 2019

Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	618	K	-
2	Velocity	EPA Method 1-3	7.7	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	23547	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	126	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	35.2	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	11	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	26	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : MI19090007-18 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 78F1

Sample No : MI19090007-18

Sampling Date : 11 Sep 2019

Sampling Location : Plant-78 Tr-B

Sample Received on : 16 Sep 2019

Sample Condition : Fit for Analysis

Test Started on : 16 Sep 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	518	K	-
2	Velocity	EPA Method 1-3	9.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	3811	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	48	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	54.9	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	1277	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	18	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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Authorized Signature

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TEST REPORT

Report No : MI19090007-19 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : GT1

Sample No : MI19090007-19

Sampling Date : 11 Sep 2019

Sampling Location : HRSG-I

Sample Received on : 16 Sep 2019

Sample Condition : Fit for Analysis

Test Started on : 16 Sep 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	740	K	-
2	Velocity	EPA Method 1-3	13	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	47808	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	62	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	8.4	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	49	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	102	mg/Nm ³	Gas - 350 Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : MI19090007-20 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : GT2

Sample No : MI19090007-20

Sampling Date : 12 Sep 2019

Sampling Location : HRSG-2

Sample Received on : 16 Sep 2019

Sample Condition : Fit for Analysis

Test Started on : 16 Sep 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	460	K	-
2	Velocity	EPA Method 1-3	10.2	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	70820	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	31	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	30.8	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	30	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	102	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : MI19090007-21 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : GT3

Sample No : MI19090007-21

Sampling Date : 12 Sep 2019

Sampling Location : HRSG-3

Sample Received on : 16 Sep 2019

Sample Condition : Fit for Analysis

Test Started on : 16 Sep 2019

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	746	K	-
2	Velocity	EPA Method 1-3	12	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	43776	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	53	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	10.8	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	30	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	128	mg/Nm ³	Gas - 350 Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : MI19090007-22 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : GT4

Sample No : MI19090007-22

Sampling Location : HRSG-4

Sample Condition : Fit for Analysis

Sampling Procedure : GL/EN/SOP/111

Sampling Date : 12 Sep 2019

Sample Received on : 16 Sep 2019

Test Started on : 16 Sep 2019

Test Completed on : 20 Sep 2019

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	753	K	-
2	Velocity	EPA Method 1-3	13.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	48790	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	50	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	24.1	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	110	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	122	mg/Nm ³	Gas - 350 Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : MI19090007-24 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Ambient Air Quality

Sample Description : Ambient Air Quality

Sample No : MI19090007-24

Sample Location : CPCL R & D Top

Sample Condition : Fit for Analysis

Relative Humidity : 60 %

Sampling Procedure : IS 5182 Part V & XIV

Sampling Date & Time : 12 to 13 Sep 2019
08:30 am to 08:30 am

Sample Received on : 16 Sep 2019

Test Started on : 16 Sep 2019

Test Completed on : 20 Sep 2019

Ambient Temperature : 33°C

Test Results

Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
1	Sulphur Dioxide as SO ₂	IS 5182 (Part 2):2001	18.1	µg/m ³	80
2	Nitrogen Dioxide as NO ₂	IS 5182 (Part 6):2006	21.4	µg/m ³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	62.6	µg/m ³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	28.1	µg/m ³	60
5	Ozone as O ₃	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m ³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m ³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m ³	4
8	Ammonia as NH ₃	GL/EN/SOP/057	BDL(DL:20)	µg/m ³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m ³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m ³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter.

Note : BDL: Below Detection Limit, DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

End of Report

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ORIGINAL 174

TEST REPORT

Report No : MI19090007-25 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Ambient Air Quality

Sample Description : Ambient Air Quality

Sample No : MI19090007-25

Sample Location : CPCL CPP

Sample Condition : Fit for Analysis

Relative Humidity : 60 %

Sampling Procedure : IS 5182 Part V & XIV

Sampling Date & Time : 12 to 13 Sep 2019
09:00 am to 09:00 am

Sample Received on : 16 Sep 2019

Test Started on : 16 Sep 2019

Test Completed on : 20 Sep 2019

Ambient Temperature : 33°C

Test Results

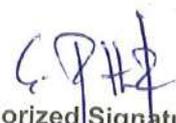
Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
1	Sulphur Dioxide as SO ₂	IS 5182 (Part 2):2001	13.5	µg/m ³	80
2	Nitrogen Dioxide as NO ₂	IS 5182 (Part 6):2006	17.9	µg/m ³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	53.1	µg/m ³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	22.1	µg/m ³	60
5	Ozone as O ₃	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m ³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m ³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m ³	4
8	Ammonia as NH ₃	GL/EN/SOP/057	BDL(DL:20)	µg/m ³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m ³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m ³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter.

Note : BDL: Below Detection Limit, DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

End of Report

Page 1 of 1


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TEST REPORT

Report No : MI19090007-26 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Ambient Air Quality

Sample Description : Ambient Air Quality

Sample No : MI19090007-26

Sample Location : CPCL SS-5

Sample Condition : Fit for Analysis

Relative Humidity : 60 %

Sampling Procedure : IS 5182 Part V & XIV

Sampling Date & Time : 12 to 13 Sep 2019
09:30 am to 09:30 am

Sample Received on : 16 Sep 2019

Test Started on : 16 Sep 2019

Test Completed on : 20 Sep 2019

Ambient Temperature : 33°C

Test Results

Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
1	Sulphur Dioxide as SO ₂	IS 5182 (Part 2):2001	10.7	µg/m ³	80
2	Nitrogen Dioxide as NO ₂	IS 5182 (Part 6):2006	15.1	µg/m ³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	49.7	µg/m ³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	20.1	µg/m ³	60
5	Ozone as O ₃	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m ³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m ³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m ³	4
8	Ammonia as NH ₃	GL/EN/SOP/057	BDL(DL:20)	µg/m ³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m ³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m ³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter.

Note : BDL: Below Detection Limit, DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

End of Report

Page 1 of 1

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TEST REPORT

Report No : MI19090007-27 Report Date : 20 Sep 2019

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Ambient Air Quality

Sample Description : Ambient Air Quality

Sample No : MI19090007-27

Sample Location : CPCL Temple

Sample Condition : Fit for Analysis

Relative Humidity : 60 %

Sampling Procedure : IS 5182 Part V & XIV

Sampling Date & Time : 12 to 13 Sep 2019

10:00 am to 10:00 am

Sample Received on : 16 Sep 2019

Test Started on : 16 Sep 2019

Test Completed on : 20 Sep 2019

Ambient Temperature : 33°C

Test Results

Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
1	Sulphur Dioxide as SO ₂	IS 5182 (Part 2):2001	16.7	µg/m ³	80
2	Nitrogen Dioxide as NO ₂	IS 5182 (Part 6):2006	19.5	µg/m ³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	55.3	µg/m ³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	24.6	µg/m ³	60
5	Ozone as O ₃	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m ³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m ³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m ³	4
8	Ammonia as NH ₃	GL/EN/SOP/057	BDL(DL:20)	µg/m ³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m ³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m ³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter.

Note : BDL: Below Detection Limit, DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

End of Report

Page 1 of 1

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TEST REPORT

Report No : MI20030012-01 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 1F1A

Sample No : MI20030012-01

Sampling Date : 02 Mar 2020

Sampling Location : Plant ATM

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 13 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	542	K	-
2	Velocity	EPA Method 1-3	8.7	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	91140	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	78	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	20.9	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	131.8	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	108	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI20030012-02 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 1F1 B

Sample No : MI20030012-02

Sampling Date : 02 Mar 2020

Sampling Location : Plant ATM

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 13 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	483	K	-
2	Velocity	EPA Method 1-3	8.1	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	30025	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	65	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	12.3	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	134.5	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	122	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : MI20030012-03 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 1F 2

Sample No : MI20030012-03

Sampling Date : 02 Mar 2020

Sampling Location : Plant VAC

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 13 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	483	K	-
2	Velocity	EPA Method 1-3	9	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	22537	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	87	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	22.4	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	137.3	mg/Nm ³	Gas - 50
					Liquid - 1700


 Authorized Signature
 E. Prithvirajan
 Manager - Lab

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TEST REPORT

Report No : MI20030012-05 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 15F1-A

Sample No : MI20030012-05

Sampling Date : 02 Mar 2020

Sampling Location : Plant 15 ATM

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

Sampling Procedure : GL/EN/SOP/111

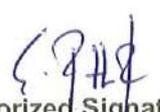
Test Completed on : 13 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	483	K	-
2	Velocity	EPA Method 1-3	8.6	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	101098	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	50	mg/Nm ³	Gas -150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	33.1	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	129	mg/Nm ³	Gas -50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	102	mg/Nm ³	Gas - 350
					Liquid -450

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TEST REPORT

Report No : MI20030012-06 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 15F1B

Sample No : MI20030012-06

Sampling Date : 03 Mar 2020

Sampling Location : Plant 15 ATM

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 13 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	483	K	-
2	Velocity	EPA Method 1-3	7.9	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	39703	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	62	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	23	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	159	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	108	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI20030012-07 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 15F2A

Sample No : MI20030012-07

Sampling Date : 03 Mar 2020

Sampling Location : Plant 15 VAC

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 13 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	594	K	-
2	Velocity	EPA Method 1-3	9.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	28243	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	62	mg/m ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	23.5	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	151	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	122	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI20030012-08 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 15F2B

Sample No : MI20030012-08

Sampling Date : 03 Mar 2020

Sampling Location : Plant 15 VAC

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 13 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	640	K	-
2	Velocity	EPA Method 1-3	8.6	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	23730	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	69	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	20.1	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	184	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	144	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI20030012-09 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 16F1

Sample No : MI20030012-09

Sampling Date : 03 Mar 2020

Sampling Location : Plant 16

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 13 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	583	K	-
2	Velocity	EPA Method 1-3	16.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	77020	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	31	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	12.7	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	8	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	62	mg/Nm ³	Gas - 350
					Liquid - 450

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 Manager - Lab

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TEST REPORT

Report No : MI20030012-10 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 206F-02

Sample No : MI20030012-10

Sampling Date : 03 Mar 2020

Sampling Location : Plant 206 NHT

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 13 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	567	K	-
2	Velocity	EPA Method 1-3	22.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	107991	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	66	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	20.2	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	36	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	86	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI20030012-11 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : Boiler 1

Sample No : MI20030012-11

Sampling Date : 04 Mar 2020

Sampling Location : NCCP Boiler 1

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

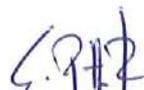
Sampling Procedure : GL/EN/SOP/111

Test Completed on : 13 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	430	K	-
2	Velocity	EPA Method 1-3	19.1	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	120880	Nm ³ /hr	-
5	Carbon Monoxide as CO	GL/EN/SOP/149	62	mg/Nm ³	Gas - 150
					Liquid - 200
7	Particulate Matter	GL/EN/SOP/113	46	mg/Nm ³	Gas - 10
					Liquid - 100
8	Sulphur Dioxide as SO ₂	EPA Method 6	398	mg/Nm ³	Gas - 50
					Liquid - 1700
9	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	179	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....
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Manager - Lab

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TEST REPORT

Report No : MI20030012-13 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : Boiler 3

Sample No : MI20030012-13

Sampling Date : 04 Mar 2020

Sampling Location : NCCP Boiler -III

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 13 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	462	K	-
2	Velocity	EPA Method 1-3	19.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	114274	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	62	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	58.4	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	640	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	179	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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E. Prithvirajan
Manager - Lab

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TEST REPORT

Report No : MI20030012-14 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : Boiler 4

Sample No : MI20030012-14

Sampling Date : 04 Mar 2020

Sampling Location : NCCP Boiler -IV

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 13 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	492	K	-
2	Velocity	EPA Method 1-3	19.8	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	109519	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	62	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	32.8	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	615	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	163	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

Page 1 of 1

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TEST REPORT

Report No : MI20030012-15 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 201F01/F02

Sample No : MI20030012-15

Sampling Date : 04 Mar 2020

Sampling Location : Plant 201 VAC

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 13 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	462	K	-
2	Velocity	EPA Method 1-3	3.6	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	77901	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	75	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	28.6	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	404	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	285	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

Page 1 of 1

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TEST REPORT

Report No : MI20030012-16 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 205F-01

Sample No : MI20030012-16

Sampling Date : 05 Mar 2020

Sampling Location : Plant 205 HGU PDS

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 13 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	486	K	-
2	Velocity	EPA Method 1-3	19.7	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	107873	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	140	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	8.3	mg/Nm ³	Gas -10
					Liquid -100
6	Sulphur Dioxide as SO ₂	EPA Method 6	40.2	mg/Nm ³	Gas - 50
					Liquid -1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	44	mg/Nm ³	Gas -350
					Liquid -450

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TEST REPORT

Report No : MI20030012-19 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 206 F3-F6

Sample No : MI20030012-19

Sampling Date : 05 Mar 2020

Sampling Location : Plant 206 CCR

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 13 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	540	K	-
2	Velocity	EPA Method 1-3	9.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	47372	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	19	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	51.7	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	74	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	64	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : MI20030012-20 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 210F-01

Sample No : MI20030012-20

Sampling Date : 05 Mar 2020

Sampling Location : Plant 210 TR-A

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 13 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	818	K	-
2	Velocity	EPA Method 1-3	19.3	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	76131	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	75	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	16.6	mg/Nm ³	-
6	Sulphur Dioxide as SO ₂	EPA Method 6	469	mg/Nm ³	-
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	84	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI20030012-21 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 211F-01

Sample No : MI20030012-21

Sampling Date : 06 Mar 2020

Sampling Location : Plant 211 DHDT

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

Sampling Procedure : GL/EN/SOP/111

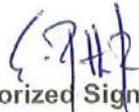
Test Completed on : 13 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	441	K	-
2	Velocity	EPA Method 1-3	10.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	64178	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	47	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	44.1	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	272	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	139	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI20030012-22 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 214F-01

Sample No : MI20030012-22

Sampling Date : 06 Mar 2020

Sampling Location : Plant 214 HGU

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 13 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	458	K	-
2	Velocity	EPA Method 1-3	11.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	68332	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	75	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	21.9	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	206	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	143	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI20030012-24 Report Date : 20 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission
Sample Description : 212 F1
Sample No : MI20030012-24 Sampling Date : 09 Mar 2020
Sampling Location : Plant-212 ISOM Sample Received on : 16 Mar 2020
Sample Condition : Fit for Analysis Test Started on : 16 Mar 2020
Sampling Procedure : GL/EN/SOP/111 Test Completed on : 20 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	513	K	-
2	Velocity	EPA Method 1-3	4.9	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	25994	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	42	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	59.1	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	77	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	101	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : MI20030012-27 Report Date : 20 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 86F1

Sample No : MI20030012-27

Sampling Date : 09 Mar 2020

Sampling Location : 86-DCU

Sample Received on : 16 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 16 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	401	K	-
2	Velocity	EPA Method 1-3	19.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	367601	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	92	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	18.4	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	43.9	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	88	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI20030012-30 Report Date : 20 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 13F1

Sample No : MI20030012-30

Sampling Date : 10 Mar 2020

Sampling Location : Plant-13

Sample Received on : 16 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 16 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	507	K	-
2	Velocity	EPA Method 1-3	10.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	9435	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	50	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	22.2	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	124	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	208	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI20030012-31 Report Date : 20 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
 Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068
 Sample Name : Stack Emission
 Sample Description : 14F1
 Sample No : MI20030012-31 Sampling Date : 10 Mar 2020
 Sampling Location : Plant-14 DOU Sample Received on : 16 Mar 2020
 Sample Condition : Fit for Analysis Test Started on : 16 Mar 2020
 Sampling Procedure : GL/EN/SOP/111 Test Completed on : 20 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	1012	K	-
2	Velocity	EPA Method 1-3	12.4	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	15824	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	53	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	20.8	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	82.4	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	101	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI20030012-33 Report Date : 20 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 9F301

Sample No : MI20030012-33

Sampling Date : 11 Mar 2020

Sampling Location : Plant-9

Sample Received on : 16 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 16 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	531	K	-
2	Velocity	EPA Method 1-3	13.6	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	22381	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	62	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	24.6	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	80	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	122	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI20030012-36 Report Date : 20 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 14F101

Sample No : MI20030012-36

Sampling Date : 11 Mar 2020

Sampling Location : Plant-14 Hi Fi

Sample Received on : 16 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 16 Mar 2020

Sampling Procedure : GL/EN/SOP/111

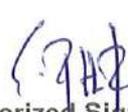
Test Completed on : 20 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	1003	K	-
2	Velocity	EPA Method 1-3	13.2	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	16997	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	53	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	36.7	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	146	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	104	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI20030012-38 Report Date : 20 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 76F11

Sample No : MI20030012-38

Sampling Date : 12 Mar 2020

Sampling Location : Plant-76 H2

Sample Received on : 16 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 16 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	449	K	-
2	Velocity	EPA Method 1-3	20.6	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	86706	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	75	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	34.9	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	502	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	38	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI20030012-39 Report Date : 20 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : 77F1

Sample No : MI20030012-39

Sampling Date : 12 Mar 2020

Sampling Location : Plant-77

Sample Received on : 16 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 16 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	618	K	-
2	Velocity	EPA Method 1-3	7.7	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	23547	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	116	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	35.8	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	14	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	26	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI20030012-41 Report Date : 20 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : GT1

Sample No : MI20030012-41

Sampling Date : 12 Mar 2020

Sampling Location : HRSG-I

Sample Received on : 16 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 16 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	687	K	-
2	Velocity	EPA Method 1-3	13.7	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	54269	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	99	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	7.8	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	36	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	137	mg/Nm ³	Gas - 350
					Liquid - 450

.....End of Report.....

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TEST REPORT

Report No : MI20030012-42 Report Date : 20 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : GT2

Sample No : MI20030012-42

Sampling Date : 12 Mar 2020

Sampling Location : HRSG-2

Sample Received on : 16 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 16 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	446	K	-
2	Velocity	EPA Method 1-3	10.8	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	77340	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	75	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	30.3	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	44	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	93	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI20030012-43 Report Date : 20 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : GT3

Sample No : MI20030012-43

Sampling Date : 13 Mar 2020

Sampling Location : HRSG-3

Sample Received on : 16 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 16 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	729	K	-
2	Velocity	EPA Method 1-3	12.6	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	47036	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	50	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	11.2	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	36	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	122	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI20030012-44 Report Date : 20 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery
Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission
Sample Description : GT4
Sample No : MI20030012-44 Sampling Date : 13 Mar 2020
Sampling Location : HRSG-4 Sample Received on : 16 Mar 2020
Sample Condition : Fit for Analysis Test Started on : 16 Mar 2020
Sampling Procedure : GL/EN/SOP/111 Test Completed on : 20 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	760	K	-
2	Velocity	EPA Method 1-3	13.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	48340	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	65	mg/Nm ³	Gas - 150
					Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	23.3	mg/Nm ³	Gas - 10
					Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	115	mg/Nm ³	Gas - 50
					Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	144	mg/Nm ³	Gas - 350
					Liquid - 450

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TEST REPORT

Report No : MI20030012-45 Report Date : 20 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Stack Emission

Sample Description : Boiler 5

Sample No : MI20030012-45

Sampling Date : 13 Mar 2020

Sampling Location : OPH-Boiler V

Sample Received on : 16 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 16 Mar 2020

Sampling Procedure : GL/EN/SOP/111

Test Completed on : 20 Mar 2020

Test result

S.No	Test Name	Test Method	Results	Units	Limit as per CPCB Standard
1	Stack Temperature	IS 11255 (Part -3):2008	609	K	-
2	Velocity	EPA Method 1-3	17.5	m/sec	-
3	Volume of Gas Discharge	IS 11255 (Part -3):2008	217224	Nm ³ /hr	-
4	Carbon Monoxide as CO	GL/EN/SOP/149	51	mg/Nm ³	Gas - 150 Liquid - 200
5	Particulate Matter	GL/EN/SOP/113	22.2	mg/Nm ³	Gas - 10 Liquid - 100
6	Sulphur Dioxide as SO ₂	EPA Method 6	71	mg/Nm ³	Gas - 50 Liquid - 1700
7	Oxides of Nitrogen as NO ₂	GL/EN/SOP/149	175	mg/Nm ³	Gas - 350 Liquid - 450

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TEST REPORT

Report No : MI20030012-50 Report Date : 13 Mar 2020

SAMPLE DRAWN BY LABORATORY

Customer Name : M/S. Chennai Petroleum Corporation Limited- Refinery

Customer Address : Manali Express Highway, Manali, Chennai, Tamil Nadu 600068

Sample Name : Ambient Air Quality

Sample Description : Ambient Air Quality

Sampling Date & Time : 10 to 11 Dec 2018

Sample No : MI20030012-50

10:30 am to 10:30 am

Sample Location : CPCL TTP

Sample Received on : 09 Mar 2020

Sample Condition : Fit for Analysis

Test Started on : 09 Mar 2020

Relative Humidity : 60 %

Test Completed on : 13 Mar 2020

Sampling Procedure : IS 5182 Part V & XIV

Ambient Temperature : 33°C

Test Results

Sl.No	Test Name	Test Method	Results	Units	Requirement as per NAAQS Specification
1	Sulphur Dioxide as SO ₂	IS 5182 (Part 2):2001	18.2	µg/m ³	80
2	Nitrogen Dioxide as NO ₂	IS 5182 (Part 6):2006	23.4	µg/m ³	80
3	Particulate Matter (PM 10)	IS 5182 (Part 23):2006	56.7	µg/m ³	100
4	Particulate Matter (PM 2.5)	GL/EN/SOP/062	19.2	µg/m ³	60
5	Ozone as O ₃	IS 5182 (Part 9):1974	BDL(DL:20)	µg/m ³	100
6	Lead as Pb	IS 5182 (Part 22):2004	BLQ(LOQ:0.002)	µg/m ³	1
7	Carbon Monoxide as CO (1 hour)	IS 5182 (Part 10):1999	BDL(DL:1.14)	mg/m ³	4
8	Ammonia as NH ₃	GL/EN/SOP/057	BDL(DL:20)	µg/m ³	400
9	Benzene	GL/EN/SOP/08	BLQ(LOQ:4.0)	µg/m ³	-
10	Benzo (a)Pyrene (Particulate Phase)	GL/EN-INS/SOP/09	BLQ(LOQ:0.03)	ng/m ³	-
11	Arsenic as As	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-
12	Nickel as Ni	IS 5182 (Part 22):2004	BLQ(LOQ:2.0)	ng/m ³	-

Remarks : The above Sample complies as per NAAQS limit which is provided in the environmental protection Rule 3 (3B) Nov.2009, against the above tested parameter.

Note : BDL: Below Detection Limit., DL: Detection Limit / NAAQS: National Ambient Air Quality Standard

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