HMEL®

Date: 25th November, 2022
Ref: HMEL-TS-40-ENV 976

To,
The Director,
Ministry of Environment, Forest & Climate Change,
Northern Regional Office,
Bays No. 24-25, Sector 31-A,
Dakshin Marg,
Chandigarh – 160 030.

Subject: Six Monthly EC Compliance Report (from Apr'2022 to Sep'2022) for Guru Gobind Singh Refinery at Phullokhari, Bathinda District, Punjab.

Ref: Environmental Clearance No. J-11011/24/98-IA II (dated 6th November, 1998
Environmental Clearance No. J-11011/27512007-IA II (I) date 16th July 2007
Environmental Clearance: F. No.: J-11011/275/2007 IA II (I) date 22nd June 2015 and
Environmental Clearance: F. No. J-11011/386/2016-IA-II (I) dated 7th August 2018

Dear Sir,

Please find enclosed six monthly EC compliance report (from Apr'2022 to Sep'2022) of Guru Gobind Singh Refinery (along with Annexures) on the environmental conditions stipulated by MoEF&CC.

Thanking you,

Very Truly Yours,

Jatinder Kumar
(DM-Technical Services)

Cc: *Regional Director, Central Pollution Control Board, First Floor, PIC-UP Building, Vibuti Khand, Gomtinagar, Lucknow, UP, Pin Code-226010 (India).*

Cc: *Punjab Pollution Control Board, Zonal Office, Street No. 12, Power House Road, Bathinda, Punjab.* 01.12.22

Enclosure: Six monthly EC compliance report from Apr'2022 to Sep'2022 and one soft copy (in CD with all annexures) of same report.
Annexure-I : Ambient air quality monitoring reports (from Apr'2022 to Sep'2022).
Annexure-II : Ambient noise quality monitoring reports (from Apr'2022 to Sep'2022).
Annexure-III: CSR activities carried out for social upliftment in the nearby village (from Apr'2022 to Sep'2022).
Annexure-IV: Online continuous ambient air quality monitoring data (from Apr'2022 to Sep'2022).
Annexure-V : Acknowledgement copy of last Six Monthly EC compliance report submitted to MoEF&CC, Regional Office, Chandigarh. For the period of Oct '2021 to Mar'2022.
Annexure- VI: Stack emission monitoring data (from Apr'2022 to Sep'2022).
Annexure-VII: Effluent analysis reports (from Apr'2022 to Sep'2022).
Annexure-VIII: Activities undertaken for improving socio-economic conditions of the surrounding villages.
Annexure-IX : Eco-developmental measures including community welfare measures in the project area
Annexure- X : Copy of Air CTO and Water CTO (Consent to Operate).
Annexure-XI : CER plan for BS-VI Fuel Quality Up-gradation Project.
Annexure-XII : Copy of the advertisement publishing the accordance of Environmental Clearance by MoEF&CC.
Annexure-XIII : Online data of ETP parameters.

ENVIRONMENT CLEARANCE COMPLIANCE AND MONITORING REPORTS

Six Monthly EC Compliance Report

(1st April, 2022 to 30th September, 2022)

Guru Gobind Singh Refinery

(HPCL-Mittal Energy Limited)

Bathinda (Punjab)

ENCLOSURE

EC for 9 MMTPA Grass Root Refinery Project (Guru Gobind Singh Refinery).

(Ref. Letter No. J-11011/24/98-IA II, dated 6th November, 1998)

I. SPECIFIC CONDITIONS:

S.No	SPECIFIC CONDITIONS	COMPLIANCE STATUS
i.	No construction of the Refinery Project shall be undertaken till environmental clearance for the linked proposal viz. Captive Power Plant, COT and Crude Oil Pipeline and SPM are accorded by this Ministry.	Already complied with.
ii.	The gaseous emissions (SO_2, NO_X, HC, CO) and particulate matters, from various process units should conform to the standards prescribed by the concerned authorities from time to time. The total SO_2 emission from the refinery including power plant shall not exceed 1000 kg/hr (maximum). At no time, the emission level should go beyond the stipulated standards. In the event of failure of pollution control systems (s) adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency	Being complied with regularly. All Process Units are designed to ensure that gaseous emission and total SO_2 emission are within the standards prescribed by CPCB.
iii.	Sulphur recovery units with more than 99% efficiency shall be provided.	Complied with. Sulphur Recovery Unit (SRU) with >99.9% wt recovery of Sulphur has been installed. Month wise details is as under: **Month** / **Sulphur Recovery (in %)** Apr'2022 / 99.98 May'2022 / 99.98 Jun'2022 / 99.94 Jul'2022 / 98.98 Aug'2022 / 99.94 Sep'2022 / 99.95
iv.	A minimum of five Ambient Air Quality Monitoring Stations should be set up and around the refinery	Complied with.

S.No	SPECIFIC CONDITIONS	COMPLIANCE STATUS
	area based on the micro meteorological conditions as well as where maximum ground level concentration of SPM, SO_x, NO_x , HC and RPM are anticipated in consultation with the State Pollution Control Board . In addition, a mobile van with adequate facilities to monitor ambient air quality outside the refinery premised should be provided.	Five (5) nos. of continuous ambient air quality monitoring stations have been set up inside GGSR in consultation with regulatory body. Subsequently, we have a mobile van with adequate facilities to monitor ambient air quality outside the refinery premised. Month wise data of ambient air quality (for the period of Apr'2022 to Sep'22) is attached as **Annexure-I**.
v.	Fugitive emission of HC from product storage tank yard, crude oil tanks etc. must be regularly monitored. Sensors for detecting HC leakage should also be provided at strategic locations.	Being complied with.
vi.	Liquid effluent generated from the refinery should be treated comprehensively to conform to the load based standards and concentration limits prescribed under EPA rules. The treated waste water should be recycled to the maximum extent for reuse in the plant operation and green belt development.	Complied with. The Effluent generated in the Refinery is being treated in Effluent Treatment Plant. The treated waste water is reused in green belt development. The Treatment consists of Primary treatment section followed by the Biological Treatment section comprising of Sequential Batch Reactor & Membrane Bio Reactor.
vii	Influent and effluent quality monitoring station should be set up in consultation with the State Pollution Control Board. Regular monitoring should be carried out for the MINAS.	This condition is being complied with.
viii.	The overall noise levels in and around the plant area should be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. On all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA(day time) and 70 dBA (night time) .	Being complied with. The overall noise levels in and around the plant areas are well within the standards. Various noise control measures such as acoustic hoods, enclosures etc. have been provided for reducing noise impact from high noise generating equipment. The day time and night time noise level is well within the standards prescribed under Environment (Protection) Act 1986 Rules,1989 Please refer **Annexure-II** ambient noise monitoring reports.

S.No	SPECIFIC CONDITIONS	COMPLIANCE STATUS
ix.	The Company must submit a report on the Black Dust Generation from the refinery and its analysis including RPM, chemical composition within 6 months of plant operation.	Complied. Report already submitted.
x.	The Company must take up a detailed study regarding the Bio- Monitoring aspect of the dust emissions including its particle size distribution, RPM content, chemical characteristics etc. in consultation with an Expert Institute / Organization in order to assess the health impact due to the RPM emissions from the project within 6 months of project commissioning.	Complied. Report already submitted.
xi.	Comprehensive EIA must be carried out and EMP drawn. The Report should be submitted to the Ministry within 1 year incorporating firmed up action plans on pollution control and environmental management for the Refinery.	Complied with.
xii.	In addition to obtaining statutory clearances from CCF, Chief Inspectorate of factories, in the first instances, the project authority must obtain the recommendations of Chief Fire Adviser, Government of India (Ministry of Home Affairs) with regard to the Refinery Safety and fire protection measures. A report in this regard may be submitted to the ministry within 6 months	This condition is complied with. Necessary approval and recommendation from Chief Fire Advisor, Government of India (Ministry of Home Affairs) has been obtained vide letter no. VIII-11011/01/07-DGCD(F) dated 14 July 2010. Report already submitted.
xiii.	Detailed Risk Analysis of the Refinery and associated facilities must be done once the engineering design and layout is frozen. Specifically, comprehensive safety and fire protection measures must be taken with respect to LPG tank area and crude oil storage areas in the plant lay out. Based on this, onsite and off-site emergency preparedness plan must be prepared. Approval from the nodal agency must be obtained before commissioning the project.	Condition stands already complied with.

II. GENERAL CONDITIONS:

S. No.	GENERAL CONDITON	Status
i.	The project authorities must strictly adhere to the stipulations made by the Punjab Pollution Control Board and State Government.	Being complied with.
ii.	No further expansion or modifications in the plant should be carried out without prior approval of the Ministry of Environment of Forests.	Being complied with.
iii.	In case of deviations or alterations in the project proposed from those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Complied with. No alterations carried out.
iv.	The project authorities must strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous chemicals Rules, 1989 as amended on 3rd October, 1994. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, fire Safety Inspectorate etc. must be obtained.	This condition is already complied with.
v.	The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management & Handling) Rules, 1989. Authorization from the State Pollution Control Board must be obtained for collections/ treatment/storage/disposal.	This condition is being complied with.
vi.	Occupational health surveillance programme should be undertaken as regular exercise for all the employees, specifically for those engaged in handling hazardous substances.	This condition is being complied with on regular basis.

S. No.	GENERAL CONDITON	Status
vii.	A green belt of adequate width and density should be developed using native plant species, within and around plant premised in consultation with State Forest Department. A norm of 2000-2500 plants per ha may be followed.	Complied with. Green belt has been developed as per the latest amended EC obtained from MoEF&CC dated 07th December, 2021.
viii.	Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation etc. should be ensured for constructions workers during the construction phase so as to avoid felling of trees and pollution of water and the surroundings.	This condition was complied with during construction phase.
ix.	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA and Risk Analysis report.	Complied with. The Environmental protection measures and safeguards recommended in the EIA and Risk Analysis report are being complied with.
x.	The project proponent should have a scheme for social upliftment in the nearby village with reference to contribution in road construction, education of children, festivals, health centers, sanitation facilities, drinking water supply, community awareness and employment to local people whenever possible both for technical and non-technical jobs.	Condition is being complied with. Various measures taken for social upliftment in the nearby villages, till date by the project proponent are enclosed in **Annexure-III.**
xi.	A separate environmental management cell equipped with full-fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.	This condition stands complied with. A full-fledged environment management cell headed by DGM-TS and laboratories facilities have been established to carry out the environmental management and monitoring functions.
xii.	The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purpose.	Complied with. Adequate funds have been allocated for adhering to the conditions stipulated by MoEF&CC / CPCB/ PPCB and these funds are not diverted for any other purpose.

S. No.	GENERAL CONDITON	Status
xiii.	The implementation of the project vis-à-vis environmental action plans will be monitored by Ministry's Regional Office at Chandigarh / State Pollution Control Board / Central Pollution Control Board. A Six monthly compliance status report should be submitted to monitoring agencies.	This condition is being complied with on regular basis. At the end of every six month a EC compliance report is being submitted to MoEF&CC. Latest submission via letter no. HMEL-TS-40-ENV 937 on dated 1st June, 2022, copy attached as **Annexure-V**.

Six Monthly EC compliance report of GGSR for Modification of Refinery Configuration of 9 MMTPA refinery. (Letter no. J-11011/27512007-IA II (I) date 16th July 2007).

A. SPECIFIC CONDITIONS:

S. No.	SPECIFIC CONDITIONS	COMPLIANCE STATUS
i.	All the conditions stipulated by this Ministry vide its letter no. J-11011/24/98-IA-II (I) dated 6th November, 1998 shall be strictly implemented.	Complied.
ii.	The gaseous emissions (SO_2, NO_X, HC, H_2S and Benzene), from various process units shall conform to the standards prescribed under Environment (Protection) Rules, 1986 or norms stipulated by the SPCB whichever is more stringent. At no time, the emission level should go beyond the stipulated standards. In the event of failure of pollution control systems (s) adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency.	Complied with. The gaseous emissions (SO_2, NO_X, HC, etc.) from the various process units comply with the requirement prescribed by PPCB and Refinery Standards as notified in 2008.
iii.	Adequate Ambient Air Quality Monitoring Stations [SPM, SO_2, NO_x, HC, and Benzene] shall be set up in consultation with SPCB, based on occurrence of maximum ground level concentration and down wind direction i.e. maximum impact zone. The monitoring network must be decided based on modeling exercise to represent short term GLCs. Continuous on-line stack monitoring equipment shall be installed for measurement of SO_2, NO_x. The company shall install online monitors for VOC measurements. Data on VOC shall be monitored and submitted to the SPCB/Ministry.	This condition is complied with. Five (5) nos. of continuous ambient air quality monitoring stations have been set up inside GGSR in consultation with regulatory body. Parameters like PM_{10}, $PM_{2.5}$, SO_2, NO_x Benzene and VOC are being monitored on continuous bases, report is as **Annexure-IV** for the same.
iv.	Measures for fugitive emissions control shall be taken by provision of double mechanical seals to all pumps handling high vapor pressure materials, Sensors for detecting HC/toxic leakages at strategic locations, regular inspection of floating roof seals, maintenance	Complied with. The Refinery has taken various measures for the control of fugitive emissions. Most of the HC Pumps are designed with double Mechanical seals. HC & Toxic gas detectors have been installed at strategic locations

<table>
<tr><th>S. No.</th><th>SPECIFIC CONDITIONS</th><th>COMPLIANCE STATUS</th></tr>
<tr><td></td><td>of valves and other equipments and regular skimming of separators/equalization basin.</td><td>for the detection of leaks. Inspection of floating roof seals, maintenance of valves and other equipment is done as a standard practice.</td></tr>
<tr><td>v.</td><td>All new standards /norms that are being proposed by CPCB for oil refineries and petrochemicals shall be applicable for the proposed refinery configuration. The project authorities shall take necessary measures to comply with the above proposed emission norms including monitoring facilities and intimate the same to the ministry.</td><td>Complied.</td></tr>
<tr><td>vi.</td><td>The company shall adopt Leak Detection and Repair (LDAR) programme for quantification and control of fugitive emissions.</td><td>This condition is complied with.
LDAR programme is being carried out throughout the year for quantification and control of fugitive emissions by third party and record maintained.</td></tr>
<tr><td>vii.</td><td>The Company shall also ensure that the total SO_2 emissions shall not exceed 1000 kg/hr. Sulphur recovery units with more than 99% efficiency shall be installed.</td><td>This condition is being complied with.
SO_2 emissions are well within the stipulated limit of CPCB.
Exiting SO2 emission: Average range 640 kg/hr to 724 kg/hr. (15.36 TPD to 17.38 TPD). The overall sulphur recovery efficiency of Sulphur Recovery Unit with tail gas treatment for the compliance period was 99.94% – 99.98%.
<table>
<tr><th>Month</th><th>Sulphur Recovery (in %)</th></tr>
<tr><td>Apr’2022</td><td>99.98</td></tr>
<tr><td>May’2022</td><td>99.98</td></tr>
<tr><td>Jun’2022</td><td>99.94</td></tr>
<tr><td>Jul’2022</td><td>98.98</td></tr>
<tr><td>Aug’2022</td><td>99.94</td></tr>
<tr><td>Sep’2022</td><td>99.95</td></tr>
</table></td></tr>
<tr><td>viii.</td><td>To mitigate NO_x emission, the company shall install low NO_x burners.</td><td>This condition is complied with.
Low NOx burners are installed in all boilers and heaters.</td></tr>
</table>

S. No.	SPECIFIC CONDITIONS	COMPLIANCE STATUS
ix.	The waste-water effluent shall not exceed 450 m^3/hr. The waste-water shall be segregated in different streams at the source. The treated effluent shall comply with the standards stipulated by PSPC/CPCB for discharge on land for irrigation. The treated effluent shall be recycled and reused for cooling, service, green belt, dust suppression and fire water etc.	Complied with. The waste-water effluent is well within 350 m^3/hr. The waste-water is segregated in different streams at the source like Stripped Sour Water, CRWS, and OWS etc. The treated effluent comply the standards stipulated by PPCB/CPCB for discharge on land for irrigation. The treated effluent water is being reused and recycled for green belt development, dust suppression & fire network within the refinery.
x.	The oily sludge generated from the ETP after oil recovery shall be disposed in the secured land fill as per CPCB requirement. The spent catalyst from various units shall be returned to the manufacturers for reuse/recycle. The pet coke generated should be sold. The design of the secured landfill site shall be as per the Central Pollution Control Board guidelines.	Complied with. The Oily Sludge generated from ETP is partially processed / recycle to Delayed Coker Unit (DCU). The spent catalyst from the various process units is disposed off to the approved recyclers. Details are provided in the annual return under HOWM, Rules, 2016. The pet coke generated from DCU is being used/sold. A Secured Land Fill (SLF) site have been developed for disposal of solid/hazardous waste complying with all the applicable regulations/guidelines issued by MoEF&CC.
xi.	Green belt shall be provided to mitigate the effects of fugitive emissions all around the plant in an area of 300 acres in consultation with DFO as per CPCB guidelines.	Complied with. Green belt has been developed as per the latest amended EC obtained from MoEF&CC dated 07th December, 2021.
xii.	Occupational Health Surveillance of the workers shall be done on a regular basis and records maintained as per the Factories act.	This condition is being complied. A full-fledged Occupational Health Centre (OHC) is established at GGSR for health surveillance and records are maintained on regular basis.
xiii.	The company shall prepare comprehensive EIA/EMP report and should be submitted to the Ministry within 1 year.	This condition is complied with. EIA / EMP report is already submitted to Ministry.
xiv.	Detailed Risk Analysis of the Refinery and associated facilities shall be prepared once the engineering	This condition is complied with.

S. No.	SPECIFIC CONDITIONS	COMPLIANCE STATUS
	design and layout is frozen. Onsite and off-site emergency preparedness plan must be prepared and approval from the nodal agency shall be obtained before commissioning the project.	Detailed Risk Analysis of the Refinery and associated facilities was prepared by Engineers India Limited. Onsite and off-site emergency prepared and approval for the same is obtained from Director of Factory.

GENERAL CONDITIONS:

S. No.	GENERAL CONDITONS	COMPLIANCE STATUS
i.	The project authorities must strictly adhere to the stipulations made by the Punjab Pollution Control Board and State Government.	The stipulations made by PPCB are being adhered to strictly.
ii.	No further expansion or modifications in the plant should be carried out without prior approval of the Ministry of Environment of Forests.	Condition noted. Prior approval is obtained from MOEF for any expansion / modifications activities.
iii.	At no time, the emission level should go beyond the stipulated standards. In the event of failure of any pollution control system adopted by the unit, the respective unit should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved.	The Emission levels are within the stipulated standards as per the norms prescribed by the CPCB. Online Continues Emission Monitoring System (OCMS) have been installed as per the direction of CPCB/PPCB and data is being transmitted on server of CPCB/PPCB.
iv.	The overall noise levels in and around the plant area should be kept well within the standards (75 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA(day time) and 70 dBA (night time).	Being complied with. The overall noise levels in and around the plant areas are well within the standards. Various noise control measures such as acoustic hoods, enclosures etc. have been provided for reducing noise impact from high noise generating equipment. The day time and night time noise level is well within the standards prescribed under Environment (Protection) Act 1986 Rules,1989 Please refer **Annexure-II** ambient noise monitoring reports.
v.	The project authorities must strictly comply with provisions made in Manufacture, Storage and Import of Hazardous chemicals Rules, 1989 as amended in 2000 for handling of Hazardous chemicals etc. Necessary approvals from, Chief Controller of Explosives must be obtained before commission of project.	This condition is being complied with.

S. No.	GENERAL CONDITONS	COMPLIANCE STATUS
vi.	The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management & Handling) Rules, 2003. Authorization from the State Pollution Control Board must be obtained for collections/ treatment/storage/disposal of Hazardous wastes.	Complied with. Latest Hazardous Wastes (Management & Handling) Rules, 2016 are being complied with. Authorization from PPCB has been obtained and is valid till 17.05.2026.
vii	The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purpose.	Adequate funds have been allocated for adhering to the conditions stipulated by MoEF&CC and PPCB and are not diverted for any other purpose.
viii.	The stipulated conditions will be monitored by regional office of this ministry at Chandigarh/Central Pollution Control Board/State Pollution Control Board. A Six Monthly compliance report and the monitored data should be submitted to them regularly.	This condition is being complied with on regular basis. At the end of every six months a compliance report is submitted to MoEF&CC. Latest submission via letter no. HMEL-TS-40-ENV 937 on dated 1st June, 2022. Acknowledgement copy is attached as Annexure**-V.**
ix.	The project proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests at http://www.envfor.nic.in. This should be advertised within seven days from the issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in vernacular language of the	This condition already stands complied with.

S. No.	GENERAL CONDITONS	COMPLIANCE STATUS
	locality concerned and a copy the same should be forwarded to the regional office.	
x.	The Project Authorities should inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	This condition is complied with. The financial closure of the Project had been achieved in July 2007 and zero date for the Project had been declared as Nov 14, 2007. The above had already been informed to Regional office as well as to the Ministry.

A. SPECIFIC CONDITIONS

<table>
<tr><th>S. No.</th><th>SPECIFIC CONDITIONS</th><th>COMPLIANCE STATUS</th></tr>
<tr><td>i</td><td>Compliance to all the environmental conditions stipulated in the environmental clearance letter no. J 11011/24/98-IA II dated 6th November 1998 and J-11011/275/2007-IA II dated 16th July 2007 shall be satisfactorily implemented and compliance reports submitted to the Ministry's regional office at Chandigarh.</td><td>Complied with.
The compliance to all the environmental conditions stipulated in the environmental clearances granted in 1998 and 2007 has been certified by MoEF&CC, Regional Office, Chandigarh vide the letter no. 4-81/2004-RO (NZ)/293-294 dated 14.07.2017. The summary status of the compliances as stipulated in the said letter is given below:
<table>
<tr><th>EC grant year</th><th>No. of Conditions</th><th>No of Conditions Complied</th><th>No of condition s pending</th></tr>
<tr><td>2007</td><td>24</td><td>24</td><td>Nil</td></tr>
<tr><td>1998</td><td>26</td><td>26</td><td>Nil</td></tr>
</table></td></tr>
<tr><td>ii</td><td>M/s HPCL-Mittal Energy Limited shall comply with new standards/norms for oil refinery industry notified under the Environment (Protection) Rules, 1986 vide G.S.R 186E dated 18th March 2008.</td><td>Complied with.
All the standards/norms for oil refinery notified under the EP Rules 1986 vide GSR 186 E dated 18th March 2008 are being complied with.
The stack emission monitoring reports and effluent analysis reports are attached as Annexure-VI and Annexure-VII respectively.
Hence, this condition is being complied with.</td></tr>
<tr><td>iii</td><td>Continuous online stack monitoring of SO_2, NO_X & CO of all stacks shall be carried out. Low NO_X burners shall be installed.</td><td>Complied with.
Continuous online stack monitoring analyzers for SO_2, NOx, CO and SPM have been installed in all stacks and the data is being transmitted online to CPCB/PPCB servers.</td></tr>
</table>

<table>
<tr><th>S. No.</th><th>SPECIFIC CONDITIONS</th><th>COMPLIANCE STATUS</th></tr>
<tr><td></td><td></td><td>Low NO_X burners have been installed in all the boilers and heaters.</td></tr>
<tr><td>iv</td><td>ESP along within stack of adequate height shall be provided to pet coke/coal fired boiler. Limestone will be injected to pet coke/coal fired boiler to control SO_2 emission.</td><td>Complied with.
ESPs and adequate stacks height have been provided to petcoke/coal fired boilers. Limestone injection facility is installed in the pet coke/coal fired boilers to control SO_2 emission.
Hence, this condition has been complied.</td></tr>
<tr><td>v</td><td>The process emissions SO_2, NO_X, HC (Methane & non methane), VOC's & Benzene from various units shall conform to the standards prescribed under Environmental (Protection) Act. At no time shall emission levels shall go beyond the stipulated standards. In the event of failure of pollution control systems adopted by the units, the unit shall be immediately put out of operation and should be not restarted until the desired efficiency of the pollution control device has been achieved.</td><td>Complied with.
The continuous emission monitoring systems (CEMS) data on gaseous emissions and particulate matter from various units are being transmitted online to CPCB/PPCB servers.
Manual monitoring for gaseous emissions and particulate matter in stacks are also being monitored by third party (MoEF&CC & NABL approved laboratory), the data of which is enclosed as Annexure- VI.</td></tr>
<tr><td>vi</td><td>Leak Detection & Repair Program shall be prepared and implemented to control HC/VOC emissions. Focus shall be given to prevent fugitive emissions for which preventive maintenance of pumps, valves, pipelines are required. Proper maintenance of mechanical seals of pumps and valves shall be given. A preventive maintenance schedule for each unit shall be prepared and adhered to. Fugitive emissions of HC from product storage tank yards etc. must be regularly monitored. Sensors for detecting HC leakage shall be provided at strategic locations.</td><td>Complied with.
LDAR program for the refinery has been implemented for control of HC/VOC emissions. The program focuses on preventive maintenance of pumps, compressors, flanges and valves.

Sensors for detecting HC leakage has also been provided at strategic locations with ISBL area.
<table>
<tr><th>Type of Detector</th><th>Numbers</th></tr>
<tr><td>Hydrocarbon (process area)</td><td>773</td></tr>
<tr><td>Hydrocarbon(analyzer shelter)</td><td>77</td></tr>
<tr><td>Toxic gases + Hydrogen</td><td>303</td></tr>
</table></td></tr>
<tr><td>vii</td><td>SO_2 emissions after expansion from the plant shall no exceed 23.64 TPD and further efforts shall be made for reduction of SO_2 load through use of low</td><td>This condition is being complied with.
The total SO_2 emission from the GGSR has been modified to 23.8 TPD as per EC dated 07th August 2018,</td></tr>
</table>

<table>
<tr><th>S. No.</th><th>SPECIFIC CONDITIONS</th><th>COMPLIANCE STATUS</th></tr>
<tr><td></td><td>sulphur fuel. Sulphur recovery units shall be installed for control of H_2S emissions. The overall sulphur recovery efficiency of sulphur recovery unit with tail gas treating shall not be less than 99.9 %.</td><td>which includes emissions from the expansion projects. SO_2 emission from the existing refinery remained in the range of 15.36 TPD to 17.38 TPD against the limit of 23.8 TPD.
The overall sulphur recovery efficiency of Sulphur Recovery Unit with tail gas treatment for the compliance period was 99.94% – 99.98%.
Month wise sulphur recovery is given below:
<table><tr><th>Month</th><th>Sulphur Recovery (in %)</th></tr><tr><td>Apr’2022</td><td>99.98</td></tr><tr><td>May’2022</td><td>99.98</td></tr><tr><td>Jun’2022</td><td>99.94</td></tr><tr><td>Jul’2022</td><td>98.98</td></tr><tr><td>Aug’2022</td><td>99.94</td></tr><tr><td>Sep’2022</td><td>99.95</td></tr></table></td></tr>
<tr><td>viii</td><td>As proposed, record of sulphur balance shall be maintained at the Refinery as part of the environmental data on regular basis. The basic component of sulphur balance include sulphur unit through feed (sulphur content in crude oil), sulphur output from refinery through products, byproducts (elemental sulphur), atmospheric emissions etc. will be maintained.</td><td>This condition is being complied with.
The sulphur balance of the refinery is calculated considering the sulphur content in crude, atmospheric SO_2 emissions from various units, solid sulphur produced and the sulphur content in various products. The sulphur balance is regularly computed and the data maintained.</td></tr>
<tr><td>ix</td><td>Flare gas recovery system shall be installed.</td><td>Complied with.
Flare recovery system is in operation.
The month wise HC recovery is given below:
<table><tr><th>Month</th><th>HC Recovery (MT)</th></tr><tr><td>Apr'22</td><td>616</td></tr><tr><td>May'22</td><td>605</td></tr><tr><td>Jun'22</td><td>609</td></tr><tr><td>Jul'22</td><td>597</td></tr><tr><td>Aug'22</td><td>847</td></tr><tr><td>Sep'22</td><td>764</td></tr></table></td></tr>
</table>

<table>
<tr><th>S. No.</th><th>SPECIFIC CONDITIONS</th><th>COMPLIANCE STATUS</th></tr>
<tr><td></td><td></td><td><table><tr><td>Average</td><td>673</td></tr></table></td></tr>
<tr><td>x</td><td>Ambient air quality monitoring stations, (PM_{10}, $PM_{2.5}$, SO_2, NO_X, H_2S, Mercaptan, non-methane-HC and Benzene) shall be set up in the complex in consultation with State Pollution Control Board, based on occurrence of maximum ground level concentration and down-wind direction of wind. The monitoring network must be decided based on modeling exercise to represent short term GLCs. Trend analysis w.r.t past monitoring results shall also be carried out. Adequate measures based on the trend analysis shall be taken to improve the ambient air quality in the project area.</td><td>This condition is being complied.
Five (5) nos. of continuous ambient air quality monitoring stations have been set up inside GGSR in consultation with regulatory body.
Ambient air quality monitoring data is attached as Annexure-I.</td></tr>
<tr><td>xi</td><td>The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards. Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution. Besides, acoustic enclosure/silencer shall be installed wherever it is possible.</td><td>Complied with.
Suitable stack height as per the prescribed standards and necessary acoustic enclosure are provided for the DG sets.</td></tr>
<tr><td>xii</td><td>Total water requirement from Kotla Canal after expansion shall not exceed 2,420 m^3/hr and prior permission shall be obtained from the competent authority. Industrial effluent generation shall not exceed 720m^3/h and treated in the effluent treatment plant. Out of which 376 m^3/h of industrial effluent generated from cooling tower blow down and boiler blow down shall be treated through Reverse Osmosis (RO) and Demineralize Plant (DM) and permeate shall be recycled for cooling tower make up and boiler blow down. RO rejects shall be evaporated in the Multiple effect evaporator (MEE). Process effluent and condensate from MEE shall be treated in the ETP comprising API</td><td>This condition is being complied.
As per the latest EC dated 07th August 2018, total water requirement is 2452 m^3/hr.

The total water usage and industrial effluent generation/reuse quantities are well within the stipulated limits.
Average consumption of raw water for the period Apr’2022 to Sep’2022 is 2110 m^3/hr the data of which is given below:<table><tr><th>Month</th><th>Raw water consumption (m^3/hr)</th></tr><tr><td>Apr’22</td><td>2127</td></tr><tr><td>May’22</td><td>2165</td></tr></table></td></tr>
</table>

<table>
<tr><th>S. No.</th><th>SPECIFIC CONDITIONS</th><th>COMPLIANCE STATUS</th></tr>
<tr><td></td><td>and TPI oil removal units, biological treatment units such as SBR, MBR and tertiary treatment unit. Treatment effluent shall be recycled for cooling tower make up water and reused for horticulture/gardening. Domestic sewage shall be treated in sewage treatment plant (STP).</td><td>
<table>
<tr><td>Jun’22</td><td>2257</td></tr>
<tr><td>July’22</td><td>2046</td></tr>
<tr><td>Aug’22</td><td>2095</td></tr>
<tr><td>Sep’22</td><td>1968</td></tr>
<tr><td>Average</td><td>2110</td></tr>
</table>

The permission for drawl of water from Kotla canal is obtained vide letter no. 021/2014- (2) 1128-4426/1 dated 30.07.2018.

For the period of Apr’2022 to Sep’2022, the treated effluent generated is in the range of 246 – 262 m^3/hr.

Boiler blow down and cooling tower blow down are treated in RO/DM units and the permeate is recycled back into process. The RO rejects are evaporated in solar pond / evaporation plant.

During Apr’2022 to Sep’2022, entire treated effluent from ETP was used for horticulture /green belt development.

Average 19 m^3/day of domestic sewage was treated in domestic sewage treatment plant during Apr’2022 to Sep’2022.</td></tr>
<tr><td>xiii</td><td>All the effluents after treatment shall be routed to a properly lined guard pond for equalization and final control. In the guard pond, automatic monitoring system for flow rate, pH and TOC shall be provided. Data shall be uploaded on company’s website and provided to respective regional Office of MoEF&CC and SPCB.</td><td>Complied with.
All the effluent after treatment are routed to treated effluent tank. The online flow meter, pH, COD, BOD & TSS analyzers are installed at ETP outlet and data is being transmitted to CPCB / PPCB server as per the direction of CPCB/PPCB in 2016, copy of data from Apr’2022 to Sep’2022 is attached as Annexure-XIII.</td></tr>
</table>

S. No.	SPECIFIC CONDITIONS	COMPLIANCE STATUS
		The ETP outlet data is uploaded along with six monthly compliance report on company's website and also submitted to RO, MoEF&CC, and Chandigarh.
xiv	Oil catchers / oil traps shall be provided at all possible locations in rain / storm water drainage system inside factory premises.	Complied with. Two (2) nos. of oil catchers are provided at upstream of storm water pond within refinery complex.
xv	Oily sludge shall be disposed off into coker and balance oily sludge will be treated in the bioremediation facility. Annual oily sludge generation and disposal data shall be submitted to the Ministry's Regional office and CPCB.	Complied with. The oily sludge generated is disposed in Delayed Coker Unit (DCU) and balance oily sludge is disposed in Secured Landfill Facility within the refinery complex. The annual returns (Form-IV) of hazardous waste containing the data for oily sludge that is generated & disposed for the period of 2021-22 was submitted vide letter no. HMEL-TS-40-ENV 940 on dated 22th June, 2022. During Apr'2022 to Sep'2022, 4943 MT oily and chemical sludge is generated and reprocessed in Delayed Coker Unit.
xvi	The company should strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in October, 1994 and January, 2000. Hazardous waste should be disposed of as per Hazardous Waste (Management, Handling & Trans - Boundary movement) rules 2008 & amended time to time.	Complied with. The rules and regulations specified under MSIHC Rules, 1989, have been incorporated in the design requirements of refinery and its associated facilities and accordingly implemented. The hazardous waste is handled, stored, transported and disposed as per the Hazardous Waste (Management, Handling & Transboundary Movement) Rules, 2016 and the hazardous waste authorization issued by PPCB, which is valid till 17.05.2026. Hence, this condition is complied with.
xvii	The membership of common TSDF should be obtained for the disposal of the hazardous waste. Copy of authorization or membership of TSDF should be submitted to Ministry's Regional Office	Complied. The refinery has an operational Secured Landfill (SLF) facility within the complex. Non-recyclable or non-reprocessable hazardous waste from the existing as

<table>
<tr><th>S. No.</th><th>SPECIFIC CONDITIONS</th><th>COMPLIANCE STATUS</th></tr>
<tr><td></td><td>at Chandigarh. Chemical/ Inorganic sludge shall be sent to treatment storage disposal facility (TSDF) for hazardous waste. Spent catalyst shall be sent to authorized recyclers /re-processors.</td><td>well as expansion units are disposed in this SLF. Hence, membership for the common TSDF has not been taken.
Spent catalyst from various units are disposed to SPCB authorized recyclers/reprocessors.</td></tr>
<tr><td>xviii</td><td>Proper oil spillage prevention management plan shall be prepared to avoid spillage/leakage of oil/petroleum products and ensure regular monitoring.</td><td>Complied with.
The oil spillage/leakage prevention management plan is in place.</td></tr>
<tr><td>xix</td><td>The company shall strictly follow all the recommendations mentioned in Charter on Corporate Responsibility for Environmental Protection (CREP).</td><td>The CREP recommendations implementation status is as under:
<table>
<tr><th>Sr. No</th><th>Requirement of CREP</th><th>Status</th></tr>
<tr><td>1</td><td>Installation of online monitoring system</td><td>Completed.
Continuous Emission/Effluent Monitoring System have been installed in stacks and ETP outlet. Continuous Ambient Air Quality Monitoring Stations (CAAQMS) are also installed. The CEMS and CAAQMS data is transmitted online data to CPCB servers since March 2016.</td></tr>
<tr><td>2</td><td>Zero Liquid Discharge</td><td>Completed.
GGSR is ZLD refinery. Entire treated water from ETP is used for greenbelt / horticulture development.</td></tr>
<tr><td>3</td><td>Oily Sludge management</td><td>Oily sludge generated from ETP is processed in DCU or</td></tr>
</table></td></tr>
</table>

S. No.	SPECIFIC CONDITIONS	COMPLIANCE STATUS		
				sold to offsite reprocessors or disposed in SLF.
		4	Installation of VOC collection and treatment system in ETP.	Completed. Since design stage VOC collection and treatment system is installed and operational in ETP.
		5	Air Emission reduction measures adopted.	a) Use of Low Sulphur Fuel Oil and Fuel Gas in Refinery (<0.5 % sulphur in FO & < 150 mg/nm^3 sulphur in FG). b) Use of low NOx burners in all heaters and boilers to minimize NOx emissions. c) Stack heights have been provided in line with minimum stack height criteria as per CPCB Standards d) Installation of Third Stage Separator (TSS) and Fourth Stage Separator (FSS) in FCC to minimize particulate matter emissions e) Floating roofs are provided in storage tanks to minimize the fugitive emissions. f) VOC emission treatment at ETP to minimize fugitive emissions.

S. No.	SPECIFIC CONDITIONS	COMPLIANCE STATUS
		g) Closed Blow down System to minimize hydrocarbon emissions. h) LDAR program implemented.
xx	Occupational Health Surveillance of the workers should be done on regular basis and records maintained as per Factories Act.	Complied with. Health check is done once in six (6) months for workers working in operation area and yearly once for workers working in non-operational area. The health checkup records are being maintained as per Factories Act. Hence, the condition is being complied with.
xxi	As proposed Green Belt over 33 % of the total project area shall be developed within the plant premises with at least 10 meters wide green belt on all sides along the periphery of the project area, in downwards direction, and along road sides etc. Selection of plant species shall be as per CPCB guidelines in consultation with the DFO.	Complied with. Green belt has been developed as per the latest amended EC obtained from MoEF&CC dated 07th December, 2021.
xxii	Company shall prepare project specific environmental manual and a copy shall be made available at the project site for the compliance.	Complied with. Environment manuals of ETP & APCDs have been prepared and available at site with the concerned persons.
xxiii	All the recommendations mentioned in the Rapid Risk Assessment report, disaster management plan & safety guidelines shall be implemented. The company should make the arrangement for protection of possible fire and explosion hazards during manufacturing process in material handling.	Complied with. All the recommendations mentioned in the Rapid Risk Assessment report, disaster management plan & safety guidelines has been implemented.
xxiv	All commitment made regarding issues raised during the public hearing/consultation meeting held on 14th October, shall be satisfactorily implemented. Accordingly provision of budget to be kept.	Complied with. Total 13 queries were raised during Public Hearing for the expansion project. 12 queries have already been completed. One query was related to shifting of

S. No.	SPECIFIC CONDITIONS	COMPLIANCE STATUS
		Kanakwal village and the same was closed by the District Administration. Hence, the condition is complied with.
xxv	At least 2.5% (54 crores) of the total cost of the project shall be earmarked towards the Enterprise social responsibility based on Public Hearing Issues and item-wise details along with time bound action plan shall be prepared and submitted to Ministry's Regional Office at Chandigarh.	Complied with. The details of Enterprise Social Responsibility activities undertaken are enclosed as **Annexure-III**. The time bound action plan of which has been submitted to RO, MoEF&CC, Chandigarh.
xxvi	Company shall adopt Corporate Environment Policy as per the Ministry's O.M No. J-11013/41/2006-IA II (I) dated 26th April 2011 and implemented.	Complied with. We have already adopted & implemented Corporate Environment Policy.
xxvii	Provision shall be made for the housing of construction labour within site with all necessary infrastructure and facility such as fuel for cooking, mobile toilets, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after completion of the project.	Complied. The project was completed in the year of 2017. During the project, canteen facility, toilet facility, RO drinking water & medical health care facility etc. was provided. Hence, this condition was complied with during the construction phase of the project.

B. GENERAL CONDITIONS:

S. No.	GENERAL CONDITIONS	COMPLIANCE STATUS
i	The project authorities shall strictly adhere to the stipulations made by the State Government & Punjab Pollution Control Board.	Complied with. All the stipulations made by the State Government and Punjab Pollution Control Board are being complied with.
ii	No further expansion or modification in the plant shall be carried out with our prior approval of the Ministry of Environment and Forest. In case of deviations or alterations in the project proposal from those submitted to this Ministry for Clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required if any.	Complied with. Pursuant to obtaining this clearance, prior Environmental Clearance (EC) has been obtained from MoEF&CC before implementing the BS VI project vide EC letter no. letter no. F.No. J-11011/386/2016-IA-II (I) dated 7th August 2018. There have been no deviations or alterations made in the project proposal from those submitted to MoEF&CC. Hence, this condition is complied with.
iii	The locations of ambient air quality monitoring stations shall be decided in consultation with the Punjab Pollution Control Board (PPCB) and it shall be insured that at least one station is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	Complied with. Five (5) nos. of Continuous Ambient Air Quality Monitoring stations have been installed in consultation with PPCB in suitable locations of the existing Refinery. Hence, this condition is complied with.
iv	The overall noise levels in and around the plant area shall be kept within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act 1986 Rules,1989 viz.75 dBA (Day time) & 70 dBA (Night time).	Complied with. The overall noise levels in and around the plant areas are well within the standards. Various noise control measures such as acoustic hoods, enclosures etc. have been provided for reducing noise impact from high noise generating equipment. The day time and night time noise level is well within the standards prescribed under Environment (Protection) Act 1986 Rules,1989 Please refer **Annexure-II** ambient noise monitoring reports.

S. No.	GENERAL CONDITIONS	COMPLIANCE STATUS
v	The company shall harvest rainwater from the roof top of the building and storm drains to recharge the ground water and use the same water for the process activities of the project to conserve fresh water.	Complied with. Total 6 nos. of rain water harvesting & ground water charging pits are installed inside the refinery premises. In refinery, storm water pond is provided to harvest rain water. Collected storm water is being utilized for firefighting and horticulture.
vi	The company shall obtain Authorization for collection, storage and disposal of hazardous waste under the Hazardous Waste (Management, Handling and Trans-Boundary Movement) Rules 2008 and its amendment time to time and prior permissions from PPCB shall be obtained for disposal of solid/hazardous waste including boiler ash.	Complied with. The authorization for collection, storage & disposal of Hazardous waste is available for refinery and is valid till 17th May, 2026.
vii	During transfer of materials, spillage shall be avoided and garland drains be constructed to avoid mixing of accidental spillages with domestic wastewater and storm water drains.	The condition is complied with. To avoid the mixing of accidental spillages with domestic wastewater and storm water drains during the transfer of material garland drains have be constructed.
viii	Usage of Personal Protection Equipment's by all employees/workers should be ensured.	This condition is being complied with. PPE's has been provided to all the employees/workers. It is being ensured by all the plants that proper PPE's are worn by all concerned.
ix	Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examination for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	This condition is being complied with. Each worker is imparted safety training before issuing gate pass and refresher training is done every 6 months. Pre-employment and Periodic medical examination is done six monthly for workers working in operational area and yearly for workers working in non-operational area.
x	The company shall also comply with all the environmental protection measures and safeguards	Complied with.

S. No.	GENERAL CONDITIONS	COMPLIANCE STATUS
	proposed in the project report submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management risk mitigation measures and public hearing relating to the project shall be implemented.	
xi	The company shall undertake CSR activities and all the relevant measures for improving the socio-economic conditions of the surrounding area.	This condition is being complied with. Details of activities undertaken for improving socio-economic conditions of the surrounding areas is attached as **Annexure-VIII.**
xii	The company shall undertake eco-developmental measures including community welfare measure in the project area for the overall improvement of the environment.	This condition is being complied with. Details of eco-developmental measures including community welfare measures in the project area is enclosed as **Annexure-IX**.
xiii	A separate Environmental Management cell equipped with full-fledged laboratory facilities shall be set up to carry out the environmental Management and Monitoring functions.	Complied with. A dedicated Environment Management Cell headed by Deputy General Manager (Environment) looks after the Environmental Management and monitoring functions of the refinery. GGSR is also having state of the art laboratory with environment pollution analysis equipment.
xiv	As proposed the company shall earmark the sufficient funds toward capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment and Forest as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.	This condition has been complied with. Adequate funds have been allocated for capital and recurring cost and these funds are not diverted for any other purpose.
xv	A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parishad / Municipal Corporation Urban local Body	This condition has already been complied with.

S. No.	GENERAL CONDITIONS	COMPLIANCE STATUS
	and the local NGO, if any, from who suggestions /representations, if any, were received while processing the proposal.	The company has not received any suggestions/representations while processing the proposal.
xvi	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as email) to the respective regional office of MoEF&CC, the respective zonal office of CPCB and the Punjab Pollution Control Board. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.	This condition is being complied with. The six monthly compliance status reports of the stipulated EC conditions including results of the monitored data are being sent to regional offices of MoEF&CC, CPCB and ZO, PPCB vide letter no. HMEL-TS-40-ENV 937, dated 1st June, 2022. The copy of Environment Clearance and six monthly compliance report has been uploaded on the HMEL website in the link given below: http://www.hmel.in/corporate-sustainability-disclosures-report
xvii	The environmental statement for each financial year ending 31st March in Form - V as is mandated shall be submitted to the Punjab Pollution Control Board as prescribed under Environment (Protection) Rules, 1986, as amended subsequently, shall also be put up on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the Chandigarh Regional offices of MOEF by e-mail.	This condition is being complied with. The environment statement for each financial year ending 31st March in Form-V is being submitted to PPCB and the copy of the same is uploaded on the HMEL website in the link given below: http://www.hmel.in/corporate-sustainability-disclosures-report
xviii	The project proponent shall inform the public that the project has been accorded Environment Clearance by the Ministry and copies of the clearance letter are available with SPCB/committee and may also be seen at website of the ministry at http://envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter at least in two local newspaper that are widely	Complied. The accordance of Environmental Clearance for the project was advertised in two widely circulated local newspaper namely Tribune Bathinda (English) and Ajit (Punjabi) on 30th June 2015. A copy of these advertisement was submitted the Regional Office, MoEF&CC, Chandigarh vide our letter no. 9112-000-TSHQ-009-2015-14 dated 7th July, 2015.

S. No.	GENERAL CONDITIONS	COMPLIANCE STATUS
	circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional Office of Ministry.	
xix	The project authorities shall inform the regional office as well as the ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.	The requested projects milestones are as follows: 1. Date of final board approval is 21st December, 2012. 2. Date of financial closure is 20th March, 2013. 3. Date of start of project is 9th September, 2015.

Six Monthly EC Compliance Report from Oct'2021 to Mar'2022 for Fuel Quality Up-gradation Project at Guru Gobind Singh Refinery, Village Phulokhari, Bathinda District, Punjab (India).

EC No: F. No. J-11011/386/2016-IA-II (I) dated 7th August 2018.

10.0: SPECIFIC CONDIONS:

S. No.	SPECIFIC CONDIONS	COMPLIANCE STATUS
(i)	The project proponent shall take stringent mitigating and other remedial measure to minimize the incremental concentration of air pollution (mainly PM_{10} & $PM_{2.5}$) to extent possible.	Complied with. The following measures have been implemented to minimize the emissions from the proposed project: 1. Regular Sprinkling of water on roads. 2. Widening and bitumen laying of roads. 3. Bitumen carpeting in vehicle parking areas at refinery main gate. 4. Discouraging of stubble burning by providing happy seeders to villagers. The local air quality management plan has been prepared and submitted to PPCB vide letter no. HMEL-TS-40-ENV 644, dated 24th May'19.
(ii)	The project proponent shall develop local air quality management plan in consultation with SPCB and implemented to achieve desired standards.	
(iii)	The incremental ground level concentration (GLCs) for PM_{10}, $PM_{2.5}$, SO_2 & NOx due to the increased vehicular and other allied/developmental activities, shall be analysed and reported for actual impact of the project.	This condition is being complied with.
(iv)	Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.	Complied with. The Consent to Operate (CTO) for the project has been obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974. Copy of the same is attached as **Annexure-X**.

S. No.	SPECIFIC CONDIONS	COMPLIANCE STATUS
(v)	For the fuel quality up-gradation, as already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.	Complied with. The existing refinery complex as well as Fual Up-gradation plant are Zero Liquid Discharge (ZLD) refinery. Treated effluent is recycled and re-used for greenbelt/horticulture etc. Hence, no waste/treated water is discharged outside the premises.
(vi)	Necessary authorization required under the Hazardous and other Wastes (Management and Trans-Boundary Movement) Rules, 2016 and Solid Waste Management Rules, 2016 shall be obtained and the provisions contained in Rules shall be strictly adhered to.	This condition has been complied with. The authorization for collection, storage & disposal of Hazardous waste has already been obtained and is valid till 17.05.2026.
(vii)	National Emission Standards for Petroleum Oil Refinery issued by the Ministry vide G.S.R. 186(E) dated 18th March, 2008 and G.S.R. 595(E) dated 21st August, 2009 as amended time to time shall be followed.	This condition is being complied with.
(viii)	Total SO_2 emission from the refinery shall not exceed 990 kg/hr.	This condition is being complied with. Exiting SO2 emission: Average range 640 kg/hr to 724 kg/hr. (15.36 TPD to 17.38 TPD).
(ix)	The control source and the fugitive emissions, suitable pollution control devices shall be installed with different stacks (attached to DHDT, HGU, Prime G) to meet the prescribed norms and/or the NAAQS. The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.	Complied with. The DHDT and HGU plants are designed to meet prescribed CPCB/PPCB norms for the refinery. Gaseous emissions are discharged through stacks of adequate heights as per CPCB/PPCB norms.
(x)	Total fresh water requirement shall not exceed 5,952 cum/hr (including 32 cum/hr for the proposed project) to be met from Kotla Canal. Necessary permission in this regard shall be obtained from the concerned regulatory authority.	Complied with. The total water usage and industrial effluent generation/reuse quantities are well within the stipulated limits.

<table>
<tr><th>S. No.</th><th>SPECIFIC CONDIONS</th><th>COMPLIANCE STATUS</th></tr>
<tr><td></td><td></td><td>Average consumption of Raw/fresh water for the period Apr’2022 to Sep’2022 is 2110 m^3/hr. the data of which is given below:
<table><tr><th>Month</th><th>Raw water consumption (m^3/hr)</th></tr><tr><td>Apr’22</td><td>2127</td></tr><tr><td>May’22</td><td>2165</td></tr><tr><td>Jun’22</td><td>2257</td></tr><tr><td>July’22</td><td>2046</td></tr><tr><td>Aug’22</td><td>2095</td></tr><tr><td>Sep’22</td><td>1968</td></tr><tr><td>Average</td><td>2110</td></tr></table>Necessary permission had already been obtained from the state irrigation department.</td></tr>
<tr><td>(xi)</td><td>Process effluent/any wastewater shall not be allowed to mix with storm water. The storm water from the premises shall be collected and discharged through a separate conveyance system.</td><td>Complied with.</td></tr>
<tr><td>(xii)</td><td>Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arrestors shall be provided on tank farm, and solvent transfer to be done through pumps.</td><td>This condition is being complied with.</td></tr>
<tr><td>(xiii)</td><td>Process organic residue and spent carbon shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF. The ash from boiler shall be sold to brick manufacturers/cement industry.</td><td>This condition is being complied with.
There is no boiler in BS-VI project.</td></tr>
<tr><td>(xiv)</td><td>The company shall strictly comply with the rules and guidelines under Manufacture, Storage and import of Hazardous Chemicals (MSIHC) Rules, 1989 as amended time to time. All transportation of Hazardous</td><td>This condition is being complied with.</td></tr>
</table>

S. No.	SPECIFIC CONDIONS	COMPLIANCE STATUS
	chemicals shall be as per the Motor Vehicle Act (MVA), 1989.	
(xv)	Fly ash should be stored separately as per CPCB guidelines so that it should not adversely affect the air quality, becoming air borne by wind or water regime during rainy season by flowing along with the storm water. Direct exposure of workers to fly ash & dust should be avoided.	Complied with. There is no boiler in BS-VI project. Fly as generated from the two CFBC boilers of 300 TPH capacity each is stored in silos and given to the cement industries.
(xvi)	The company shall undertake waste minimization measures as below:- a. Metering and control of quantities of active ingredients to minimize waste b. Reuse of by-products from the process as raw materials or as raw material substitutes in other processes. c. Use of automated filling to minimize spillage. d. Use of Close Feed system into batch reactors. e. Venting equipment through vapor recovery system f. Use of high pressure hoses for equipment clearing to reduce wastewater generation	Noted & complied with.
(xvii)	The green belt of 5-10 m width shall be developed in more than 33% of the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc. Selection of plant	Green belt has been developed as per the latest amended EC obtained from MoEF&CC dated 07th December, 2021.

S. No.	SPECIFIC CONDIONS	COMPLIANCE STATUS
	species shall be as per the CPCB guideline in consultation with State Forest Department.	
(xviii)	At least 0.25% of the total project cost shall be allocated for Corporate Environment Responsibility (CER) and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office.	INR: 275 lakhs i.e. about 0.25% of total project cost has been allocated for Corporate Environment Responsibility (CER) and the time bound action plan has been submitted to MoEF&CC. The copy of the mail to MoEF&CC is enclosed as **Annexure-XI.** A 250 KLD wastewater treatment plant has been installed and made operational by the Company in Phullokhari village under Corporate Environmental Responsibility (CER). Till date, the Company has incurred an expenditure of INR: 70 lakhs (Approx).
(xix)	For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.	Complied with. Suitable stack height as per the prescribed standards and necessary acoustic enclosure are provided for the DG sets.
(xx)	The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Firefighting system shall be as per the norms.	Condition Complied with. Firefighting system in manufacturing process and material handling areas are already installed as per OISD standards.
(xxi)	Continuous online (24*7) monitoring system for stack emissions shall be installed for measurement of flue gas discharge and the pollutants concentration, and the data to be transmitted to the CPCB and SPCB server. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within premises	Condition Complied with. Online SO_2, NOx, CO and SPM analysers for the existing refinery have been installed and the online data is being transmitted to CPCB / PPCB servers. Similarly online continuous effluent monitoring systems and flow meters have been installed at the existing ETP and the online data is being transmitted to CPCB/PPCB. For stack in the proposed project, CEMS for SOx, NOx, CO and PM have been installed & the online data is being transmitted to CPCB/PPCB.

S. No.	SPECIFIC CONDIONS	COMPLIANCE STATUS
(xxii)	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Complied with. Occupation health surveillance is done once in six (6) months for employees working in operational area and yearly once for employees working in non-operational area, and records maintained as per the Factories Act.

10.1: GENERIC CONDIONS:

S. No.	GENERIC CONDITIONS	COMPLIANCE STATUS
(i)	The project authorities must strictly adhere to the stipulations made by the State Government, Central Pollution Control Board, State Pollution Control Board and any other statutory authority.	Complied with. All the conditions stipulated by the MoEF&CC, CPCB and PPCB are being strictly adhered.
(ii)	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Complied with. Prior Environmental Clearances have been obtained from MoEF&CC before implementing the modification/expansion of the existing refinery. Hence, this condition has been complied with.
(iii)	The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured the at least one station each is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	This condition is being complied with. Five (5) nos. of Continuous Ambient Air Quality Monitoring Stations (CAAQMS) have been installed at the periphery of the refinery in consultation with Punjab Pollution Control Board (PPCB).
(iv)	The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R No 826(E) dated 16th November, 2009 shall be followed.	Condition noted and complied with. The National Ambient Air Quality Emission Standards issued by MoEF&CC vide G.S.R. No 826 (E) dated 16th November 2009 is being monitored and the data is being transmitted online to CPCB / PPCB servers.
(v)	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control	Being complied with. The overall noise levels in and around the plant areas are well within the standards. Various noise control

	measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise level shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules viz. 75 dBA (day time) and 70 dBA (night time).	measures such as acoustic hoods, enclosures etc. have been provided for reducing noise impact from high noise generating equipment. The day time and night time noise level is well within the standards prescribed under Environment (Protection) Act 1986 Rules,1989 Please refer **Annexure-II** ambient noise monitoring reports.
(vi)	The company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and use the same water for the process activities of the project to conserve fresh water	Complied with. Total 6 nos. of rain water harvesting & ground water charging pits are installed inside the refinery premises. In the refinery, storm water pond is provided to harvest rain water. Collected storm water is being utilized for firefighting and horticulture.
(vii)	Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	Complied with. Each worker is imparted safety training before issuing gate pass and refresher training is done every 6 months. Pre-employment and periodic medical examinations are done six monthly for workers working in operational area and yearly once for workers working in non-operational area.
(viii)	The company shall also comply with all the environment protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management and risk mitigation measures relating to the project shall be implemented.	This condition is being complied with.
(ix)	The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. ESC	This condition is being complied with. Details of activities undertaken for improving socio-economic conditions of the surrounding areas is attached as **Annexure-VIII.**

	activities shall be undertaken by involving local villages and administration.	
(x)	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.	This condition is being complied with. Details of eco-developmental measures including community welfare measures in the project area is enclosed as **Annexure-IX**.
(xi)	The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement conditions stipulated by the Ministry of Environment, Forest and Climate change as well as the State government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.	Complied with. The company has earmarked sufficient funds towards capital cost and recurring cost per annum to implement conditions stipulated by the MoEF&CC as well as PPCB and will not be diverted for any other purpose.
(xii)	A copy of clearance letter shall be sent by the project proponent to concerned Panchayat, Zilla Parishad /Municipal Corporation, Urban local Body and the local NGO, If any, from whom suggestions/representations if any, were received while processing the proposal.	Copy of the EC letter had already been sent to the concerned quarters.
(xiii)	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF&CC, the respective Zonal office of CPCB and SPCB. A copy of Environment Clearance and six monthly compliance status report shall be posted on the website of the company.	This condition is being complied with. Last six monthly compliance report was submitted to Regional Office of MoEF&CC, the respective Zonal office of CPCB and SPCB vide letter no. HMEL-TS-40-ENV 937, dated 1st June, 2022. The copy of Environment Clearance and six monthly compliance report has been uploaded on the HMEL website in the link given below: http://www.hmel.in/corporate-sustainability-disclosures-report

(xiv)	The environment statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be send to the respective Regional Offices of MoEF&CC by e-mail.	This condition is being complied with. The environment statement for each financial year ending 31st March in Form-V is being submitted to PPCB and the copy of the same is uploaded on the HMEL website in the link given below: http://www.hmel.in/corporate-sustainability-disclosures-report
(xv)	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/committee and may also be seen at Website of the Ministry at http://moef.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to other concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry	A copy of the advertisement publishing the accordance of Environmental Clearance by MoEF&CC in the two local widely circulated newspaper is attached as **Annexure-XII.** Hence, this condition has been complied with.

(xvi)	The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.	This condition is complied with. The requested projects milestones are as follows: 1. Final board approval of the Project: 30th December, 2016. 2. Start of the Project: 6th May, 2019. 3. Financial closure of the Project: Financial closure is 01.03.2021.

ANNEXURE-I

NOIDA TESTING LABORATORIES

(A Environment Approved Testing Laboratory)

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MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-090522-01	09/05/2022

Issued To: HPCL- Mittal Energy Limited, Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	04/04/2022 to 29/04/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-1)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	12/04/2022 TO 04/05/2022
Ambient Average Temperature (°C)	:	35
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
04/04/2022	11:00	1.12	1.625	BDL	BDL	BDL
07/04/2022	10:55	1.11	1.736	BDL	BDL	BDL
11/04/2022	10:20	1.10	1.902	BDL	BDL	BDL
15/04/2022	11:15	1.11	1.533	BDL	BDL	BDL
18/04/2022	10:55	1.12	1.711	BDL	BDL	BDL
21/04/2022	11:25	1.11	1.659	BDL	BDL	BDL
25/04/2022	11:40	1.12	1.402	BDL	BDL	BDL
28/04/2022	10:20	1.12	1.556	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			**20**	**06**	**01**	**01**
Test Method			**AAS Method**	**AAS Method**	**IS:5182 (P-12)**	**IS:5182 (P-22)**

Notes:

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5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until requested by the customer.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-090522-02	09/05/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	04/04/2022 to 29/04/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-2)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	12/04/2022 TO 04/05/2022
Ambient Average Temperature (°C)	:	35
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
04/04/2022	11:15	1.11	1.921	BDL	BDL	BDL
07/04/2022	11:20	1.12	1.715	BDL	BDL	BDL
11/04/2022	10:45	1.11	1.632	BDL	BDL	BDL
15/04/2022	11:25	1.12	1.524	BDL	BDL	BDL
18/04/2022	11:20	1.10	1.756	BDL	BDL	BDL
21/04/2022	11:35	1.11	2.023	BDL	BDL	BDL
25/04/2022	11:55	1.12	1.912	BDL	BDL	BDL
28/04/2022	10:45	1.11	1.803	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			**20**	**06**	**01**	**01**
Test Method			**AAS Method**	**AAS Method**	**IS:5182 (P-12)**	**IS:5182 (P-22)**

Notes:

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-090522-03	09/05/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	04/04/2022 to 29/04/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-3)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	12/04/2022 TO 04/05/2022
Ambient Average Temperature (°C)	:	35
Average Flow Rate of SPM (m^3/min.)	:	1.11
Weather Condition	:	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
04/04/2022	11:25	1.12	2.032	BDL	BDL	BDL
07/04/2022	11:40	1.11	1.854	BDL	BDL	BDL
11/04/2022	11:00	1.10	1.625	BDL	BDL	BDL
15/04/2022	11:35	1.12	1.542	BDL	BDL	BDL
18/04/2022	11:40	1.11	1.432	BDL	BDL	BDL
21/04/2022	11:50	1.12	1.265	BDL	BDL	BDL
25/04/2022	12:10	1.11	1.715	BDL	BDL	BDL
28/04/2022	11:05	1.12	1.625	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			**20**	**06**	**01**	**01**
Test Method			**AAS Method**	**AAS Method**	**IS:5182 (P-12)**	**IS:5182 (P-22)**

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-090522-04	09/05/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	04/04/2022 to 29/04/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-4)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	12/04/2022 TO 04/05/2022
Ambient Average Temperature (°C)	:	35
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
04/04/2022	11:35	1.11	1.652	BDL	BDL	BDL
07/04/2022	12:10	1.12	1.541	BDL	BDL	BDL
11/04/2022	11:15	1.11	1.985	BDL	BDL	BDL
15/04/2022	11:50	1.10	2.031	BDL	BDL	BDL
18/04/2022	12:10	1.12	1.745	BDL	BDL	BDL
21/04/2022	12:00	1.11	1.365	BDL	BDL	BDL
25/04/2022	12:15	1.12	1.452	BDL	BDL	BDL
28/04/2022	11:30	1.11	1.625	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			**20**	**06**	**01**	**01**
Test Method			**AAS Method**	**AAS Method**	**IS:5182 (P-12)**	**IS:5182 (P-22)**

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-090522-05	09/05/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	04/04/2022 to 29/04/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-5)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	12/04/2022 TO 04/05/2022
Ambient Average Temperature (°C)	:	35
Average Flow Rate of SPM (m^3/min.)	:	1.11
Weather Condition	:	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
04/04/2022	11:55	1.11	2.032	BDL	BDL	BDL
07/04/2022	12:25	1.12	1.854	BDL	BDL	BDL
11/04/2022	11:35	1.10	1.627	BDL	BDL	BDL
15/04/2022	12:10	1.11	1.452	BDL	BDL	BDL
18/04/2022	12:25	1.12	1.368	BDL	BDL	BDL
21/04/2022	12:10	1.12	1.405	BDL	BDL	BDL
25/04/2022	12:25	1.11	1.782	BDL	BDL	BDL
28/04/2022	11:50	1.12	1.925	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-090522-06	09/05/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	04/04/2022 to 29/04/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-6)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	12/04/2022 TO 04/05/2022
Ambient Average Temperature (°C)	:	35
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter								
			Ni ng/m³	As ng/m³	BaP*, ng/m³	Pb µg/m³	$PM_{2.5}$ µg/m³	PM_{10} µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO* mg/m³
04/04/2022	10:40	1.12	1.502	BDL	BDL	BDL	52.3	112.3	13.4	15.7	0.745
07/04/2022	10:40	1.111	1.621	BDL	BDL	BDL	50.1	106.5	15.6	18.4	0.627
11/04/2022	10:00	1.12	1.748	BDL	BDL	BDL	48.1	98.4	13.3	16.6	0.511
15/04/2022	11:00	1.11	2.011	BDL	BDL	BDL	46.3	91.2	10.7	16.2	0.501
18/04/2022	10:40	1.10	1.658	BDL	BDL	BDL	50.7	108.4	11.2	15.1	0.569
21/04/2022	11:15	1.12	1.751	BDL	BDL	BDL	48.9	99.6	10.4	13.3	0.512
25/04/2022	11:30	1.11	1.821	BDL	BDL	BDL	45.2	112.4	14.6	16.5	0.426
28/04/2022	10:00	1.12	1.697	BDL	BDL	BDL	51.3	119.7	12.3	14.3	0.627
National Ambient Air Quality Monitoring Standards (2009)			**20**	**06**	**01**	**01**	**60**	**100**	**80**	**80**	**04**
Test Method			**AAS Method**	**AAS Method**	**IS:5182 (P-12)**	**IS:5182 (P-22)**	**Gravimetric**	**IS:5182 (P-23)**	**IS:5182 (P-2)**	**IS:5182 (P-6)**	**IS:5182 (P-10)**

Notes:

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-030622-01	03/06/2022

Issued To: HPCL- Mittal Energy Limited, Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	02/05/2022 to 27/05/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-1)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	09/05/2022 TO 31/05/2022
Ambient Average Temperature (°C)	:	39
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP'), ng/m^3	Lead (as Pb), µg/ m^3
02/05/2022	10:10	1.12	1.485	BDL	BDL	BDL
05/05/2022	10:00	1.12	1.603	BDL	BDL	BDL
09/05/2022	12:40	1.11	1.522	BDL	BDL	BDL
12/05/2022	09:20	1.12	1.789	BDL	BDL	BDL
16/05/2022	10:00	1.12	1.978	BDL	BDL	BDL
19/05/2022	10:15	1.11	1.244	BDL	BDL	BDL
23/05/2022	10:35	1.12	1.384	BDL	BDL	BDL
26/05/2022	9:35	1.12	1.550	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			**20**	**06**	**01**	**01**
Test Method			**AAS Method**	**AAS Method**	**IS:5182 (P-12)**	**IS:5182 (P-22)**

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-030622-02	03/06/2022

Issued To: HPCL- Mittal Energy Limited, Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	02/05/2022 to 27/05/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-2)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	09/05/2022 TO 31/05/2022
Ambient Average Temperature (°C)	:	39
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
02/05/2022	10:25	1.12	1.465	BDL	BDL	BDL
05/05/2022	10:20	1.12	1.984	BDL	BDL	BDL
09/05/2022	12:50	1.11	1.403	BDL	BDL	BDL
12/05/2022	09:45	1.12	1.658	BDL	BDL	BDL
16/05/2022	10:20	1.11	1.873	BDL	BDL	BDL
19/05/2022	10:30	1.12	1.602	BDL	BDL	BDL
23/05/2022	11:05	1.12	1.789	BDL	BDL	BDL
26/05/2022	9:50	1.12	1.460	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-030622-03	03/06/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo
Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	02/05/2022 to 27/05/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-3)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	09/05/2022 TO 31/05/2022
Ambient Average Temperature (°C)	:	39
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
02/05/2022	10:35	1.11	1.809	BDL	BDL	BDL
05/05/2022	10:35	1.12	1.204	BDL	BDL	BDL
09/05/2022	13:00	1.11	1.893	BDL	BDL	BDL
12/05/2022	10:05	1.12	1.743	BDL	BDL	BDL
16/05/2022	10:35	1.12	2.012	BDL	BDL	BDL
19/05/2022	10:50	1.11	1.983	BDL	BDL	BDL
23/05/2022	11:20	1.12	1.669	BDL	BDL	BDL
26/05/2022	10:05	1.12	1.502	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			**20**	**06**	**01**	**01**
Test Method			**AAS Method**	**AAS Method**	**IS:5182 (P-12)**	**IS:5182 (P-22)**

Notes:

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-030622-04	03/06/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	02/05/2022 to 27/05/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-4)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	09/05/2022 TO 31/05/2022
Ambient Average Temperature (°C)	:	39
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
02/05/2022	10:55	1.12	1.607	BDL	BDL	BDL
05/05/2022	10:50	1.11	1.465	BDL	BDL	BDL
09/05/2022	13:10	1.12	1.980	BDL	BDL	BDL
12/05/2022	10:20	1.11	2.103	BDL	BDL	BDL
16/05/2022	10:50	1.12	1.857	BDL	BDL	BDL
19/05/2022	11:05	1.11	1.544	BDL	BDL	BDL
23/05/2022	11:40	1.12	1.607	BDL	BDL	BDL
26/05/2022	10:20	1.12	2.201	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-030622-05	03/06/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	02/05/2022 to 27/05/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-5)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	09/05/2022 TO 31/05/2022
Ambient Average Temperature (°C)	:	39
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
02/05/2022	11:15	1.12	1.596	BDL	BDL	BDL
05/05/2022	11:00	1.11	1.059	BDL	BDL	BDL
09/05/2022	13:20	1.12	1.758	BDL	BDL	BDL
12/05/2022	10:35	1.12	1.564	BDL	BDL	BDL
16/05/2022	11:00	1.11	1.705	BDL	BDL	BDL
19/05/2022	11:20	1.12	2.108	BDL	BDL	BDL
23/05/2022	12:10	1.12	1.893	BDL	BDL	BDL
26/05/2022	10:40	1.11	1.675	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-030622-06	03/06/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	02/05/2022 to 27/05/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-6)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	09/05/2022 TO 31/05/2022
Ambient Average Temperature (°C)	:	39
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter								
			Ni ng/m^3	As ng/m^3	BaP*, ng/m^3	Pb µg/m^3	$PM_{2.5}$ µg/m^3	PM_{10} µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO* mg/m^3
02/05/2022	09:45	1.12	1.863	BDL	BDL	BDL	50.2	105.7	10.7	18.2	0.653
05/05/2022	09:50	1.11	1.586	BDL	BDL	BDL	59.8	120.4	16.0	20.4	0.875
09/05/2022	12:20	1.12	1.309	BDL	BDL	BDL	45.7	90.2	9.4	16.3	0.865
12/05/2022	09:05	1.11	1.445	BDL	BDL	BDL	48.1	96.3	12.3	15.0	0.709
16/05/2022	09:45	1.12	1.765	BDL	BDL	BDL	50.8	113.6	12.8	17.8	0.657
19/05/2022	09:55	1.12	1.504	BDL	BDL	BDL	51.1	116.5	13.4	14.3	0.353
23/05/2022	10:20	1.11	1.667	BDL	BDL	BDL	48.6	82.9	14.9	16.5	0.982
26/05/2022	09:15	1.12	1.850	BDL	BDL	BDL	49.0	87.3	10.5	14.9	0.756
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01	60	100	80	80	04
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)	Gravimetric	IS:5182 (P-23)	IS:5182 (P-2)	IS:5182 (P-6)	IS:5182 (P-10)

Notes:

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-080722-01	08/07/2022

Issued To: HPCL- Mittal Energy Limited, Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	01/06/2022 To 28/06/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-1)
Sampling Plan & Procedure	:	SOP-AAQ/08
Analysis Duration	:	07/06/2022 To 30/06/2022
Ambient Average Temperature (°C)	:	37
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
01/06/2022	08:55	1.11	1.526	BDL	BDL	BDL
06/06/2022	09:00	1.12	1.862	BDL	BDL	BDL
09/06/2022	09:35	1.11	17.26	BDL	BDL	BDL
13/06/2022	09:35	1.12	2.957	BDL	BDL	BDL
16/06/2022	10:35	1.10	1.549	BDL	BDL	BDL
20/06/2022	10:15	1.11	1.755	BDL	BDL	BDL
23/06/2022	10:10	1.12	1.903	BDL	BDL	BDL
27/06/2022	09:45	1.12	1.798	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	**AAQ-080722-02**	08/07/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	**Lab Representative**
Date of Sampling	:	01/06/2022 To 28/06/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-2)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	07/06/2022 To 30/06/2022
Ambient Average Temperature (°C)	:	37
Average Flow Rate of SPM (m^3/min.)	:	**1.12**
Weather Condition	:	**Hot**

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
01/06/2022	09:10	1.12	2.012	BDL	BDL	BDL
06/06/2022	09:15	1.10	1.657	BDL	BDL	BDL
09/06/2022	09:50	1.11	1.749	BDL	BDL	BDL
13/06/2022	09:55	1.12	1.865	BDL	BDL	BDL
16/06/2022	11:05	1.12	1.569	BDL	BDL	BDL
20/06/2022	10:30	1.10	1.701	BDL	BDL	BDL
23/06/2022	10:25	1.11	1.889	BDL	BDL	BDL
27/06/2022	10:00	1.11	2.014	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			**AAS Method**	**AAS Method**	**IS:5182 (P-12)**	**IS:5182 (P-22)**

Notes:

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	**AAQ-080722-03**	**08/07/2022**

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	**Lab Representative**
Date of Sampling	:	01/06/2022 To 28/06/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-3)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	07/06/2022 To 30/06/2022
Ambient Average Temperature (°C)	:	37
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	**Hot**

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
01/06/2022	09:25	1.11	1.998	BDL	BDL	BDL
06/06/2022	09:35	1.12	2.014	BDL	BDL	BDL
09/06/2022	10:05	1.11	1.697	BDL	BDL	BDL
13/06/2022	**10:10**	**1.10**	**1.426**	**BDL**	**BDL**	**BDL**
16/06/2022	11:20	1.12	1.718	BDL	BDL	BDL
20/06/2022	10:50	1.11	2.341	BDL	BDL	BDL
23/06/2022	10:35	1.12	1.598	BDL	BDL	BDL
27/06/2022	10:20	1.12	1.749	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			**20**	**06**	**01**	**01**
Test Method			**AAS Method**	**AAS Method**	**IS:5182 (P-12)**	**IS:5182 (P-22)**

Notes:

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5. The test samples will be disposed of after two weeks from the date of issue of test report, unless until specified by the customer

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-080722-04	08/07/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	01/06/2022 To 28/06/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-4)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	07/06/2022 To 30/06/2022
Ambient Average Temperature (°C)	:	37
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
01/06/2022	09:40	1.12	1.749	BDL	BDL	BDL
06/06/2022	09:50	1.11	1.668	BDL	BDL	BDL
09/06/2022	10:20	1.12	2.145	BDL	BDL	BDL
13/06/2022	10:25	1.12	1.687	BDL	BDL	BDL
16/06/2022	11:40	1.11	2.031	BDL	BDL	BDL
20/06/2022	11:05	1.10	1.652	BDL	BDL	BDL
23/06/2022	10:55	1.11	1.811	BDL	BDL	BDL
27/06/2022	10:35	1.11	2.113	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only
2. Responsibility of the Laboratory is limited to the invoiced amount only.
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4. This test report will not be used for any publicity/legal purpose
5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-080722-05	08/07/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	**Lab Representative**
Date of Sampling	:	01/06/2022 To 28/06/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-5)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	07/06/2022 To 30/06/2022
Ambient Average Temperature (°C)	:	37
Average Flow Rate of SPM (m^3/min.)	:	1.11
Weather Condition	:	**Hot**

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m³	Arsenic (as As), ng/m³	Benzo(a)pyrene (as BAP*), ng/m³	Lead (as Pb), µg/ m³
01/06/2022	09:55	1.12	1.845	BDL	BDL	BDL
06/06/2022	10:05	1.11	1.625	BDL	BDL	BDL
09/06/2022	10:40	1.12	1.947	BDL	BDL	BDL
13/06/2022	10:40	1.12	2.112	BDL	BDL	BDL
16/06/2022	12:10	1.11	2.054	BDL	BDL	BDL
20/06/2022	11:20	1.10	1.746	BDL	BDL	BDL
23/06/2022	11:15	1.11	1.596	BDL	BDL	BDL
27/06/2022	10:50	1.12	1.711	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
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4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	**AAQ-080722-06**	08/07/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	01/06/2022 To 28/06/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-6)
Sampling Plan &Procedure		SOP-AAQ/08
Analysis Duration		07/06/2022 To 30/06/2022
Ambient Average Temperature (°C)	:	37
Average Flow Rate of SPM (m^3/min.)		1.12
Weather Condition		Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter								
			Ni ng/m^3	As ng/m^3	BaP*, ng/m^3	Pb µg/m^3	$PM_{2.5}$ µg/m^3	PM_{10} µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO* mg/m^3
01/06/2022	10:10	1.11	1.632	BDL	BDL	BDL	50.3	106.5	15.9	20.1	0.914
06/06/2022	10:20	1.12	1.745	BDL	BDL	BDL	46.5	89.6	13.2	14.7	0.597
09/06/2022	09:45	1.12	1.911	BDL	BDL	BDL	49.8	98.4	14.9	17.6	0.796
13/06/2022	09:10	1.11	2.062	BDL	BDL	BDL	52.4	115.4	13.2	15.9	0.658
16/06/2022	10:20	1.11	1.749	BDL	BDL	BDL	47.6	87.8	12.3	16.6	0.812
20/06/2022	09:55	1.10	2.131	BDL	BDL	BDL	53.6	126.5	15.6	18.4	0.847
23/06/2022	09:45	1.12	1.854	BDL	BDL	BDL	49.1	91.8	11.7	15.1	0.741
27/06/2022	09:25	1.11	1.687	BDL	BDL	BDL	52.4	132.0	14.8	15.9	0.763
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01	60	100	80	80	04
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)	Gravimetric	IS:5182 (P-23)	IS:5182 (P-2)	IS:5182 (P-6)	IS:5182 (P-10)

Notes:

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-080822-01	08/08/2022

Issued To: HPCL- Mittal Energy Limited, Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	01/07/2022 To 26/07/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-1)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	04/07/2022 To 29/07/2022
Ambient Average Temperature (°C)	:	38
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
01/07/2022	09:30	1.12	1.265	BDL	BDL	BDL
04/07/2022	10:20	1.11	1.426	BDL	BDL	BDL
07/07/2022	09:30	1.10	2.031	BDL	BDL	BDL
11/07/2022	09:20	1.11	1.954	BDL	BDL	BDL
14/07/2022	10:15	1.12	1.720	BDL	BDL	BDL
18/07/2022	09:35	1.10	2.116	BDL	BDL	BDL
21/07/2022	10:10	1.11	1.695	BDL	BDL	BDL
25/07/2022	10:15	1.10	1.853	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			**AAS Method**	**AAS Method**	**IS:5182 (P-12)**	**IS:5182 (P-22)**

Notes:

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-080822-02	08/08/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	01/07/2022 To 26/07/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-2)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	04/07/2022 To 29/07/2022
Ambient Average Temperature (°C)	:	38
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
01/07/2022	09:55	1.11	1.841	BDL	BDL	BDL
04/07/2022	10:35	1.10	2.031	BDL	BDL	BDL
07/07/2022	09:50	1.11	1.694	BDL	BDL	BDL
11/07/2022	09:40	1.10	1.821	BDL	BDL	BDL
14/07/2022	10:30	1.12	2.113	BDL	BDL	BDL
18/07/2022	09:50	1.11	1.659	BDL	BDL	BDL
21/07/2022	10:25	1.10	1.475	BDL	BDL	BDL
25/07/2022	10:30	1.11	1.364	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-080822-03	08/08/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	01/07/2022 To 26/07/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-3)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	04/07/2022 To 29/07/2022
Ambient Average Temperature (°C)	:	38
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition		Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
01/07/2022	10:15	1.10	1.252	BDL	BDL	BDL
04/07/2022	11:00	1.11	1.554	BDL	BDL	BDL
07/07/2022	10:10	1.10	1.609	BDL	BDL	BDL
11/07/2022	10:05	1.11	2.031	BDL	BDL	BDL
14/07/2022	10:50	1.11	2.116	BDL	BDL	BDL
18/07/2022	10:05	1.12	1.742	BDL	BDL	BDL
21/07/2022	10:45	1.10	1.559	BDL	BDL	BDL
25/07/2022	10:50	1.11	1.364	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-080822-04	08/08/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	01/07/2022 To 26/07/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-4)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	04/07/2022 To 29/07/2022
Ambient Average Temperature (°C)	:	38
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
01/07/2022	10:30	1.11	1.625	BDL	BDL	BDL
04/07/2022	11:15	1.10	1.845	BDL	BDL	BDL
07/07/2022	10:20	1.11	1.632	BDL	BDL	BDL
11/07/2022	10:15	1.11	2.135	BDL	BDL	BDL
14/07/2022	11:05	1.10	1.885	BDL	BDL	BDL
18/07/2022	10:20	1.11	1.674	BDL	BDL	BDL
21/07/2022	11:10	1.10	1.596	BDL	BDL	BDL
25/07/2022	11:05	1.11	2.041	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-080822-05	08/08/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	Lab Representative
Date of Sampling	01/07/2022 To 26/07/2022
Sample Description	Ambient Air Quality Monitoring Station (AAQMS-5)
Sampling Plan &Procedure	SOP-AAQ/08
Analysis Duration	04/07/2022 To 29/07/2022
Ambient Average Temperature (°C)	38
Average Flow Rate of SPM (m^3/min.)	1.12
Weather Condition	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP"), ng/m^3	Lead (as Pb), µg/ m^3
01/07/2022	10:45	1.11	1.502	BDL	BDL	BDL
04/07/2022	11:30	1.10	1.649	BDL	BDL	BDL
07/07/2022	10:35	1.11	1.482	BDL	BDL	BDL
11/07/2022	10:30	1.12	1.629	BDL	BDL	BDL
14/07/2022	11:20	1.11	2.136	BDL	BDL	BDL
18/07/2022	10:40	1.10	1.252	BDL	BDL	BDL
21/07/2022	11:20	1.11	1.446	BDL	BDL	BDL
25/07/2022	11:20	1.11	2.195	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only
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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-080822-06	08/08/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	01/07/2022 To 26/07/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-6)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	04/07/2022 To 29/07/2022
Ambient Average Temperature (°C)	:	38
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Hot

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter								
			Ni ng/m³	As ng/m³	BaP*, ng/m³	Pb µg/m³	$PM_{2.5}$ µg/m³	PM_{10} µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO* mg/m³
01/07/2022	09:05	1.12	1.652	BDL	BDL	BDL	45.3	78.8	10.8	15.7	0.698
04/07/2022	10:00	1.11	1.248	BDL	BDL	BDL	47.6	80.3	13.3	16.5	0.746
07/07/2022	09:15	1.11	1.746	BDL	BDL	BDL	44.7	73.4	9.8	15.2	0.712
11/07/2022	09:10	1.10	2.035	BDL	BDL	BDL	49.6	90.7	10.4	16.1	0.769
14/07/2022	09:55	1.12	1.658	BDL	BDL	BDL	51.2	98.4	13.9	18.4	0.842
18/07/2022	09:15	1.11	1.459	BDL	BDL	BDL	50.7	89.7	12.3	17.9	0.801
21/07/2022	09:45	1.10	2.136	BDL	BDL	BDL	51.6	93.2	10.9	14.4	0.684
25/07/2022	09:55	1.11	1.964	BDL	BDL	BDL	49.5	84.1	12.7	15.2	0.746
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01	60	100	80	80	04
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)	Gravimetric	IS:5182 (P-23)	IS:5182 (P-2)	IS:5182 (P-6)	IS:5182 (P-10)

Notes:

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4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed off after two weeks from the date of issue of test report, unless otherwise specified by the customer.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-020922-34	02/09/2022

Issued To: HPCL- Mittal Energy Limited, Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By : Lab Representative
Date of Sampling : 01/08/2022To 26/08/2022
Sample Description : Ambient Air Quality Monitoring Station (AAQMS-1)
Sampling Plan &Procedure : SOP-AAQ/08
Analysis Duration : 08/08/2022 To 31/08/2022
Ambient Average Temperature (°C) : 28
Average Flow Rate of SPM (m^3/min.) : 1.12
Weather Condition : Normal

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP), ng/m^3	Lead (as Pb), µg/ m^3
01/08/2022	9:30	1.11	1.036	BDL	BDL	BDL
04/08/2022	10:15	1.12	1.234	BDL	BDL	BDL
08/08/2022	10:20	1.10	2.116	BDL	BDL	BDL
11/08/2022	11:15	1.11	1.859	BDL	BDL	BDL
15/08/2022	10:40	1.12	2.310	BDL	BDL	BDL
18/08/2022	10:30	1.12	1.397	BDL	BDL	BDL
22/08/2022	09:20	1.11	1.562	BDL	BDL	BDL
25/08/2022	09:40	1.10	1.647	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-020922-35	02/09/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo
Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	01/08/2022 To 26/08/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-2)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	08/08/2022 To 31/08/2022
Ambient Average Temperature (°C)	:	28
Average Flow Rate of SPM (m^3/min.)	:	1.11
Weather Condition	:	Normal

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP), ng/m^3	Lead (as Pb), µg/ m^3
01/08/2022	9:50	1.10	1.704	BDL	BDL	BDL
04/08/2022	10:30	1.11	2.116	BDL	BDL	BDL
08/08/2022	10:35	1.12	1.553	BDL	BDL	BDL
11/08/2022	11:40	1.11	1.795	BDL	BDL	BDL
15/08/2022	11:00	1.11	1.603	BDL	BDL	BDL
18/08/2022	10:45	1.12	1.415	BDL	BDL	BDL
22/08/2022	09:35	1.11	1.965	BDL	BDL	BDL
25/08/2022	09:55	1.12	2.118	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed of after two weeks from the date of issue of test report, unless until specified by the customer.

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MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB Recognized Laboratory

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-020922-36	02/09/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo
Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	01/08/2022 To 26/08/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-3)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	08/08/2022 To 31/08/2022
Ambient Average Temperature (°C)	:	28
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Normal

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
01/08/2022	10:10	1.11	1.306	BDL	BDL	BDL
04/08/2022	10:50	1.12	1.651	BDL	BDL	BDL
08/08/2022	11:00	1.11	1.552	BDL	BDL	BDL
11/08/2022	12:05	1.12	1.306	BDL	BDL	BDL
15/08/2022	11:15	1.11	1.495	BDL	BDL	BDL
18/08/2022	10:55	1.12	1.365	BDL	BDL	BDL
22/08/2022	09:45	1.11	1.574	BDL	BDL	BDL
25/08/2022	10:10	1.12	1.619	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
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3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed of after two weeks from the date of issue of test report, unless until specified by the customer.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-020922-37	02/09/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	01/08/2022 To 26/08/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-4)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	08/08/2022 To 31/08/2022
Ambient Average Temperature (°C)	:	28
Average Flow Rate of SPM (m^3/min.)	:	1.11
Weather Condition	:	Normal

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
01/08/2022	10:20	1.12	1.629	BDL	BDL	BDL
04/08/2022	11:05	1.11	1.715	BDL	BDL	BDL
08/08/2022	11:15	1.12	1.524	BDL	BDL	BDL
11/08/2022	12:30	1.11	1.632	BDL	BDL	BDL
15/08/2022	11:35	1.11	2.136	BDL	BDL	BDL
18/08/2022	11:10	1.12	2.154	BDL	BDL	BDL
22/08/2022	10:00	1.12	1.881	BDL	BDL	BDL
25/08/2022	10:25	1.11	1.965	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
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4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-020922-38	02/09/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	01/08/2022 To 26/08/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-5)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	08/08/2022 To 31/08/2022
Ambient Average Temperature (°C)	:	28
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Normal

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
01/08/2022	10:35	1.12	1.623	BDL	BDL	BDL
04/08/2022	11:20	1.11	1.524	BDL	BDL	BDL
08/08/2022	11:30	1.12	1.498	BDL	BDL	BDL
11/08/2022	12:50	1.11	1.302	BDL	BDL	BDL
15/08/2022	11:55	1.12	1.102	BDL	BDL	BDL
18/08/2022	11:30	1.11	1.336	BDL	BDL	BDL
22/08/2022	10:20	1.12	1.497	BDL	BDL	BDL
25/08/2022	10:40	1.11	1.529	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only
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4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-020922-39	02/09/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo
Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	01/08/2022 To 26/08/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-6)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	08/08/2022 To 31/08/2022
Ambient Average Temperature (°C)	:	28
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Normal

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter								
			Ni ng/m^3	As ng/m^3	BaP*, ng/m^3	Pb µg/m^3	$PM_{2.5}$ µg/m^3	PM_{10} µg/m^3	SO_2 µg/m^3	NO_2 µg/m^3	CO* mg/m^3
01/08/2022	09:15	1.12	1.259	BDL	BDL	BDL	44.3	89.4	9.4	16.4	0.712
04/08/2022	09:55	1.11	1.324	BDL	BDL	BDL	41.5	80.2	8.6	15.1	0.635
08/08/2022	10:00	1.12	1.405	BDL	BDL	BDL	51.6	93.2	11.9	17.5	0.842
11/08/2022	10:50	1.12	1.628	BDL	BDL	BDL	42.9	96.4	10.9	19.3	0.846
15/08/2022	10:20	1.11	1.745	BDL	BDL	BDL	48.2	89.5	10.6	15.4	0.702
18/08/2022	10:15	1.12	1.611	BDL	BDL	BDL	47.6	94.5	12.3	19.8	0.769
22/08/2022	09:00	1.11	1.532	BDL	BDL	BDL	49.5	93.6	10.3	13.2	0.618
25/08/2022	09:25	1.11	1.402	BDL	BDL	BDL	50.2	90.9	11.4	18.8	0.698
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01	60	100	80	80	04
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)	Gravimetric	IS:5182 (P-23)	IS:5182 (P-2)	IS:5182 (P-6)	IS:5182 (P-10)

Notes:

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-051022-01	05/10/2022

Issued To: HPCL- Mittal Energy Limited, Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	01/09/2022To 27/09/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-1)
Sampling Plan & Procedure	:	SOP-AAQ/08
Analysis Duration	:	03/09/2022 To 30/09/2022
Ambient Average Temperature (°C)	:	32
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Normal

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP), ng/m^3	Lead (as Pb), µg/ m^3
01/09/2022	09:20	1.12	1.325	BDL	BDL	BDL
05/09/2022	09:40	1.11	1.412	BDL	BDL	BDL
08/09/2022	09:45	1.12	2.036	BDL	BDL	BDL
12/09/2022	10:20	1.12	1.954	BDL	BDL	BDL
15/09/2022	10:20	1.11	1.548	BDL	BDL	BDL
19/09/2022	10:20	1.12	2.110	BDL	BDL	BDL
22/09/2022	10:00	1.11	2.195	BDL	BDL	BDL
26/09/2022	09:50	1.11	1.699	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

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NOIDA TESTING LABORATORIES

Laboratory : GT-20, Sector-117, NOIDA, Gautam Budh Nagar - 201316

Branch Office : IP-2, Haridwar, Uttarakhand | Gayatri Nagar, Kathgodam, Haldwani, Uttarakhand

E.: noida.laboratory@gmail.com, info@noidalabs.com **W.:** www.noidalabs.com

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-051022-02	05/10/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	01/09/2022 To 27/09/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-2)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	03/09/2022 To 30/09/2022
Ambient Average Temperature (°C)	:	32
Average Flow Rate of SPM (m^3/min.)	:	1.12
Weather Condition	:	Normal

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m³	Arsenic (as As), ng/m³	Benzo(a)pyrene (as BAP), ng/m³	Lead (as Pb), µg/ m³
01/09/2022	09:35	1.11	1.326	BDL	BDL	BDL
05/09/2022	09:55	1.10	1.594	BDL	BDL	BDL
08/09/2022	09:55	1.12	1.964	BDL	BDL	BDL
12/09/2022	10:35	1.11	2.016	BDL	BDL	BDL
15/09/2022	10:35	1.11	2.114	BDL	BDL	BDL
19/09/2022	10:45	1.10	1.846	BDL	BDL	BDL
22/09/2022	10:15	1.12	1.746	BDL	BDL	BDL
26/09/2022	10:05	1.10	1.623	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
2. Responsibility of the Laboratory is limited to the invoiced amount only.
3. This test report will not be generated again, either wholly or in part, without prior written permission of the laboratory.
4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed of after two weeks from the date of issue of test report, unless until [illegible] customer.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-051022-03	05/10/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Taiwandi Sabo Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	01/09/2022 To 27/09/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-3)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	03/09/2022 To 30/09/2022
Ambient Average Temperature (°C)	:	32
Average Flow Rate of SPM (m^3/min.)	:	1.11
Weather Condition	:	Normal

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(α)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
01/09/2022	09:45	1.12	1.203	BDL	BDL	BDL
05/09/2022	10:10	1.10	1.514	BDL	BDL	BDL
08/09/2022	10:10	1.11	1.695	BDL	BDL	BDL
12/09/2022	10:45	1.10	2.315	BDL	BDL	BDL
15/09/2022	11:00	1.10	2.014	BDL	BDL	BDL
19/09/2022	11:05	1.11	1.745	BDL	BDL	BDL
22/09/2022	10:30	1.12	1.625	BDL	BDL	BDL
26/09/2022	10:25	1.10	1.552	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
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4. This test report will not be used for any publicity/legal purpose.
5. The test samples will be disposed of after two weeks from the date of issue of test report, unless otherwise specified by the customer.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-051022-04	05/10/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo
Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	01/09/2022 To 27/09/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-4)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	03/09/2022 To 30/09/2022
Ambient Average Temperature (°C)	:	32
Average Flow Rate of SPM (m^3/min.)	:	1.11
Weather Condition	:	Normal

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
01/09/2022	10:00	1.11	1.496	BDL	BDL	BDL
05/09/2022	10:20	1.12	1.715	BDL	BDL	BDL
08/09/2022	10:25	1.11	2.064	BDL	BDL	BDL
12/09/2022	10:55	1.10	1.897	BDL	BDL	BDL
15/09/2022	11:15	1.11	2.114	BDL	BDL	BDL
19/09/2022	11:20	1.10	2.069	BDL	BDL	BDL
22/09/2022	10:45	1.12	1.658	BDL	BDL	BDL
26/09/2022	10:40	1.11	1.549	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

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5. The test samples will be disposed off after two weeks from the date of issue of test report, unless until specified by the customer.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-051022-05	05/10/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo
Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By	:	Lab Representative
Date of Sampling	:	01/09/2022 To 27/09/2022
Sample Description	:	Ambient Air Quality Monitoring Station (AAQMS-5)
Sampling Plan &Procedure	:	SOP-AAQ/08
Analysis Duration	:	03/09/2022 To 30/09/2022
Ambient Average Temperature (°C)	:	32
Average Flow Rate of SPM (m^3/min.)	:	1.11
Weather Condition		Normal

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m^3	Arsenic (as As), ng/m^3	Benzo(a)pyrene (as BAP*), ng/m^3	Lead (as Pb), µg/ m^3
01/09/2022	10:20	1.12	1.944	BDL	BDL	BDL
05/09/2022	10:35	1.11	2.134	BDL	BDL	BDL
08/09/2022	10:35	1.10	1.745	BDL	BDL	BDL
12/09/2022	11:15	1.10	1.652	BDL	BDL	BDL
15/09/2022	11:30	1.11	1.362	BDL	BDL	BDL
19/09/2022	11:35	1.12	2.014	BDL	BDL	BDL
22/09/2022	11:00	1.11	1.746	BDL	BDL	BDL
26/09/2022	10:55	1.11	2.064	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-051022-06	05/10/2022

Issued To: HPCL- Mittal Energy Limited , Village –Phullakhari , Taluka Talwandi Sabo
Distt. Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Drawn By : Lab Representative
Date of Sampling : 01/09/2022 To 27/09/2022
Sample Description : Ambient Air Quality Monitoring Station (AAQMS-6)
Sampling Plan &Procedure : SOP-AAQ/08
Analysis Duration : 03/09/2022 To 30/09/2022
Ambient Average Temperature (°C) : 32
Average Flow Rate of SPM (m^3/min.) : 1.11
Weather Condition : Normal

Date of Sampling	Time	AFR of RDS (m3/min)	Parameter								
			Ni ng/m³	As ng/m³	BaP, ng/m³	Pb µg/m³	$PM_{2.5}$ µg/m³	PM_{10} µg/m³	SO_2 µg/m³	NO_2 µg/m³	CO mg/m³
01/09/2022	09:00	1.11	1.362	BDL	BDL	BDL	40.2	91.3	8.5	15.4	.807
05/09/2022	09:20	1.12	1.542	BDL	BDL	BDL	43.6	90.7	9.6	17.5	.763
08/09/2022	09:30	1.11	1.958	BDL	BDL	BDL	45.1	93.6	10.5	19.5	.864
12/09/2022	10:00	1.12	1.025	BDL	BDL	BDL	41.6	86.3	13.8	18.4	.812
15/09/2022	10:00	1.10	1.116	BDL	BDL	BDL	47.9	97.4	10.7	15.2	.654
19/09/2022	09:50	1.11	1.394	BDL	BDL	BDL	42.1	79.4	11.3	14.2	.698
22/09/2022	11:20	1.10	1.501	BDL	BDL	BDL	46.2	89.2	12.3	16.5	.742
26/09/2022	09:25	1.11	1.459	BDL	BDL	BDL	44.6	96.6	7.5	16.3	.763
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01	60	100	80	80	04
Test Method			AAS Method	AAS Method	IS:5182 (P-12)	IS:5182 (P-22)	Gravimetric	IS:5182 (P-23)	IS:5182 (P-2)	IS:5182 (P-6)	IS:5182 (P-10)

Notes:

1. The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
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4. This test report will not be used for any publicity/legal purpose.
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ANNEXURE-II

NOIDA TESTING LABORATORIES

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Noise	AN-090522-09	09/05/2022
Issued to	HPCL-Mittal Energy Limited, Village-Phullokhari , Taluka – TalwandiSaboo, Distt. Bhatinda(Punjab) India	
Date of Sampling & Time	26/04/2022	
Name of the Location	HMEL Refinery	

Sr. No.	Location	Test Result dB(A) Day Time	Test Result dB(A) Night Time
1	Near Refinery Main Gate	71.3	60.2
2	Near Fire Water Reservoir	68.4	62.3
3	Near Road Crude Oil Tanks	69.2	61.7
4	Near ETP and Flare	70.8	60.9
5	Near Storm Water Pond East Side	68.1	59.8
6	Near Sulphur Yard South East Side	66.9	56.2
7	Near Rail Loading Dispatch South East Side	70.8	60.7
8	Near CPP North East Side	69.3	61.8
9	Near Poly Propylene Dispatch Area	67.5	60.9
10	Near Ecological Pond Area	65.1	58.7
Permissible Limit in *dB(A) Leq For Industrial Area		75 dB(A)	70 dB(A)

*dB (A) Leq denotes the time weighted average of the level of sound in decibel on scale 'A' which is relatable to human hearing

CPCB – Central Pollution Control Board

Note: The Noise Ambient Air Quality Standards are given for reference

Area Code	Category of Area/Zone	Limits in dB(A) Leq	
		Day Time	Night Time
(A)	Industrial Area	75	70
(B)	Commercial Area	65	55
(C)	Residential Area	55	45
(D)	Silence Zone	50	40

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Noise	AN-030622-10	03/06/2022
Issued to	HPCL-Mittal Energy Limited, Village-Phullokhari , Taluka –Talwandi Saboo, Distt. Bhatinda(Punjab) India	
Date of Sampling & Time	06/05/2022	
Name of the Location	HMEL Refinery	

Sr. No.	Location	Test Result dB(A) Day Time	Test Result dB(A) Night Time
1	Near Refinery Main Gate	70.5	60.2
2	Near Fire Water Reservoir	66.4	58.6
3	Near Road Crude Oil Tanks	70.1	61.4
4	Near ETP and Flare	68.5	60.8
5	Near Storm Water Pond East Side	67.9	57.6
6	Near Sulphur Yard South East Side	70.3	60.1
7	Near Rail Loading Dispatch South East Side	67.2	57.8
8	Near CPP North East Side	65.3	60.3
9	Near Poly Propylene Dispatch Area	71.7	61.2
10	Near Ecological Pond Area	68.2	58.7
Permissible Limit in *dB(A) Leq For Industrial Area		75 dB(A)	70 dB(A)

*dB (A) Leq denotes the time weighted average of the level of sound in decibel on scale 'A' which is relatable to human hearing.

CPCB - Central Pollution Control Board

Note: The Noise Ambient Air Quality Standards are given for reference

Area Code	Category of Area/Zone	Limits in dB(A) Leq	
		Day Time	Night Time
(A)	Industrial Area	75	70
(B)	Commercial Area	65	55
(C)	Residential Area	55	45
(D)	Silence Zone	50	40

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Noise	AN-080722-09	08/07/2022
Issued to	**HPCL-Mittal Energy Limited, Village-Phullokhari , Taluka – TalwandiSaboo, Distt. Bhatinda(Punjab) India**	
Date of Sampling & Time	08/06/2022	
Name of the Location	**HMEL Refinery**	

Sr. No.	Location	Test Result dB(A) Day Time	Test Result dB(A) Night Time
1	Near Refinery Main Gate	70.1	59.8
2	Near Fire Water Reservoir	69.5	61.2
3	Near Road Crude Oil Tanks	70.4	60.5
4	Near ETP and Flare	68.5	61.3
5	Near Storm Water Pond East Side	71.2	58.9
6	Near Sulphur Yard South East Side	69.3	59.6
7	Near Rail Loading Dispatch South East Side	70.5	62.1
8	Near CPP North East Side	68.7	60.1
9	Near Poly Propylene Dispatch Area	66.3	59.6
10	Near Ecological Pond Area	66.1	58.1
Permissible Limit in *dB(A) Leq For Industrial Area		**75 dB(A)**	**70 dB(A)**

*dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.

CPCB – Central Pollution Control Board

Note: The Noise Ambient Air Quality Standards are given for reference

Area Code	Category of Area/Zone	Limits in dB(A) Leq	
		Day Time	Night Time
(A)	Industrial Area	75	70
(B)	Commercial Area	65	55
(C)	Residential Area	55	45
(D)	Silence Zone	50	40

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Noise	AN-080822-09	08/08/2022
Issued to	HPCL-Mittal Energy Limited, Village-Phullokhari , Taluka – TalwandiSaboo, Distt. Bhatinda(Punjab) India	
Date of Sampling & Time	07/07/2022	
Name of the Location	HMEL Refinery	

Sr. No.	Location	Test Result dB(A) Day Time	Test Result dB(A) Night Time
1	Near Refinery Main Gate	71.3	58.7
2	Near Fire Water Reservoir	65.4	56.1
3	Near Road Crude Oil Tanks	71.5	60.7
4	Near ETP and Flare	69.9	58.6
5	Near Storm Water Pond East Side	70.1	55.3
6	Near Sulphur Yard South East Side	68.5	62.4
7	Near Rail Loading Dispatch South East Side	69.9	61.3
8	Near CPP North East Side	64.2	60.5
9	Near Poly Propylene Dispatch Area	66.5	58.7
10	Near Ecological Pond Area	63.4	56.9
Permissible Limit in *dB(A) Leq For Industrial Area		75 dB(A)	70 dB(A)

*dB (A) Leq denotes the time weighted average of the level of sound in decibel on scale 'A' which is relatable to human hearing.

CPCB : Central Pollution Control Board

Note: The Noise Ambient Air Quality Standards are given for reference

Area Code	Category of Area/Zone	Limits in dB(A) Leq	
		Day Time	Night Time
(A)	Industrial Area	75	70
(B)	Commercial Area	65	55
(C)	Residential Area	55	45
(D)	Silence Zone	50	40

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Noise	AN-020922-31	02/09/2022
Issued to	**HPCL-Mittal Energy Limited, Village-Phullokhari , Taluka –Talwandi Saboo, Distt. Bhatinda(Punjab) India**	
Date of Sampling & Time	05/08/2022	
Name of the Location	**HMEL Refinery**	

Sr. No.	Location	Test Result dB(A) Day Time	Test Result dB(A) Night Time
1	Near Refinery Main Gate	70.3	56.1
2	Near Fire Water Reservoir	64.1	58.7
3	Near Road Crude Oil Tanks	70.9	57.6
4	Near ETP and Flare	68.5	60.2
5	Near Storm Water Pond East Side	72.3	55.6
6	Near Sulphur Yard South East Side	65.4	57.1
7	Near Rail Loading Dispatch South East Side	68.2	56.9
8	Near CPP North East Side	63.2	60.2
9	Near Poly Propylene Dispatch Area	64.5	57.4
10	Near Ecological Pond Area	62.9	55.3
Permissible Limit in *dB(A) Leq For Industrial Area		75 dB(A)	70 dB(A)

*dB(A) Leq denotes the 'time weighted average of the level of sound in decibels on scale A' which is suitable to human hearing.

CPCB – Central Pollution Control Board

Note: The Noise Ambient Air Quality Standards are given for reference

Area Code	Category of Area/Zone	Limits in dB(A) Leq	
		Day Time	Night Time
(A)	Industrial Area	75	70
(B)	Commercial Area	65	55
(C)	Residential Area	55	45
(D)	Silence Zone	50	40

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Noise	AN-051022-09	05/10/2022
Issued to	HPCL-Mittal Energy Limited, Village-Phullokhari , Taluka – TalwandiSaboo, Distt. Bhatinda(Punjab) India	
Date of Sampling & Time	02/09/2022	
Name of the Location	HMEL Refinery	

Sr. No.	Location	Test Result dB(A) Day Time	Test Result dB(A) Night Time
1	Near Refinery Main Gate	69.2	55.3
2	Near Fire Water Reservoir	70.2	56.9
3	Near Road Crude Oil Tanks	71.5	60.2
4	Near ETP and Flare	68.5	58.4
5	Near Storm Water Pond East Side	72.3	55.2
6	Near Sulphur Yard South East Side	69.1	57.3
7	Near Rail Loading Dispatch South East Side	65.2	56.2
8	Near CPP North East Side	64.3	61.4
9	Near Poly Propylene Dispatch Area	66.9	59.8
10	Near Ecological Pond Area	61.2	54.3
Permissible Limit in *dB(A) Leq For Industrial Area		**75 dB(A)**	**70 dB(A)**

*dB (A) Leq denotes the time weighted average of the level of sound in decibel on scale 'A' which is suitable to human hearing.

CPCB – Central Pollution Control Board

Note: The Noise Ambient Air Quality Standards are given for reference

Area Code	Category of Area/Zone	Limits in dB(A) Leq	
		Day Time	Night Time
(A)	Industrial Area	75	70
(B)	Commercial Area	65	55
(C)	Residential Area	55	45
(D)	Silence Zone	50	40

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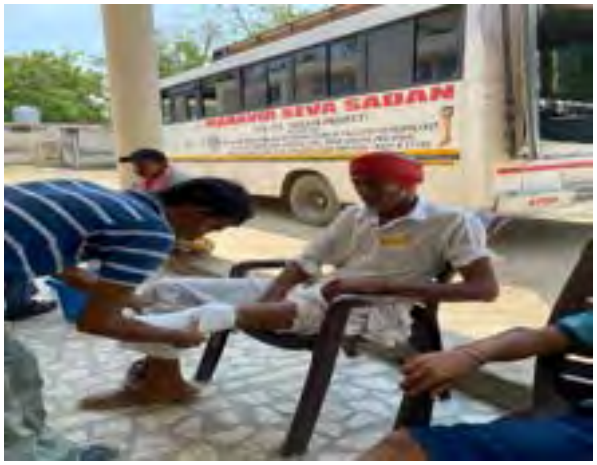
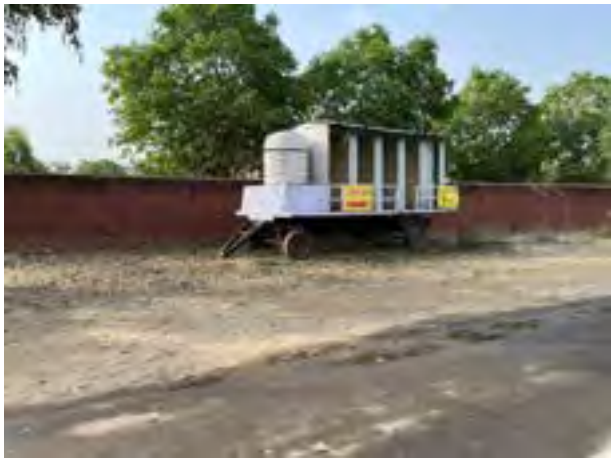
ANNEXURE-III

Annexure-III

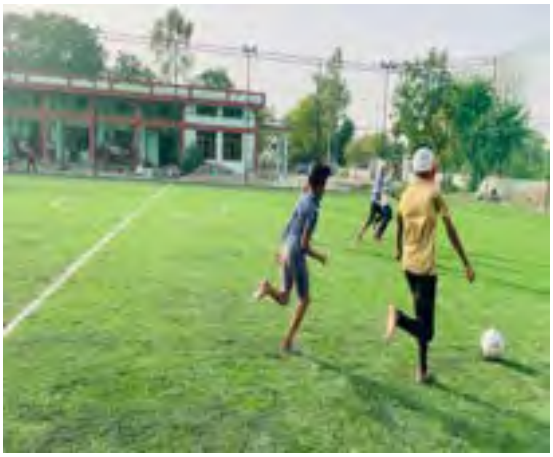
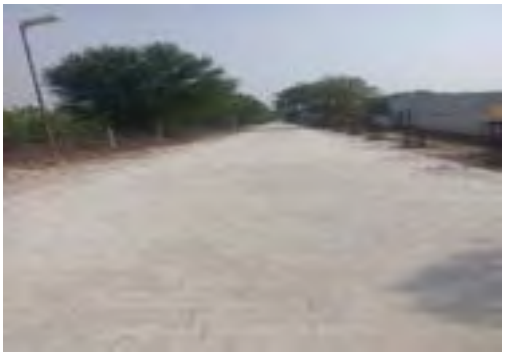
Activities undertaken for improving socio-economic condition in the surrounding areas from Apr'22 to Sep'2022		
CSR Pillars	**Beneficiaries**	**Remarks**
Community Healthcare & Hygiene	4182	Artificial Limbs and aids distribution Camp; Road cleaning and garbage disposal; Support of Mobile Toilets;
Livelihood and Sustainable Development	7621	Women Empowerment initiative; Animal Husbandry camps
Total	**11803**	

Photographs for activities undertaken for improving socio-economic condition in the surrounding areas from Apr'22 to Sep'2022

Livelihood and Sustainable Development (Women Entrepreneurship Development)	Livelihood and Sustainable Development (Animal Husbandry camp)
	
Community Healthcare & Hygiene (Artificial Limbs and aids distribution Camp)	**Community Healthcare & Hygiene (Support of Mobile Toilets)**
	

Activities undertaken for community welfare including eco-developmental measures in the surrounding areas from Apr'2022' to Sep'22		
CSR Pillars	**Beneficiaries**	**Remarks**
Community infrastructure & Environment	310	Infrastructure development of vicinity villages (Pavor block roads); Infrastructure development of sports facility; other basic amenities support to community institutions.
Education Development	8334	Career progression session for Govt. school students; Support providing education to special abled children; Drawing competition ; Distribution of Bicycle for Girls Students
Total	**8644**	

Photographs for activities undertaken for community welfare including eco-developmental measures

Education Development (Drawing competition in schools)	Education Development (Distribution of bicycles to Girls students)
	
Education Development (Career progression session)	**Community infrastructure & Environment (Infrastructure development of sports facility)**
	
Community infrastructure & Environment (Infrastructure development of Vicinity villages)	
	

ANNEXURE-IV

ANNEXURE-IV

Monthly Average AAQMS Data of GGSR for April'202 to Sept'2022							
Parameter		SO_2	NO_2	PM_{10}	$PM_{2.5}$	BENZENE	Ethyl BENZENE
Station No.	Month	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3
AAQMS 1	Apr-22	8.00	26.49	169.57	59.48	1.65	1.40
AAQMS 2		9.29	21.95	143.05	65.94	1.53	0.80
AAQMS 3		8.88	20.37	158.86	57.33	1.14	0.59
AAQMS 4		8.65	28.87	125.47	63.03	1.81	0.27
AAQMS 5		8.28	28.65	174.25	62.17	1.63	1.39
Min		8.00	20.37	125.47	57.33	1.14	0.27
Max		9.29	28.87	174.25	65.94	1.81	1.40
Avg		8.62	25.27	154.24	61.59	1.55	0.89
CPCB limit		**80**	**80**	**100**	**60**	**5**	
AAQMS 1	May-22	8.23	26.75	142.42	63.01	2.05	1.09
AAQMS 2		9.07	23.87	153.42	62.48	1.44	0.90
AAQMS 3		9.50	16.17	143.90	59.97	1.26	1.98
AAQMS 4		9.48	28.80	144.45	57.45	1.66	1.20
AAQMS 5		5.91	26.56	163.03	65.18	1.32	0.85
Min		5.91	16.17	142.42	57.45	1.26	0.85
Max		9.50	28.80	163.03	65.18	2.05	1.98
Avg		8.44	24.43	149.44	61.62	1.55	1.20
CPCB limit		**80**	**80**	**100**	**60**	**5**	
AAQMS 1	Jun-22	7.60	23.30	140.66	55.34	1.97	0.74
AAQMS 2		10.07	24.39	130.61	57.79	1.73	0.90
AAQMS 3		9.97	24.90	126.63	43.81	1.51	3.28
AAQMS 4		9.03	26.64	128.91	34.98	1.70	0.36
AAQMS 5		7.68	26.73	143.49	51.73	1.30	0.93
Min		7.60	23.30	126.63	34.98	1.30	0.36
Max		10.07	26.73	143.49	57.79	1.97	3.28
Avg		8.87	25.19	134.06	48.73	1.64	1.24
CPCB limit		**80**	**80**	**100**	**60**	**5**	
AAQMS 1	Jul-22	7.96	22.66	77.76	28.17	1.87	1.03
AAQMS 2		9.12	24.72	51.14	23.94	1.70	1.91
AAQMS 3		6.25	30.85	58.33	28.36	1.88	0.56
AAQMS 4		7.31	23.49	37.44	20.60	1.69	0.73
AAQMS 5		9.53	25.85	65.44	35.66	1.40	0.70
Min		6.25	22.66	37.44	20.60	1.40	0.56
Max		9.53	30.85	77.76	35.66	1.88	1.91
Avg		8.03	25.51	58.02	27.35	1.71	0.99
CPCB limit		**80**	**80**	**100**	**60**	**5**	
AAQMS 1	Aug-22	7.69	21.89	61.37	28.20	2.00	0.98
AAQMS 2		9.17	18.98	58.38	27.35	1.52	1.24
AAQMS 3		6.94	24.18	70.24	23.26	2.04	1.29
AAQMS 4		7.47	23.48	45.91	19.24	1.69	0.61
AAQMS 5		9.07	27.38	79.83	49.81	1.10	0.21
Min		6.94	18.98	45.91	19.24	1.10	0.21
Max		9.17	27.38	79.83	49.81	2.04	1.29
Avg		8.07	23.18	63.15	29.57	1.67	0.87
CPCB limit		**80**	**80**	**100**	**60**	**5**	
AAQMS 1	Sep-22	7.12	21.37	54.53	29.31	2.18	0.92
AAQMS 2		10.03	19.00	71.21	28.19	1.34	0.63
AAQMS 3		8.43	25.57	73.08	17.84	2.09	1.08
AAQMS 4		7.51	23.53	61.38	19.06	1.70	0.51
AAQMS 5		7.87	30.90	88.75	45.69	1.69	0.36
Min		7.12	19.00	54.53	17.84	1.34	0.36
Max		10.03	30.90	88.75	45.69	2.18	1.08
Avg		8.19	24.07	69.79	28.02	1.80	0.70
CPCB limit		**80**	**80**	**100**	**60**	**5**	

NOTE :

Particulate Matter (PM_{10}) is already higher in ambient air quality baseline data even before the start of the refinery operation. Its value varies from 252.5 µg/m^3 to 325.7 µg/m^3 as per baseline data for year 2010.

Particulate Matter ($PM_{2.5}$) is already higher in ambient air quality baseline data even before the start of the refinery operation. Its value varies from 101.8 µg/m^3 to 194 µg/m^3 as per baseline data for year 2010.

ANNEXURE-V

5.8.9/2007

Subject 21/06/2022

HMEL

Date: 1st June, 2022
Ref: HMEL-TS-40-ENV 937

To,
The Director,
Ministry of Environment, Forest & Climate Change,
Northern Regional Office,
Bays No. 24-25, Sector 31-A,
Dakshin Marg,
Chandigarh – 160 030.

प्राप्त किया/Received
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Min. of Environment, Forests & Climate Change
उत्तर क्षेत्रीय कार्यालय/Northern Regional Office
चण्डीगढ़/Chandigarh

Subject: Six Monthly EC Compliance Report (from Oct'2021 to Mar'2022) for Guru Gobind Singh Refinery at Phullokhari, Bathinda District, Punjab.

Ref: Environmental Clearance No. J-11011/24/98-IA II (dated 6th November, 1998
Environmental Clearance No. J-11011/27512007-IA II (I) date 16th July 2007
Environmental Clearance: F. No.: J-11011/275/2007 IA II (I) date 22nd June 2015 and
Environmental Clearance: F. No. J-11011/386/2016-IA-II (I) dated 7th August 2018

Dear Sir,

Please find enclosed six monthly compliance report (from Oct'2021 to Mar'2022) of Guru Gobind Singh Refinery (along with Annexures) on the environmental conditions stipulated by MoEF&CC.

Thanking you,

Very Truly Yours,

Jatinder Kumar
(DM-Technical Services)

21/6/2022

Cc: Regional Director, Central Pollution Control Board, First Floor, PIC-UP Building, Vibuti Khand, Gomtinagar, Lucknow, UP, Pin Code-226010 (India).
Cc: Punjab Pollution Control Board, Zonal Office, Street No. 12, Power House Road, Bathinda, Punjab.

Enclosure: Six monthly EC compliance report from Oct'2021 to Mar'2022 and one soft copy in CD of same report.
Annexure-I : Ambient air quality monitoring reports (from Oct'2021 to Mar'2022).
Annexure-II : Ambient noise quality monitoring reports (from Oct'2021 to Mar'2022).
Annexure-III: CSR activities carried out for social upliftment in the nearby village (from Oct'2021 to Mar'2022).
Annexure-IV: Online continuous ambient air quality monitoring data (from Oct'2021 to Mar'2022).
Annexure-V : Acknowledgement copy of last Six Monthly EC compliance report submitted to MoEF&CC, Regional Office, Chandigarh. For the period of Apr'2021 to Sep'2021.
Annexure- VI: Stack emission monitoring data (from Oct'2021 to Mar'2022).
Annexure-VII: Effluent analysis reports (from Oct'2021 to Mar'2022).
Annexure-VIII: Activities undertaken for improving socio-economic conditions of the surrounding villages.
Annexure-IX : Eco-developmental measures including community welfare measures in the project area
Annexure- X : Copy of Air CTO and Water CTO (Consent to Operate).
Annexure-XI : CER plan for BS-VI Fuel Quality Up-gradation Project.
Annexure-XII : Copy of the advertisement publishing the accordance of Environmental Clearance by MoEF&CC.

ANNEXURE-VI

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-11	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	15/04/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phuflokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	*HGU-I*
Stack Identification	-	Stack attached to HGU-I
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	70
Diameter of Stack (m)	-	2.6
Sampling Duration (Minutes)	-	23
Parameters Monitored	-	PM,NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	168
Ambient Temperature (^{0}C)	-	32
Average Stack Velocity (m/s)	-	14.74
Quantity of Emission (Nm^3/hr)	-	130211.6

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	34.5	42
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	66.9	330
3.	Carbon Monoxide (as CO)	IS-13270	45.7	140
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	174.5	693
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-12	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team
Date of Sampling	-	15/04/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	HGU-2
Stack Identification	-	Stack attached to HGU-2
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	70
Diameter of Stack (m)	-	2.6
Sampling Duration (Minutes)	-	24
Parameters Monitored	-	PM, NO_x, SO_2, CO, Ni & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	162
Ambient Temperature (°C)	-	34
Average Stack Velocity (m/s)	-	14.37
Quantity of Emission (Nm^3/hr)	-	90124.5

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	26.9	38
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	47.1	323
3.	Carbon Monoxide (as CO)	IS-13270	21.3	137
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	148.9	636
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-13	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team
Date of Sampling	-	15/04/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Talaka – Talwandi Sabou, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	Naphtha Super Heater
Stack Identification	-	Stack attached to Naphtha Super Heater
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	30
Diameter of Stack (m)	-	1.2
Sampling Duration (Minutes)	-	53
Parameters Monitored	-	PM,NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	324
Ambient Temperature (^{0}C)	-	34
Average Stack Velocity (m/s)	-	9.02
Quantity of Emission (Nm^3/hr)	-	17126.5

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	32.1	41
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	59.8	329
3.	Carbon Monoxide (as CO)	IS-13270	55.4	139
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	155.6	679
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-14	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	16/04/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	UB-2
Stack Identification	-	Stack attached to UB-2
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	100
Diameter of Stack (m)	-	3.1
Sampling Duration (Minutes)	-	25
Parameters Monitored	-	PM,NO_x, SO_2, CO, Ni & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	138
Ambient Temperature (°C)	-	36
Average Stack Velocity (m/s)	-	13.01
Quantity of Emission (Nm^3/hr)	-	194586.1

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	30.1	44
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	68.9	335
3.	Carbon Monoxide (as CO)	IS-13270	23.1	143
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	168.4	730
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-15	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	16/04/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Sabou, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	UB-3
Stack Identification	-	Stack attached to UB-3
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	100
Diameter of Stack (m)	-	3.1
Sampling Duration (Minutes)	-	24
Parameters Monitored	-	PM,NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	124
Ambient Temperature (°C)	-	36
Average Stack Velocity (m/s)	-	12.71
Quantity of Emission (Nm^3/hr)	-	120652.4

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	28.6	44
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	60.1	335
3.	Carbon Monoxide (as CO)	IS-13270	20.7	143
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	143.6	730
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-16	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	18/04/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	UB-5
Stack Identification	-	Stack attached to UB-5
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	130
Diameter of Stack (m)	-	3.25
Sampling Duration (Minutes)	-	25
Parameters Monitored	-	PM,NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	134
Ambient Temperature (^{0}C)	-	35
Average Stack Velocity (m/s)	-	12.68
Quantity of Emission (Nm^3/hr)	-	181506.7

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Pet Cock Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	23.6	30
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	51.4	300
3.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	229.8	400

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-17	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	18/04/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	UB-6
Stack Identification	-	Stack attached to UB-6
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	130
Diameter of Stack (m)	-	3.25
Sampling Duration (Minutes)	-	24
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	147
Ambient Temperature (^{0}C)	-	35
Average Stack Velocity (m/s)	-	13.66
Quantity of Emission (Nm^3/hr)	-	223104.9

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Pet Cock Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	21.1	30
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	60.3	300
3.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	174.5	400

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-18	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	19/04/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	NHT Reactor
Stack Identification	-	Stack attached to NHT Reactor
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	50
Diameter of Stack (m)	-	1.2
Sampling Duration (Minutes)	-	36
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	347
Ambient Temperature (^{0}C)	-	34
Average Stack Velocity (m/s)	-	13.60
Quantity of Emission (Nm^3/hr)	-	15649.2

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	35.7	39
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	50.1	324
3.	Carbon Monoxide (as CO)	IS-13270	118.9	137
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	131.5	645
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-19	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	19/04/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Sabon, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	CCR Heater
Stack Identification	-	Stack attached to CCR Heater
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	68
Diameter of Stack (m)	-	2.5
Sampling Duration (Minutes)	-	42
Parameters Monitored	-	PM, NO_x, SO_2, CO, Ni & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	187
Ambient Temperature (°C)	-	34
Average Stack Velocity (m/s)	-	8.52
Quantity of Emission (Nm^3/hr)	-	95128.2

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (In mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	30.1	40
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	120.3	326
3.	Carbon Monoxide (as CO)	IS-13270	154.6	138
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	149.8	639
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-20	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team
Date of Sampling	-	20/04/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	CDU/VDU
Stack Identification	-	Stack attached to CDU/VDU
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	85
Diameter of Stack (m)	-	4.3
Sampling Duration (Minutes)	-	24
Parameters Monitored	-	PM,NO_x, SO_2, CO,NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	193
Ambient Temperature (°C)	-	32
Average Stack Velocity (m/s)	-	14.90
Quantity of Emission (Nm^3/hr)	-	31026.5

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	26.5	40
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	105.4	326
3.	Carbon Monoxide (as CO)	IS-13270	50.2	138
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	164.9	659
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-21	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	21/04/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	DCU
Stack Identification	-	Stack attached to DCU
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	65
Diameter of Stack (m)	-	3.15
Sampling Duration (Minutes)	-	45
Parameters Monitored	-	PM, NO_x, SO_2, CO, Ni & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	184
Ambient Temperature (°C)	-	30
Average Stack Velocity (m/s)	-	8.14
Quantity of Emission (Nm^3/hr)	-	91656.7

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	24.9	43
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	98.6	334
3.	Carbon Monoxide (as CO)	IS-13270	45.7	142
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	168.5	719
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-22	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	21/04/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Sabo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	SRU 524
Stack Identification	-	Stack attached to SRU 524
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	100.0
Diameter of Stack (m)	-	2.0
Sampling Duration (Minutes)	-	28
Parameters Monitored	-	NO_x, SO_2, CO, H_2S
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	296
Ambient Temperature (°C)	-	29
Average Stack Velocity (m/s)	-	16.09
Quantity of Emission (Nm^3/hr)	-	84163

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Limits for 100 % Fuel Gas(mg/Nm^3)
1.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	31.2	250
2.	Carbon Monoxide (as CO)	IS-13270	48.9	100
3.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	96.7	NA
4.	Hydrogen Sulphide (as H2S)	IS:11255 (P-4)	2.5	10

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-23	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team
Date of Sampling	-	21/04/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phulokhari, Taluka – Talwandi Sabo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	SRU 525
Stack Identification	-	Stack attached to SRU 525
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	100.0
Diameter of Stack (m)	-	2.0
Sampling Duration (Minutes)	-	27
Parameters Monitored	-	NO_x, SO_2, CO, H_2S
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	279
Ambient Temperature (°C)	-	31
Average Stack Velocity (m/s)	-	15.92
Quantity of Emission (Nm^3/hr)	-	85126.4

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Limits for 100 % Fuel Gas(mg/Nm^3)
1.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	33.5	250
2.	Carbon Monoxide (as CO)	IS-13270	42.1	100
3.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	97.6	NA
4.	Hydrogen Sulphide (as H2S)	IS:11255 (P-4)	2.5	10

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-24	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team
Date of Sampling	-	22/04/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phullokhari , Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	DHDT-2
Stack Identification	-	Stack attached to DHDT-2
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	60
Diameter of Stack (m)	-	1.46
Sampling Duration (Minutes)	-	43
Parameters Monitored	-	PM,NO_x, SO_2, CO
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^oC)	-	178
Ambient Temperature (^oC)	-	28
Average Stack Velocity (m/s)	-	8.21
Quantity of Emission (Nm^3/hr)	-	71632.8

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Limits for 100 % Fuel Gas (mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	2.9	5
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	51.3	250
3.	Carbon Monoxide (as CO)	IS-13270	33.2	100
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	24.7	50

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-25	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	22/04/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Sabo, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	FCCU Heater
Stack Identification	-	Stack attached to FCCU Heater
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	80
Diameter of Stack (m)	-	1.75
Sampling Duration (Minutes)	-	48
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	189
Ambient Temperature (^{0}C)	-	32
Average Stack Velocity (m/s)	-	7.60
Quantity of Emission (Nm^3/hr)	-	30265.4

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	6.8	41
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	76.4	328
3.	Carbon Monoxide (as CO)	IS-13270	25.3	139
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	134.2	678
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-26	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	20/04/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	FCCU Regenerator
Stack Identification	-	Stack attached to FCCU Regenerator
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	42
Diameter of Stack (m)	-	3.3
Sampling Duration (Minutes)	-	27
Parameters Monitored	-	PM, NO_x, SO_2, CO, Ni & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	247
Ambient Temperature (°C)	-	33
Average Stack Velocity (m/s)	-	14.97
Quantity of Emission (Nm^3/hr)	-	143216.5

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	30.8	50
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	68.9	350
3.	Carbon Monoxide (as CO)	IS-13270	33.2	300
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	198.7	500
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	2

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-27	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	23/04/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phullokhari , Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	DHDT-1
Stack Identification	-	Stack attached to DHDT-1
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	75
Diameter of Stack (m)	-	2.25
Sampling Duration (Minutes)	-	42
Parameters Monitored	-	PM,NO_x, SO_2, CO,NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	179
Ambient Temperature (^{0}C)	-	28
Average Stack Velocity (m/s)	-	8.67
Quantity of Emission (Nm^3/hr)	-	71256.3

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	18.4	40
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	52.3	327
3.	Carbon Monoxide (as CO)	IS-13270	35.1	138
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	132.9	666
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-28	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	23/04/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	VGO Heater
Stack Identification	-	Stack attached to VGO Heater
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	65
Diameter of Stack (m)	-	2.25
Sampling Duration (Minutes)	-	38
Parameters Monitored	-	PM,NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	165
Ambient Temperature (^{0}C)	-	32
Average Stack Velocity (m/s)	-	9.06
Quantity of Emission (Nm^3/hr)	-	132685.5

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	29.8	41
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	105.6	328
3.	Carbon Monoxide (as CO)	IS-13270	43.2	139
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	168.5	676
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-29	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team
Date of Sampling	-	25/04/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Tahsil – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	HRSG-1
Stack Identification	-	Stack attached to HRSG-1
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	35
Diameter of Stack (m)	-	3.5
Sampling Duration (Minutes)	-	24
Parameters Monitored	-	PM,NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	172
Ambient Temperature (^{0}C)	-	28
Average Stack Velocity (m/s)	-	14.22
Quantity of Emission (Nm^3/hr)	-	186512.1

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	27.5	39
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	60.3	325
3.	Carbon Monoxide (as CO)	IS-13270	17.8	138
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	143.1	650
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-30	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team
Date of Sampling	-	25/04/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	HRSG-2
Stack Identification	-	Stack attached to HRSG-2
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	35
Diameter of Stack (m)	-	3.5
Sampling Duration (Minutes)	-	25
Parameters Monitored	-	PM,NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	176
Ambient Temperature (^{0}C)	-	31
Average Stack Velocity (m/s)	-	14.00
Quantity of Emission (Nm^3/hr)	-	243061.6

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	22.1	39
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	67.4	325
3.	Carbon Monoxide (as CO)	IS-13270	35.6	138
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	126.7	650
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-090522-31	09/05/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	25/04/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	BBU
Stack Identification	-	Stack attached to BBU
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	60
Diameter of Stack (m)	-	2.0
Sampling Duration (Minutes)	-	26
Parameters Monitored	-	PM, NO_x, SO_2, CO, Ni & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^0C)	-	152
Ambient Temperature (^0C)	-	34
Average Stack Velocity (m/s)	-	12.58
Quantity of Emission (Nm^3/hr)	-	69895.6

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	3.0	5
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	11.4	250
3.	Carbon Monoxide (as CO)	IS-13270	9.6	100
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	14.5	50
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	N.A

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-030622-12	03/06/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	07/05/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	SRU 524
Stack Identification	-	Stack attached to SRU 524
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (mt)	-	100.0
Diameter of Stack (m)	-	2.0
Sampling Duration (Minutes)	-	27
Parameters Monitored	-	NO_x, SO_2, CO, H_2S
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^oC)	-	289
Ambient Temperature (^oC)	-	34
Average Stack Velocity (m/s)	-	16.13
Quantity of Emission (Nm^3/hr)	-	85495

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Limits for 100 % Fuel Gas(mg/Nm^3)
1.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	29.6	250
2.	Carbon Monoxide (as CO)	IS-13270	45.9	100
3.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	91.2	NA
4.	Hydrogen Sulphide (as H2S)	IS:11255 (P-4)	2.1	10

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-030622-13	03/06/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	07/05/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	SRU 525
Stack Identification	-	Stack attached to SRU 525
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (mt)	-	100.0
Diameter of Stack (m)	-	2.0
Sampling Duration (Minutes)	-	27
Parameters Monitored	-	NO_x, SO_2, CO, H_2S
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^0C)	-	274
Ambient Temperature (^0C)	-	35
Average Stack Velocity (m/s)	-	15.77
Quantity of Emission (Nm^3/hr)	-	83068.6

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Limits for 100 % Fuel Gas(mg/Nm^3)
1.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	30.5	250
2.	Carbon Monoxide (as CO)	IS-13270	39.6	100
3.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	91.3	NA
4.	Hydrogen Sulphide (as H2S)	IS:11255 (P-4)	2.2	10

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-11	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	01/06/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Sabou, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	SRU 524
Stack Identification	-	Stack attached to SRU 524
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	100.0
Diameter of Stack (m)	-	2.0
Sampling Duration (Minutes)	-	27
Parameters Monitored	-	NO_x, SO_2, CO, H_2S
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^0C)	-	292
Ambient Temperature (^0C)	-	36
Average Stack Velocity (m/s)	-	16.41
Quantity of Emission (Nm^3/hr)	-	85012

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Limits for 100 % Fuel Gas(mg/Nm^3)
1.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	32.6	250
2.	Carbon Monoxide (as CO)	IS-13270	51.5	100
3.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	99.8	NA
4.	Hydrogen Sulphide (as H2S)	IS:11255 (P-4)	2.9	10

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-12	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	01/06/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	SRU 525
Stack Identification	-	Stack attached to SRU 525
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	100.0
Diameter of Stack (m)	-	2.0
Sampling Duration (Minutes)	-	26
Parameters Monitored	-	NO_x, SO_2, CO, H_2S
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	278
Ambient Temperature (°C)	-	38
Average Stack Velocity (m/s)	-	16.20
Quantity of Emission (Nm^3/hr)	-	86947.2

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Limits for 100 % Fuel Gas(mg/Nm^3)
1.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	35.1	250
2.	Carbon Monoxide (as CO)	IS-13270	46.5	100
3.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	101.7	NA
4.	Hydrogen Sulphide (as H2S)	IS:11255 (P-4)	3.1	10

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-13	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team
Date of Sampling	-	02/06/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	HGU-1
Stack Identification	-	Stack attached to HGU-1
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	70
Diameter of Stack (m)	-	2.6
Sampling Duration (Minutes)	-	24
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	179
Ambient Temperature (^{0}C)	-	35
Average Stack Velocity (m/s)	-	14.71
Quantity of Emission (Nm^3/hr)	-	123654.1

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	31.4	42
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	60.5	330
3.	Carbon Monoxide (as CO)	IS-13270	43.2	140
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	165.4	693
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-14	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	02/06/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	HGU-2
Stack Identification	-	Stack attached to HGU-2
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	70
Diameter of Stack (m)	-	2.6
Sampling Duration (Minutes)	-	23
Parameters Monitored	-	PM,NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	167
Ambient Temperature (^{0}C)	-	38
Average Stack Velocity (m/s)	-	14.70
Quantity of Emission (Nm^3/hr)	-	91553.3

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	29.8	38
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	51.2	323
3.	Carbon Monoxide (as CO)	IS-13270	23.3	137
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	139.5	636
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-15	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team
Date of Sampling	-	02/06/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	Naphtha Super Heater
Stack Identification	-	Stack attached to Naphtha Super Heater
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	30
Diameter of Stack (m)	-	1.2
Sampling Duration (Minutes)	-	50
Parameters Monitored	-	PM, NO_x, SO_2, CO, Ni & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	332
Ambient Temperature (^{0}C)	-	40
Average Stack Velocity (m/s)	-	9.39
Quantity of Emission (Nm^3/hr)	-	18189.5

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	35.4	41
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	61.4	329
3.	Carbon Monoxide (as CO)	IS-13270	56.9	139
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	161.4	679
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-16	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	03/06/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	BBU
Stack Identification	-	Stack attached to BBU
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	60
Diameter of Stack (m)	-	2.0
Sampling Duration (Minutes)	-	25
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	156
Ambient Temperature (^{0}C)	-	36
Average Stack Velocity (m/s)	-	13.3
Quantity of Emission (Nm^3/hr)	-	65113.4

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	3.5	5
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	13.3	250
3.	Carbon Monoxide (as CO)	IS-13270	10.7	150
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	15.9	50
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	N.A

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-17	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	04/06/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	DCU
Stack Identification	-	Stack attached to DCU
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	65
Diameter of Stack (m)	-	3.15
Sampling Duration (Minutes)	-	43
Parameters Monitored	-	PM,NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	192
Ambient Temperature (^{0}C)	-	35
Average Stack Velocity (m/s)	-	8.34
Quantity of Emission (Nm^3/hr)	-	92364.8

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	26.8	43
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	100.3	334
3.	Carbon Monoxide (as CO)	IS-13270	48.7	142
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	171.4	719
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-18	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	04/06/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	CDU/VDU
Stack Identification	-	Stack attached to CDU/VDU
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	85
Diameter of Stack (m)	-	4.3
Sampling Duration (Minutes)	-	25
Parameters Monitored	-	PM,NO_x, SO_2, CO,NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	197
Ambient Temperature (^{0}C)	-	39
Average Stack Velocity (m/s)	-	14.72
Quantity of Emission (Nm^3/hr)	-	30264.9

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	29.7	40
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	97.4	326
3.	Carbon Monoxide (as CO)	IS-13270	51.3	138
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	156.2	659
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	**ST-080722-19**	**08/07/2022**

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	06/06/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phullokhari , Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	DHDT-2
Stack Identification	-	Stack attached to DHDT-2
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	60
Diameter of Stack (m)	-	1.46
Sampling Duration (Minutes)	-	48
Parameters Monitored	-	PM,NO_x, SO_2, CO
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^oC)	-	185
Ambient Temperature (^oC)	-	35
Average Stack Velocity (m/s)	-	7.67
Quantity of Emission (Nm^3/hr)	-	68947.1

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Limits for 100 % Fuel Gas (mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	3.2	5
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	53.1	250
3.	Carbon Monoxide (as CO)	IS-13270	35.7	100
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	28.4	50

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-20	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team
Date of Sampling	-	06/06/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phulokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	FCCU Heater
Stack Identification	-	Stack attached to FCCU Heater
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	80
Diameter of Stack (m)	-	1.75
Sampling Duration (Minutes)	-	50
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^0C)	-	196
Ambient Temperature (^0C)	-	38
Average Stack Velocity (m/s)	-	7.30
Quantity of Emission (Nm^3/hr)	-	29145.8

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	5.9	41
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	69.4	328
3.	Carbon Monoxide (as CO)	IS-13270	22.3	139
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	121.7	678
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-21	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	06/06/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Sabao, Distt. Bhatinda (Panjab) India
Emission Source Monitored	-	FCCU Regenerator
Stack Identification	-	Stack attached to FCCU Regenerator
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	42
Diameter of Stack (m)	-	3.3
Sampling Duration (Minutes)	-	28
Parameters Monitored	-	PM,NO_x, SO_2, CO, NI & V
Purpose of Monitoring		Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	258
Ambient Temperature (°C)	-	40
Average Stack Velocity (m/s)	-	14.86
Quantity of Emission (Nm^3/hr)	-	35124.9

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	7.8	50
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	79.4	350
3.	Carbon Monoxide (as CO)	IS-13270	27.1	300
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	123.6	500
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	2

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-22	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	07/06/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	HRSG-1
Stack Identification	-	Stack attached to HRSG-1
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	35
Diameter of Stack (m)	-	3.5
Sampling Duration (Minutes)	-	24
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	180
Ambient Temperature (°C)	-	37
Average Stack Velocity (m/s)	-	14.53
Quantity of Emission (Nm^3/hr)	-	192413.7

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	29.1	39
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	62.7	325
3.	Carbon Monoxide (as CO)	IS-13270	19.9	138
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	133.1	650
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-23	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	07/06/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	HRSG-2
Stack Identification	-	Stack attached to HRSG-2
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	35
Diameter of Stack (m)	-	3.5
Sampling Duration (Minutes)	-	23
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	175
Ambient Temperature (^{0}C)	-	41
Average Stack Velocity (m/s)	-	15.09
Quantity of Emission (Nm^3/hr)	-	26011.7

TEST RESULT

S.N.	Parameter	Test Method	Results (ug/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	25.1	39
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	70.2	325
3.	Carbon Monoxide (as CO)	IS-13270	39.6	138
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	113.7	650
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-24	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	08/06/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari , Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	UB-5
Stack Identification	-	Stack attached to UB-5
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	130
Diameter of Stack (m)	-	3.25
Sampling Duration (Minutes)	-	23
Parameters Monitored	-	PM,NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	132
Ambient Temperature (^{0}C)	-	38
Average Stack Velocity (m/s)	-	13.52
Quantity of Emission (Nm^3/hr)	-	191020.3

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Pet Cock Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	22.1	30
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	52.7	300
3.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	231.8	400

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-25	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team
Date of Sampling	-	08/06/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	UB-6
Stack Identification	-	Stack attached to UB-6
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	130
Diameter of Stack (m)	-	3.25
Sampling Duration (Minutes)	-	22
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	146
Ambient Temperature (^{0}C)	-	40
Average Stack Velocity (m/s)	-	14.57
Quantity of Emission (Nm^3/hr)	-	241698.2

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Pet Cock Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	26.8	30
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	63.1	300
3.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	181.7	400

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-26	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	09/06/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phulokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	UB-3
Stack Identification	-	Stack attached to UB-3
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	100
Diameter of Stack (m)	-	3.1
Sampling Duration (Minutes)	-	23
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring		Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	130
Ambient Temperature (^{0}C)	-	35
Average Stack Velocity (m/s)	-	13.71
Quantity of Emission (Nm^3/hr)	-	131065.9

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	31.1	44
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	62.9	335
3.	Carbon Monoxide (as CO)	IS-13270	22.7	143
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	151.8	730
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-27	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	09/06/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phulokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	UB-4
Stack Identification	-	Stack attached to UB-4
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	100
Diameter of Stack (m)	-	3.1
Sampling Duration (Minutes)	-	24
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	128
Ambient Temperature (^{0}C)	-	37
Average Stack Velocity (m/s)	-	13.26
Quantity of Emission (Nm^3/hr)	-	192562.4

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	25.4	44
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	53.7	335
3.	Carbon Monoxide (as CO)	IS-13270	20.3	143
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	139.6	730
5.	Nickle & Vanadium (as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-28	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	10/06/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Tehsil – Talwandi Sabo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	DHDT-1
Stack Identification	-	Stack attached to DHDT-1
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	75
Diameter of Stack (m)	-	2.25
Sampling Duration (Minutes)	-	42
Parameters Monitored	-	PM,NO_x, SO_2, CO,NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	185
Ambient Temperature (°C)	-	36
Average Stack Velocity (m/s)	-	8.70
Quantity of Emission (Nm^3/hr)	-	71895.4

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	20.1	40
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	55.7	327
3.	Carbon Monoxide (as CO)	IS-13270	39.8	138
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	141.5	666
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-29	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	10/06/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Sabo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	VGO Heater
Stack Identification	-	Stack attached to VGO Heater
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	65
Diameter of Stack (m)	-	2.25
Sampling Duration (Minutes)	-	40
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	168
Ambient Temperature (°C)	-	38
Average Stack Velocity (m/s)	-	8.78
Quantity of Emission (Nm^3/hr)	-	113261.7

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	31.7	41
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	109.8	328
3.	Carbon Monoxide (as CO)	IS-13270	45.1	139
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	152.8	676
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-30	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	22/06/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	NHT Reactor
Stack Identification	-	Stack attached to NHT Reactor
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	50
Diameter of Stack (m)	-	1.2
Sampling Duration (Minutes)	-	42
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	353
Ambient Temperature (^{0}C)	-	35
Average Stack Velocity (m/s)	-	11.84
Quantity of Emission (Nm^3/hr)	-	11263.4

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (In mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	29.8	39
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	41.2	324
3.	Carbon Monoxide (as CO)	IS-13270	102.3	137
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	116.9	645
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080722-31	08/07/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	22/06/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Talaka – Talwandi Sabo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	CCR Heater
Stack Identification	-	Stack attached to CCR Heater
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	68
Diameter of Stack (m)	-	2.5
Sampling Duration (Minutes)	-	40
Parameters Monitored	-	PM,NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	192
Ambient Temperature (^{0}C)	-	37
Average Stack Velocity (m/s)	-	9.22
Quantity of Emission (Nm^3/hr)	-	96103.5

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	31.8	40
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	123.6	326
3.	Carbon Monoxide (as CO)	IS-13270	164.8	138
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	151.4	659
5.	Nickle & Vanadium (as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080822-20	08/08/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	05/07/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	SRU 524
Stack Identification	-	Stack attached to SRU 524
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	100.0
Diameter of Stack (m)	-	2.0
Sampling Duration (Minutes)	-	28
Parameters Monitored	-	NO_x,CO, H_2S,SOx
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^0C)	-	297
Ambient Temperature (^0C)	-	37
Average Stack Velocity (m/s)	-	16.48
Quantity of Emission (Nm^3/hr)	-	82065.9

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Limits for 100 % Fuel Gas(mg/Nm^3)
1.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	32.7	250
2.	Carbon Monoxide (as CO)	IS-13270	50.1	100
3.	Oxide of Sulphur (as SOx)	IS:11255 (P-2)	90.2	NA
4.	Hydrogen Sulphide (as H2S)	IS:11255 (P-4)	2.9	10

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-080822-21	08/08/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	05/07/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	SRU 525
Stack Identification	-	Stack attached to SRU 525
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	100.0
Diameter of Stack (m)	-	2.0
Sampling Duration (Minutes)	-	28
Parameters Monitored	-	NO_x,CO, H_2S,SOx
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^0C)	-	281
Ambient Temperature (^0C)	-	39
Average Stack Velocity (m/s)	-	16.26
Quantity of Emission (Nm^3/hr)	-	85624.2

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Limits for 100 % Fuel Gas(mg/Nm^3)
1.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	33.2	250
2.	Carbon Monoxide (as CO)	IS-13270	44.5	100
3.	Oxide of Sulphur (as SOx)	IS:11255 (P-2)	95.2	NA
4.	Hydrogen Sulphide (as H2S)	IS:11255 (P-4)	3.3	10

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-02	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	02/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	SRU-524
Stack Identification	-	Stack attached to SRU-524
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (mt)	-	100
Diameter of Stack (m)	-	2.0
Sampling Duration (Minutes)	-	28
Parameters Monitored	-	NO_x, SO_2, CO, H_2S
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	289
Ambient Temperature (°C)	-	31
Average Stack Velocity (m/s)	-	15.95
Quantity of Emission (Nm^3/hr)	-	81362.7

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Limits for 100 % Fuel Gas(mg/Nm^3)
1.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	30.4	250
2.	Carbon Monoxide (as CO)	IS-13270	48.9	100
3.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	91.3	-
4.	Hydrogen Sulphide (as H2S)	IS:11255 (P-4)	2.3	10

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-03	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	02/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	SRU-525
Stack Identification	-	Stack attached to SRU-525
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	100
Diameter of Stack (m)	-	2.0
Sampling Duration (Minutes)	-	29
Parameters Monitored	-	NO_x, SO_2, CO, H_2S
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	283
Ambient Temperature (^{0}C)	-	32
Average Stack Velocity (m/s)	-	15.63
Quantity of Emission (Nm^3/hr)	-	84102.5

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Limits for 100 % Fuel Gas(mg/Nm^3)
1.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	31.3	250
2.	Carbon Monoxide (as CO)	IS-13270	41.5	100
3.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	97.8	-
4.	Hydrogen Sulphide (as H2S)	IS:11255 (P-4)	3.0	10

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-01	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	02/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	DCU
Stack Identification	-	Stack attached to DCU
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	65
Diameter of Stack (m)	-	3.15
Sampling Duration (Minutes)	-	43
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	195
Ambient Temperature (^{0}C)	-	29
Average Stack Velocity (m/s)	-	8.28
Quantity of Emission (Nm^3/hr)	-	91036.4

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	23.5	43
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	97.4	334
3.	Carbon Monoxide (as CO)	IS-13270	44.6	142
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	165.2	719
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-04	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	03/08/2022
Name & Address of the Industry	-	M/s RPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Sabuo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	HGU-1
Stack Identification	-	Stack attached to HGU-1
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	70
Diameter of Stack (m)	-	2.6
Sampling Duration (Minutes)	-	26
Parameters Monitored	-	PM,NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	183
Ambient Temperature (^{0}C)	-	32
Average Stack Velocity (m/s)	-	14.11
Quantity of Emission (Nm^3/hr)	-	110659.2

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	30.5	42
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	56.8	330
3.	Carbon Monoxide (as CO)	IS-13270	41.1	140
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	156.3	693
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-05	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	03/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phulokhari, Taluka – Talwandi Sabos, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	HGU-2
Stack Identification	-	Stack attached to HGU-2
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	70
Diameter of Stack (m)	-	2.6
Sampling Duration (Minutes)	-	24
Parameters Monitored	-	PM,NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	175
Ambient Temperature (^{0}C)	-	34
Average Stack Velocity (m/s)	-	14.90
Quantity of Emission (Nm^3/hr)	-	90425.6

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	25.3	38
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	50.1	323
3.	Carbon Monoxide (as CO)	IS-13270	22.7	137
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	123.6	636
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-06	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team
Date of Sampling	-	03/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phulokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	Naphtha Super Heater
Stack Identification	-	Stack attached to Naphtha Super Heater
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	30
Diameter of Stack (m)	-	1.2
Sampling Duration (Minutes)	-	50
Parameters Monitored	-	PM, NO_x, SO_2, CO, Ni & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	328
Ambient Temperature (°C)	-	34
Average Stack Velocity (m/s)	-	9.31
Quantity of Emission (Nm^3/hr)	-	17562.3

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	33.4	41
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	58.9	329
3.	Carbon Monoxide (as CO)	IS-13270	51.4	139
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	152.3	679
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-07	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	04/08/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	DHDT-2
Stack Identification	-	Stack attached to DHDT-2
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	60
Diameter of Stack (m)	-	1.46
Sampling Duration (Minutes)	-	45
Parameters Monitored	-	PM, NO_x, SO_2, CO
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^oC)	-	179
Ambient Temperature (^oC)	-	31
Average Stack Velocity (m/s)	-	7.62
Quantity of Emission (Nm^3/hr)	-	66312.8

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Limits for 100 % Fuel Gas (mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	3.0	5
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	50.3	250
3.	Carbon Monoxide (as CO)	IS-13270	32.1	100
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	29.5	50

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-08	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	04/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phulokhari, Taluka – Talwandi Sabo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	FCCU Heater
Stack Identification	-	Stack attached to FCCU Heater
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	80
Diameter of Stack (m)	-	1.75
Sampling Duration (Minutes)	-	50
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	192
Ambient Temperature (^{0}C)	-	33
Average Stack Velocity (m/s)	-	7.42
Quantity of Emission (Nm^3/hr)	-	27015.3

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	5.1	41
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	62.3	328
3.	Carbon Monoxide (as CO)	IS-13270	20.4	139
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	118.4	678
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-09	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team
Date of Sampling	-	04/08/2022
Name & Address of the Industry	-	**M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Sabou, Distt. Bhatinda (Punjab) India**
Emission Source Monitored	-	FCCU Regenerator
Stack Identification	-	Stack attached to FCCU Regenerator
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	42
Diameter of Stack (m)	-	3.3
Sampling Duration (Minutes)	-	27
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	262
Ambient Temperature (^{0}C)	-	34
Average Stack Velocity (m/s)	-	15.34
Quantity of Emission (Nm^3/hr)	-	36945.7

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	8.1	50
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	81.2	350
3.	Carbon Monoxide (as CO)	IS-13270	29.6	300
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	125.4	500
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	2

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-10	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	05/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Sabou, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	CDU/VDU
Stack Identification	-	Stack attached to CDU/VDU
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	85
Diameter of Stack (m)	-	4.3
Sampling Duration (Minutes)	-	24
Parameters Monitored	-	PM,NO_x, SO_2, CO,Ni & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	184
Ambient Temperature (^{0}C)	-	28
Average Stack Velocity (m/s)	-	14.67
Quantity of Emission (Nm^3/hr)	-	296534

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (In mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	27.4	40
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	91.3	326
3.	Carbon Monoxide (as CO)	IS-13270	49.8	138
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	146.2	659
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-11	02/09/2022

TEST CERTIFICATE

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	05/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	CCR Heater
Stack Identification	-	Stack attached to CCR Heater
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	68
Diameter of Stack (m)	-	2.5
Sampling Duration (Minutes)	-	42
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^0C)	-	180
Ambient Temperature (^0C)	-	32
Average Stack Velocity (m/s)	-	8.60
Quantity of Emission (Nm^3/hr)	-	89645.1

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	28.4	40
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	120.1	326
3.	Carbon Monoxide (as CO)	IS-13270	120.7	138
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	146.5	659
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-12	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	05/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	NHT Reactor
Stack Identification	-	Stack attached to NHT Reactor
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	50
Diameter of Stack (m)	-	1.2
Sampling Duration (Minutes)	-	43
Parameters Monitored	-	PM, NO_x, SO_2, CO, Ni & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	351
Ambient Temperature (°C)	-	33
Average Stack Velocity (m/s)	-	11.35
Quantity of Emission (Nm^3/hr)	-	10326.7

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	24.5	39
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	39.6	324
3.	Carbon Monoxide (as CO)	IS-13270	97.4	137
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	102.5	645
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-13	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team
Date of Sampling	-	06/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	VGO Heater
Stack Identification	-	Stack attached to VGO Heater
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	65
Diameter of Stack (m)	-	2.25
Sampling Duration (Minutes)	-	37
Parameters Monitored	-	PM,NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	165
Ambient Temperature (^{0}C)	-	32
Average Stack Velocity (m/s)	-	9.11
Quantity of Emission (Nm^3/hr)	-	129645.7

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	33.6	41
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	110.4	328
3.	Carbon Monoxide (as CO)	IS-13270	48.9	139
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	160.3	676
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-14	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	06/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phulkhari, Taluka – Talwandi Sabo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	DHDT-I
Stack Identification	-	Stack attached to DHDT-I
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	75
Diameter of Stack (m)	-	2.25
Sampling Duration (Minutes)	-	37
Parameters Monitored	-	PM,NO_x, SO_2, CO,NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	188
Ambient Temperature (°C)	-	34
Average Stack Velocity (m/s)	-	9.78
Quantity of Emission (Nm^3/hr)	-	68942.1

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	25.4	40
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	59.6	327
3.	Carbon Monoxide (as CO)	IS-13270	41.3	138
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	145.6	666
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-15	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team
Date of Sampling	-	11/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	HRSG-1
Stack Identification	-	Stack attached to HRSG-1
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	35
Diameter of Stack (m)	-	3.5
Sampling Duration (Minutes)	-	24
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	193
Ambient Temperature (^{0}C)	-	34
Average Stack Velocity (m/s)	-	15.08
Quantity of Emission (Nm^3/hr)	-	203014.5

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	32.4	39
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	66.5	325
3.	Carbon Monoxide (as CO)	IS-13270	21.4	138
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	136.5	650
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-16	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team
Date of Sampling	-	11/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phulokhari, Taluka – Talwandi Sabuo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	BBU
Stack Identification	-	Stack attached to BBU
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	60
Diameter of Stack (m)	-	2.0
Sampling Duration (Minutes)	-	24
Parameters Monitored	-	PM, NO_x, SO_2, CO, Ni & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	161
Ambient Temperature (°C)	-	35
Average Stack Velocity (m/s)	-	14.00
Quantity of Emission (Nm^3/hr)	-	66012.8

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	3.9	5
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	15.4	250
3.	Carbon Monoxide (as CO)	IS-13270	11.9	100
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	16.7	50
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	N.A.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-17	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	13/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	UB-2
Stack Identification	-	Stack attached to UB-2
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	100
Diameter of Stack (m)	-	3.1
Sampling Duration (Minutes)	-	24
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	128
Ambient Temperature (^{0}C)	-	30
Average Stack Velocity (m/s)	-	13.25
Quantity of Emission (Nm^3/hr)	-	198463.2

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	32.1	44
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	69.7	335
3.	Carbon Monoxide (as CO)	IS-13270	25.5	143
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	171.4	730
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-18	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	13/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phulokhari , Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	UB-3
Stack Identification	-	Stack attached to UB-3
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	100
Diameter of Stack (m)	-	3.1
Sampling Duration (Minutes)	-	23
Parameters Monitored	-	PM,NO_x, SO_2, CO, Ni & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	134
Ambient Temperature (^{0}C)	-	32
Average Stack Velocity (m/s)	-	13.65
Quantity of Emission (Nm^3/hr)	-	126591.4

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	30.1	44
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	60.9	335
3.	Carbon Monoxide (as CO)	IS-13270	20.1	143
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	145.6	730
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-19	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	13/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka - Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	UB-4
Stack Identification	-	Stack attached to UB-4
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	100
Diameter of Stack (m)	-	3.1
Sampling Duration (Minutes)	-	24
Parameters Monitored	-	PM,NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	129
Ambient Temperature (°C)	-	33
Average Stack Velocity (m/s)	-	13.19
Quantity of Emission (Nm^3/hr)	-	184256.1

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	24.2	44
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	50.6	335
3.	Carbon Monoxide (as CO)	IS-13270	19.5	143
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	131.2	730
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-20	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team
Date of Sampling	-	16/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Sabo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	HRSG-2
Stack Identification	-	Stack attached to HRSG-2
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	35
Diameter of Stack (m)	-	3.5
Sampling Duration (Minutes)	-	23
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	179
Ambient Temperature (^{0}C)	-	32
Average Stack Velocity (m/s)	-	15.29
Quantity of Emission (Nm^3/hr)	-	26985.3

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Mixed Fuel Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	26.3	39
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	71.4	325
3.	Carbon Monoxide (as CO)	IS-13270	40.5	138
4.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	116.5	650
5.	Nickle & Vanadium(as Ni& V)	USEPA Method 29 By AAS	BDL	5

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Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-21	02/09/2022

TEST CERTIFICATE

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	16/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	UB-5
Stack Identification	-	Stack attached to UB-5
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	130
Diameter of Stack (m)	-	3.25
Sampling Duration (Minutes)	-	23
Parameters Monitored	-	PM,NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	134
Ambient Temperature (^{0}C)	-	33
Average Stack Velocity (m/s)	-	13.93
Quantity of Emission (Nm^3/hr)	-	197854.1

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Pet Cork Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	20.9	30
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	55.4	300
3.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	241.6	400

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-020922-22	02/09/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	16/08/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	UB-6
Stack Identification	-	Stack attached to UB-6
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	130
Diameter of Stack (m)	-	3.25
Sampling Duration (Minutes)	-	23
Parameters Monitored	-	PM, NO_x, SO_2, CO, NI & V
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^{0}C)	-	143
Ambient Temperature (^{0}C)	-	34
Average Stack Velocity (m/s)	-	14.31
Quantity of Emission (Nm^3/hr)	-	236545.1

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Pet Cock Limits (in mg/Nm^3)
1.	Particulate Matters (as PM)	IS-11255 (P-1)	18.1	30
2.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	65.2	300
3.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	174.6	400

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-051022-11	05/10/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	03/09/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – TalwandiSaboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	SRU-524
Stack Identification	-	Stack attached to SRU-524
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	100
Diameter of Stack (m)	-	2.0
Sampling Duration (Minutes)	-	28
Parameters Monitored	-	NO_x, SO_2, CO, H_2S
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^oC)	-	271
Ambient Temperature (^oC)	-	33
Average Stack Velocity (m/s)	-	14.33
Quantity of Emission (Nm^3/hr)	-	79658.2

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Limits for 100 % Fuel Gas(mg/Nm^3)
1.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	28.5	250
2.	Carbon Monoxide (as CO)	IS-13270	42.3	100
3.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	88.7	-
4.	Hydrogen Sulphide (as H2S)	IS:11255 (P-4)	2.1	10

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-051022-12	05/10/2022

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	03/09/2022
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhari, Taluka – TalwandiSaboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	SRU-525
Stack Identification	-	Stack attached to SRU-525
Normal Operating Schedule	-	As per requirement
Type of Stack (ACC/Metal)	-	Mild Steel
Stack Height From Ground Level (meter)	-	100
Diameter of Stack (m)	-	2.0
Sampling Duration (Minutes)	-	29
Parameters Monitored	-	NO_x, SO_2, CO, H_2S
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (^0C)	-	245
Ambient Temperature (^0C)	-	33
Average Stack Velocity (m/s)	-	12.39
Quantity of Emission (Nm^3/hr)	-	80129.2

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm^3)	Limits for 100 % Fuel Gas(mg/Nm^3)
1.	Oxide of Nitrogen (as NOx)	IS-11255(P-7)	27.6	250
2.	Carbon Monoxide (as CO)	IS-13270	39.7	100
3.	Oxides of Sulphur (as SOX)	IS-11255 (P-2)	86.1	-
4.	Hydrogen Sulphide (as H2S)	IS:11255 (P-4)	2.9	10

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ANNEXURE-VII

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-090522-35	09/05/2022

ISSUED TO: **HPCL- Mittal Energy Limited,Village – Phullokhari , Taluka – TalwandiSaboo, Distt.- Bhatinda (Punjab) India**

SAMPLING & ANALYSIS DATA

Sample Collected On : 26/04/2022
Sample Collected By : Laboratory
Sample Description : **Waste Water (W-1: ETP Outlet, Inside GGSR)**
Sample Quantity/Packing detail : 2.0 lts
Weather Conditions : Normal
Analysis Duration : 28/04/2022 to 06/05/2022

Sr. No.	Parameter	Unit	Result W-1	Permissible Limits	Protocol
1	pH	...	7.36	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	12.36	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	82.64	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	8.0	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	BDL	5.0	IS:3025 (P-39)
6	Phenolic Compounds(C6H5OH)	mg/L	0.20	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.23	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH3)	mg/L	17.52	40	IS:3025 (P-34)
9	Phosphate	mg/L	1.06	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr' 6)	mg/L	BDL	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	BDL	1.0	APHA -23rd Ed.
12	Lead (Pb)	mg/L	BDL	0.1	APHA-23rd Ed.
13	Mercury (Hg)	mg/L	BDL	0.01	APHA-23rd Ed.
14	Zinc (Zn)	mg/L	BDL	5.0	APHA-23rd Ed.
15	Nickel (Ni)	mg/L	BDL	1.0	APHA-23rd Ed.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-090522-36	09/05/2022

ISSUED TO: **HPCL- Mittal Energy Limited,Village – Phullokhari ,**
Taluka – TalwandiSaboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On	:	26/04/2022
Sample Collected By	:	Laboratory
Sample Description	:	**Waste Water (W-1: ETP Outlet, Inside GGSR)**
Sample Quantity/Packing detail	:	2.0 lts
Weather Conditions	:	Normal
Analysis Duration	:	28/04/2022 to 06/05/2022

Sr.No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
16	Ammonia (N)	mg/L	7.98	15.0	IS:3025 (P-34)
17	Cyanide (CN)	mg/L	BDL	0.20	APHA-23rd Ed.
18	Total Chromium	mg/L	BDL	2.0	IS:3025 (P-52)
19	Vanadium (V)	mg/L	BDL	0.2	APHA-23rd Ed.
20	Benzene	mg/L	BDL	0.1	APHA-23rd Ed.
21	Benzo(a)-Pyreen	mg/L	BDL	0.2	APHA-23rd Ed.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-090522-37	09/05/2022

ISSUED TO: **HPCL- Mittal Energy Limited,Village – Phullokhari ,**
Taluka – TalwandiSaboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On	:	26/04/2022
Sample Collected By	:	Laboratory
Sample Description	:	**Waste Water (W-1: ETP Outlet, Inside GGSR)**
Sample Quantity/Packing detail	:	2.0 lts
Weather Conditions	:	Normal
Analysis Duration	:	28/04/2022 to 06/05/2022

Sr. No.	Parameters	Unit	Test Result	Protocol
			W1	
1	Bioassay Toxic Test	%	98 % survival of fish after 96 hours in 100 % effluent	IS:6582 (P-1)

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-030622-17	03/06/2022

ISSUED TO: HPCL- Mittal Energy Limited,Village – Phullokhari ,
Taluka – TalwandiSaboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On : 09/05/2022
Sample Collected By : Laboratory
Sample Description : **Waste Water (W-1: ETP Outlet, Inside GGSR)**
Sample Quantity/Packing detail : 2.0 Lts.
Weather Conditions : Normal
Analysis Duration : 10/05/2022 To 18/05/2022

Sr. No.	Parameter	Unit	Result W-1	Permissible Limits	Protocol
1	pH	...	7.31	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	11.98	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	80.34	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	8.5	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	BDL	5.0	IS:3025 (P-39)
6	Phenolic Compounds(C6H5OH)	mg/L	0.21	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.24	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH3)	mg/L	18.32	40	IS:3025 (P-34)
9	Phosphate	mg/L	1.03	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr^ 6)	mg/L	BDL	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	BDL	1.0	APHA -23rd Ed.
12	Lead (Pb)	mg/L	BDL	0.1	APHA-23rd Ed.
13	Mercury (Hg)	mg/L	BDL	0.01	APHA-23rd Ed.
14	Zinc (Zn)	mg/L	BDL	5.0	APHA-23rd Ed.
15	Nickel (Ni)	mg/L	BDL	1.0	APHA-23rd Ed.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-030622-18	03/06/2022

ISSUED TO: **HPCL- Mittal Energy Limited,Village – Phullokhari ,**
Taluka – TalwandiSaboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On	:	09/05/2022
Sample Collected By	:	Laboratory
Sample Description	:	**Waste Water (W-1: ETP Outlet, Inside GGSR)**
Sample Quantity/Packing detail	:	2.0 Lts.
Weather Conditions	:	Normal
Analysis Duration	:	10/05/2022 To 18/05/2022

Sr.No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
16	Ammonia (N)	mg/L	7.91	15.0	IS:3025 (P-34)
17	Cyanide (CN)	mg/L	BDL	0.20	APHA-23rd Ed.
18	Total Chromium	mg/L	BDL	2.0	IS:3025 (P-52)
19	Vanadium (V)	mg/L	BDL	0.2	APHA-23rd Ed.
20	Benzene	mg/L	BDL	0.1	APHA-23rd Ed.
21	Benzo(a)-Pyreen	mg/L	BDL	0.2	APHA-23rd Ed.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-030622-19	03/06/2022

ISSUED TO: **HPCL- Mittal Energy Limited,Village – Phullokhari ,**
Taluka – TalwandiSaboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On	:	09/05/2022
Sample Collected By	:	Laboratory
Sample Description	:	**Waste Water (W-1: ETP Outlet, Inside GGSR)**
Sample Quantity/Packing detail	:	2.0 Lts.
Weather Conditions	:	Normal
Analysis Duration	:	10/05/2022 To 18/05/2022

Sr. No.	Parameters	Unit	Test Result	Protocol
			W1	
1	Bioassay Toxic Test	%	98 % survival of fish after 96 hours in 100 % effluent	IS:6582 (P-1)

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-080722-44	08/07/2022

ISSUED TO: **HPCL- Mittal Energy Limited,Village – Phullokhari , Taluka – TalwandiSaboo, Distt.- Bhatinda (Punjab) India**

SAMPLING & ANALYSIS DATA

Sample Collected On : 04/06/2022
Sample Collected By : Laboratory
Sample Description : **Waste Water (W:-1 ETP Outlet, Inside GGSR)**
Sample Quantity/Packing detail : 2.0 lts
Weather Conditions : Normal
Analysis Duration : 08/06/2022 To 18/06/2022

Sr. No.	Parameter	Unit	Result W-1	Permissible Limits	Protocol
1	pH	---	7.33	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	11.62	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	80.69	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	7.0	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	BDL	5.0	IS:3025 (P-39)
6	Phenolic Compounds(C6H5OH)	mg/L	0.19	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.21	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH3)	mg/L	18.11	40	IS:3025 (P-34)
9	Phosphate	mg/L	1.01	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr' 6)	mg/L	BDL	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	BDL	1.0	APHA -23rd Ed.
12	Lead (Pb)	mg/L	BDL	0.1	APHA-23rd Ed.
13	Mercury (Hg)	mg/L	BDL	0.01	APHA-23rd Ed.
14	Zinc (Zn)	mg/l	BDL	5.0	APHA-23rd Ed.
15	Nickel (Ni)	mg/L	BDL	1.0	APHA-23rd Ed.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-080722-45	08/07/2022

ISSUED TO: **HPCL- Mittal Energy Limited, Village – Phullokhari , Taluka – TalwandiSaboo, Distt.- Bhatinda (Punjab) India**

SAMPLING & ANALYSIS DATA

Sample Collected On	:	04/06/2022
Sample Collected By	:	Laboratory
Sample Description		**Waste Water (W:-1 ETP Outlet, Inside GGSR)**
Sample Quantity/Packing detail	:	2.0 lts
Weather Conditions	:	Normal
Analysis Duration	:	**08/06/2022 To 18/06/2022**

Sr.No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
16	Ammonia (N)	mg/L	7.86	15.0	IS:3025 (P-34)
17	Cyanide (CN)	mg/L	BDL	0.20	APHA-23rd Ed.
18	Total Chromium	mg/L	BDL	2.0	IS:3025 (P-52)
19	Vanadium (V)	mg/L	BDL	0.2	APHA-23rd Ed.
20	Benzene	mg/L	BDL	0.1	APHA-23rd Ed.
21	Benzo(a)-Pyreen	mg/L	BDL	0.2	APHA-23rd Ed.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-080722-46	08/07/2022

ISSUED TO: HPCL- Mittal Energy Limited,Village – Phullokhari , Taluka – TalwandiSaboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On	:	04/06/2022
Sample Collected By	:	Laboratory
Sample Description	:	**Waste Water (W:-1 ETP Outlet, Inside GGSR)**
Sample Quantity/Packing detail	:	2.0 lts
Weather Conditions	:	Normal
Analysis Duration	:	08/06/2022 To 18/06/2022

Sr. No.	Parameters	Unit	Test Result	Protocol
			W1	
1	Bioassay Toxic Test	%	98 % survival of fish after 96 hours in 100 % effluent	IS:6582 (P-1)

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-080822-14	08/08/2022

ISSUED TO: HPCL- Mittal Energy Limited,Village – Phullokhari , Taluka – TalwandiSaboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On	:	04/07/2022
Sample Collected By	:	Laboratory
Sample Description	:	**Waste Water (W:-1 ETP Outlet, Inside GGSR)**
Sample Quantity/Packing detail	:	2.0 lts
Weather Conditions	:	Normal
Analysis Duration	:	07/07/2022 To16 /07/2022

Sr. No.	Parameter	Unit	Result W-1	Permissible Limits	Protocol
1	pH	...	7.26	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	10.32	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	78.62	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	BDL	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	0.18	5.0	IS:3025 (P-39)
6	Phenolic Compounds(C6H5OH)	mg/L	0.20	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.22	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH3)	mg/L	19.13	40	IS:3025 (P-34)
9	Phosphate	mg/L	1.03	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr' 6)	mg/L	BDL	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	BDL	1.0	APHA -23rd Ed.
12	Lead (Pb)	mg/L	BDL	0.1	APHA-23rd Ed.
13	Mercury (Hg)	mg/L	BDL	0.01	APHA-23rd Ed.
14	Zinc (Zn)	mg/L	BDL	5.0	APHA-23rd Ed.
15	Nickel (Ni)	mg/L	BDL		APHA-23rd Ed.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-080822-15	08/08/2022

ISSUED TO: **HPCL- Mittal Energy Limited,Village – Phullokhari ,**
Taluka – TalwandiSaboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On	:	04/07/2022
Sample Collected By	:	Laboratory
Sample Description	:	**Waste Water (W:-1 ETP Outlet, Inside GGSR)**
Sample Quantity/Packing detail	:	2.0 lts
Weather Conditions	:	Normal
Analysis Duration	:	**07/07/2022 To16 /07/2022**

Sr.No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
16	Ammonia (N)	mg/L	7.69	15.0	IS:3025 (P-34)
17	Cyanide (CN)	mg/L	BDL	0.20	APHA-23rd Ed.
18	Total Chromium	mg/L	BDL	2.0	IS:3025 (P-52)
19	Vanadium (V)	mg/L	BDL	0.2	APHA-23rd Ed.
20	Benzene	mg/L	BDL	0.1	APHA-23rd Ed.
21	Benzo(a)-Pyreen	mg/L	BDL	0.2	APHA-23rd Ed.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-080822-16	08/08/2022

ISSUED TO: **HPCL- Mittal Energy Limited,Village – Phullokhari , Taluka – TalwandiSaboo, Distt.- Bhatinda (Punjab) India**

SAMPLING & ANALYSIS DATA

Sample Collected On	:	04/07/2022
Sample Collected By	:	Laboratory
Sample Description	:	**Waste Water (W:-1 ETP Outlet, Inside GGSR)**
Sample Quantity/Packing detail	:	2.0 lts
Weather Conditions	:	Normal
Analysis Duration	:	07/07/2022 To16 /07/2022

Sr. No.	Parameters	Unit	Test Result	Protocol
			W1	
1	Bioassay Toxic Test	%	98 % survival of fish after 96 hours in 100 % effluent	IS:6582 (P-1)

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-020922-25	02/09/2022

ISSUED TO: **HPCL- Mittal Energy Limited,Village – Phullokhari ,**
Taluka – TalwandiSaboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On : 17/08/2022
Sample Collected By : Laboratory
Sample Description : **Waste Water (W:-1 ETP Outlet, Inside GGSR)**
Sample Quantity/Packing detail : 2.0 lts
Weather Conditions : Normal
Analysis Duration : 22/08/2022 To 31/08/2022

Sr. No.	Parameter	Unit	Result W-1	Permissible Limits	Protocol
1	pH	...	7.29	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	11.24	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	73.62	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	BDL	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	0.20	5.0	IS:3025 (P-39)
6	Phenolic Compounds(C6H5OH)	mg/L	0.21	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.23	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH3)	mg/L	17.84	40	IS:3025 (P-34)
9	Phosphate	mg/L	1.01	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr 6)	mg/L	BDL	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	BDL	1.0	APHA -23rd Ed.
12	Lead (Pb)	mg/L	BDL	0.1	APHA-23rd Ed.
13	Mercury (Hg)	mg/L	BDL	0.01	APHA-23rd Ed.
14	Zinc (Zn)	mg/L	BDL	5.0	APHA-23rd Ed.
15	Nickel (Ni)	mg/L	BDL	1.0	APHA-23rd Ed.

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AUTHORIZED SIGNATORY

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Analyzing for an Assured Future

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-020922-26	02/09/2022

ISSUED TO: **HPCL- Mittal Energy Limited,Village – Phullokhari ,**
Taluka – TalwandiSaboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On : 17/08/2022
Sample Collected By : Laboratory
Sample Description : Waste Water (W:-1 ETP Outlet, Inside GGSR)
Sample Quantity/Packing detail : 2.0 lts
Weather Conditions : Normal
Analysis Duration : 22/08/2022 To 31/08/2022

Sr.No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
16	Ammonia (N)	mg/L	7.65	15.0	IS:3025 (P-34)
17	Cyanide (CN)	mg/L	BDL	0.20	APHA-23rd Ed.
18	Total Chromium	mg/L	BDL	2.0	IS:3025 (P-52)
19	Vanadium (V)	mg/L	BDL	0.2	APHA-23rd Ed.
20	Benzene	mg/L	BDL	0.1	APHA-23rd Ed.
21	Benzo(a)-Pyreen	mg/L	BDL	0.2	APHA-23rd Ed.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-020922-27	02/09/2022

ISSUED TO: **HPCL- Mittal Energy Limited, Village – Phullokhari ,**
Taluka – TalwandiSaboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On	:	17/08/2022
Sample Collected By	:	Laboratory
Sample Description	:	Waste Water (W:-1 ETP Outlet, Inside GGSR)
Sample Quantity/Packing detail	:	2.0 lts
Weather Conditions	:	Normal
Analysis Duration	:	22/08/2022 To 31/08/2022

Sr. No.	Parameters	Unit	Test Result	Protocol
			W1	
1	Bioassay Toxic Test	%	98 % survival of fish after 96 hours in 100 % effluent	IS:6582 (P-1)

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-051022-16	05/10/2022

ISSUED TO: **HPCL- Mittal Energy Limited, Village – Phullokhari ,**
Taluka – TalwandiSaboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On : 02/09/2022
Sample Collected By : Laboratory
Sample Description : **Waste Water (W:-1 ETP Outlet, Inside GGSR)**
Sample Quantity/Packing detail : 2.0 lts
Weather Conditions : Normal
Analysis Duration : 04/09/2022 To 09/09/2022

Sr. No.	Parameter	Unit	Result W-1	Permissible Limits	Protocol
1	pH	...	7.31	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	10.26	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	70.26	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	12.3	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	0.21	5.0	IS:3025 (P-39)
6	Phenolic Compounds(C6H5OH)	mg/L	0.23	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.25	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH3)	mg/L	16.32	40	IS:3025 (P-34)
9	Phosphate	mg/L	1.06	3.0	IS:3025 (P-31)
10	Chromium Hexavalent (Cr 6)	mg/L	BDL	0.1	IS:3025 (P-52)
11	Copper (Cu)	mg/L	BDL	1.0	APHA -23rd Ed.
12	Lead (Pb)	mg/L	BDL	0.1	APHA-23rd Ed.
13	Mercury (Hg)	mg/L	BDL	0.01	APHA-23rd Ed.
14	Zinc (Zn)	mg/L	BDL	5.0	APHA-23rd Ed.
15	Nickel (Ni)	mg/L	BDL	1.0	APHA-23rd Ed.

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AUTHORIZED SIGNATORY

Laboratory : GT-20, Sector-117, NOIDA, Gautam Budh Nagar - 201316
Branch Office : IP-2, Haridwar, Uttarakhand | Gayatri Nagar, Kathgodam, Haldwani, Uttarakhand
E.: noida.laboratory@gmail.com, info@noidalabs.com **W.:** www.noidalabs.com

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-051022-17	05/10/2022

ISSUED TO: **HPCL- Mittal Energy Limited, Village – Phullokhari ,**
Taluka – TalwandiSaboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On : 02/09/2022
Sample Collected By : Laboratory
Sample Description : Waste Water (W:-1 ETP Outlet, Inside GGSR)
Sample Quantity/Packing detail : 2.0 lts
Weather Conditions : Normal
Analysis Duration : 04/09/2022 To 09/09/2022

Sr.No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
16	Ammonia (N)	mg/L	7.52	15.0	IS:3025 (P-34)
17	Cyanide (CN)	mg/L	BDL	0.20	APHA-23rd Ed.
18	Total Chromium	mg/L	BDL	2.0	IS:3025 (P-52)
19	Vanadium (V)	mg/L	BDL	0.2	APHA-23rd Ed.
20	Benzene	mg/L	BDL	0.1	APHA-23rd Ed.
21	Benzo(a)-Pyreen	mg/L	BDL	0.2	APHA-23rd Ed.

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-051022-18	05/10/2022

ISSUED TO: **HPCL- Mittal Energy Limited,Village – Phullokhari ,**
Taluka – TalwandiSaboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On : 02/09/2022
Sample Collected By : Laboratory
Sample Description : Waste Water (W:-1 ETP Outlet, Inside GGSR)
Sample Quantity/Packing detail : 2.0 lts
Weather Conditions : Normal
Analysis Duration : 04/09/2022 To 09/09/2022

Sr. No.	Parameters	Unit	Test Result	Protocol
			W1	
1	Bioassay Toxic Test	%	98 % survival of fish after 96 hours in 100 % effluent	IS:6582 (P-1)

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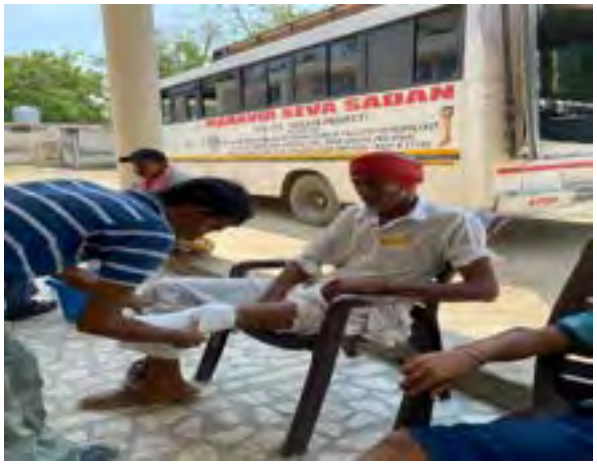
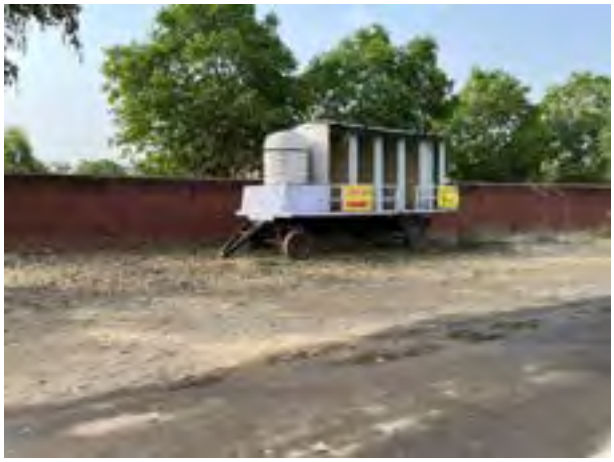
ANNEXURE-VIII

Annexure-VIII

Activities undertaken for improving socio-economic condition in the surrounding areas from Apr'22 to Sep'2022		
CSR Pillars	**Beneficiaries**	**Remarks**
Community Healthcare & Hygiene	4182	Artificial Limbs and aids distribution Camp; Road cleaning and garbage disposal; Support of Mobile Toilets;
Livelihood and Sustainable Development	7621	Women Empowerment initiative; Animal Husbandry camps
Total	**11803**	

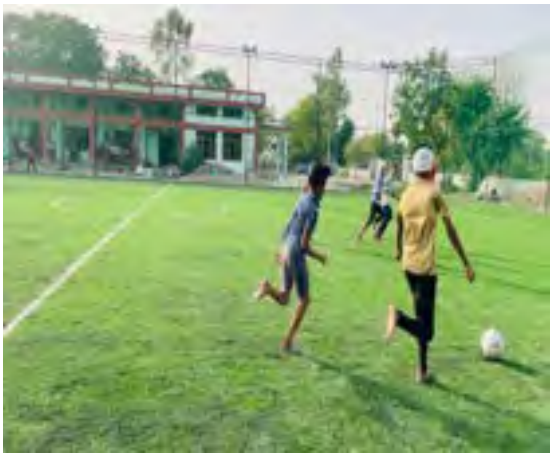
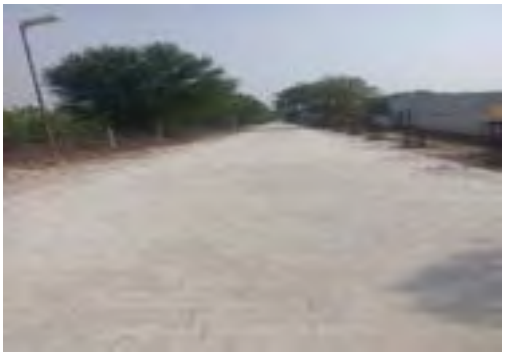
Photographs for activities undertaken for improving socio-economic condition in the surrounding areas from Apr'22 to Sep'2022

Livelihood and Sustainable Development (Women Entrepreneurship Development)	Livelihood and Sustainable Development (Animal Husbandry camp)
	
Community Healthcare & Hygiene (Artificial Limbs and aids distribution Camp)	**Community Healthcare & Hygiene (Support of Mobile Toilets)**
	

ANNEXURE-IX

Activities undertaken for community welfare including eco-developmental measures in the surrounding areas from Apr'2022' to Sep'22		
CSR Pillars	**Beneficiaries**	**Remarks**
Community infrastructure & Environment	310	Infrastructure development of vicinity villages (Pavor block roads); Infrastructure development of sports facility; other basic amenities support to community institutions.
Education Development	8334	Career progression session for Govt. school students; Support providing education to special abled children; Drawing competition ; Distribution of Bicycle for Girls Students
Total	**8644**	

Photographs for activities undertaken for community welfare including eco-developmental measures

Education Development (Drawing competition in schools)	Education Development (Distribution of bicycles to Girls students)
	
Education Development (Career progression session)	**Community infrastructure & Environment (Infrastructure development of sports facility)**
	
Community infrastructure & Environment (Infrastructure development of Vicinity villages)	
	

ANNEXURE-X

PUNJAB POLLUTION CONTROL BOARD

Invest Punjab, PBIP, Udyog Bhawan, Sector 17, Chandigarh.

Website:- www.ppcb.gov.in

Office Dispatch No :	**Registered/Speed Post**	**Date:**
Industry Registration ID:	*R12BTI44706*	**Application No :** *19563058*

To,

Sanket Thapar
Hpcl-mittal Energy Limited,guru Gobind Singh Refinery Project,village Phullokari,taluka Talwandi Saboo, District Bathinda.
Bathinda,Bathinda-151301

Subject: Grant Varied 'Consent to Operate' u/s 21 of Air (Prevention & Control of Pollution) Act, 1981 for discharge of emissions arising out of premises.

With reference to your application for obtaining Varied 'Consent to Operate' u/s 21 of Air (Prevention & Control of Pollution) Act, 1981, you are hereby, authorized to operate an industrial unit for discharge of the emission(s) arising out of your premises subject to the Terms and Conditions as mentioned in this Certificate.

1. Particulars of Consent to Operate under Air Act, 1981 granted to the industry

Consent to Operate Certificate No.	*CTOA/Varied/BTI/2022/19563058*
Date of issue :	*24/09/2022*
Date of expiry :	*31/03/2025*
Certificate Type :	*Varied*
Previous CTO No. & Validity :	*CTOA/Varied/BTI/2022/18070511* *From:09/05/2022 To:30/09/2022*

2. Particulars of the Industry

Name & Designation of the Applicant	*Sanket Thapar, (Deputy General Manager)*
Address of Industrial premises	*Hpcl-mittal Energy Limited (guru Gobind Singh Refinery), Village Phullokari,taluka Talwandi Saboo,, Talwandi Sabo,Bathinda-151301*
Capital Investment of the Industry	*4245260.0 lakhs*
Category of Industry	*Red*
Type of Industry	*Oil Refinery*
Scale of the Industry	*Large*
Office District	*Bathinda*
Consent Fee Details	Bathinda Consent Fee Details Rs. 86,40,000/- through online vide R.no. SBINR12022012763913575 dated 27.01.2022 under Air Act, 1981, against the fixed assets of Rs. 4245759/-, which is adequate upto 31.03.2025

Raw Materials (Name with Quantity per day)	*Crude Oil @33750Metric Tonnes/Day*
Products (Name with Quantity per day)	*LPG @1780Metric Tonnes/Day* *Naphtha @0Metric Tonnes/Day* *Gasoline @2980Metric Tonnes/Day* *ATF @1200Metric Tonnes/Day* *Kerosene @300Metric Tonnes/Day* *Diesel @11838Metric Tonnes/Day* *Sulphur @641Metric Tonnes/Day* *Coke @1695Metric Tonnes/Day* *Hexane @15Metric Tonnes/Day* *Poly Propylene @1400Metric Tonnes/Day* *Motor Turpentine Oil @75Metric Tonnes/Day* *Bitumen @1500Metric Tonnes/Day* *HDPE/LLDPE @3586Metric Tonnes/Day* *PP-Regular @974Metric Tonnes/Day* *PP-Impact @450Metric Tonnes/Day* *Benzene @237Metric Tonnes/Day* *Mixed Xylenes @483Metric Tonnes/Day* *Low Sulphur Fuel Oil @45Metric Tonnes/Day*
By-products, if any, (Name with Quantity per day)	*As per the application form.*
Details of the machinery and process	*As per documents appended with application.*
Quantity of fuel required (in TPD) and capacity of boilers/ Furnace/Thermo heater etc.	*• Fuel Oil for 4 no. boilers of capacity 240 TPH each.* *• Pet coke / coal for 2 no. boilers of capacity 300 TPH each.* *• HSD for 3 no. DG sets of capacity 8250 KVA, 3520 KVA & 1010 KVA.* *• Natural Gas for furnaces / Units*
Type of Air Pollution Control Devices to be installed	*• Low Nox burner with 4 no boilers of capacity 240 TPH each.* *• Separate ESP for 2 no. boilers of capacity 300 TPH each.* *• Canopies with DG sets of capacity 8250 KVA, 3520 KVA & 1010 KVA.*

Stack height provided with each boiler/thermo heater/Furnace etc.	*CDU/VDU85(Ground Level)/80(Roof Level)* *VGO-HDT Common Stack65(Ground Level)/60(Roof Level)* *DCU Heater Flue Gas Stack65(Ground Level)/60(Roof Level)* *DHDT-1 Reactor Feed Heater Stack-50775(Ground Level)/70(Roof Level)* *DHDT-2 Stack_60760(Ground Level)/55(Roof Level)* *HGU Flue Gas Stack Train 165(Ground Level)/60(Roof Level)* *HGU Flue Gas Stack Train 265(Ground Level)/60(Roof Level)* *Naphtha Superheater Stack30(Ground Level)/25(Roof Level)* *FCCU Furnace Stack80(Ground Level)/75(Roof Level)* *FCC Regenerator Flue Gas Stack42(Ground Level)/37(Roof Level)* *SRU Incinerator Train 1100(Ground Level)/88(Roof Level)* *SRU Incinerator Train 2100(Ground Level)/88(Roof Level)* *NHT reactor Heater Stack50(Ground Level)/45(Roof Level)* *CCR Common Stack68(Ground Level)/63(Roof Level)* *Bitumen Blowing Unit (BBU) Stack60(Ground Level)/55(Roof Level)* *UB-1100(Ground Level)/95(Roof Level)* *UB-2100(Ground Level)/95(Roof Level)* *UB-3100(Ground Level)/95(Roof Level)* *UB-4100(Ground Level)/95(Roof Level)* *UB-5130(Ground Level)/125(Roof Level)* *UB-6130(Ground Level)/125(Roof Level)* *HRSG-135(Ground Level)/30(Roof Level)* *HRSG-235(Ground Level)/30(Roof Level)* *FF-111170(Ground Level)/60(Roof Level)* *FF-111270(Ground Level)/60(Roof Level)* *FF-111370(Ground Level)/60(Roof Level)* *FF-111470(Ground Level)/60(Roof Level)* *FF-111570(Ground Level)/60(Roof Level)* *FF-111670(Ground Level)/60(Roof Level)* *FF-111770(Ground Level)/60(Roof Level)*
Sources of emissions and type of pollutants	*CDV/VDUSO2/NOx/CO/SPM* *FCCU HeaterSO2/NOx/CO/SPM* *FCCU -RegenerationSO2/NOx/CO/SPM* *HGU Train-1SO2/NOx/CO/SPM* *HGU Train-2SO2/NOx/CO/SPM* *Naphtha Superheater StackSO2/NOx/CO/SPM* *NHT Reactor Heater StackSO2/NOx/CO/SPM* *CCR Common StackSO2/NOx/CO/SPM* *SRU-525 StackSO2/NOx/CO* *SRU-524 StackSO2/NOx/CO* *VGO-HDT Common StackSO2/NOx/CO/SPM* *DHDT-I (507)SO2/NOx/CO/SPM* *DHDT-II (607)SO2/NOx/CO/SPM* *DCU Heater Flue Gas StackSO2/NOx/CO/SPM* *UB-1SO2/NOx/CO/SPM* *UB-2SO2/NOx/CO/SPM* *UB-3SO2/NOx/CO/SPM* *UB-4SO2/NOx/CO/SPM* *UB-5SO2/NOx/CO/SPM* *UB-6SO2/NOx/CO/SPM* *HRSG-1SO2/NOx/CO/SPM* *HRSG-2SO2/NOx/CO/SPM* *Bitumen Blowing Unit (BBU)SO2/NOx/CO/SPM* *FF-1111SO2/NOx/CO/SPM* *FF-1112SO2/NOx/CO/SPM* *FF-1113SO2/NOx/CO/SPM* *FF-1114SO2/NOx/CO/SPM* *FF-1115SO2/NOx/CO/SPM* *FF-1116SO2/NOx/CO/SPM* *FF-1117SO2/NOx/CO/SPM*
Standards to be acheived under Air(Prevention & Control of Pollution) Act, 1981	*As prescribed by the CPCB/Board/ MoEF&CC*

24/09/2022

(Kamal Singla)
Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

Endst. No.: **Dated:**

A copy of the above is forwarded to the following for information and necessary action please:

1. Senior Environmental Engineer, Zonal Office, Bathinda.
2. Environmental Engineer, Regional Office, Bathinda, with the request to personally ensure that the industry shall make the compliance of EC conditions & other special conditions within stipulated time period.

24/09/2022

(Kamal Singla)
Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

TERMS AND CONDITIONS

A. GENERAL CONDITIONS

1. This consent is not valid for getting power load from the Punjab State Power Corporation Ltd. or for getting loan from the financial institutions.
2. The industry shall apply for renewal /extension of consent at least two months before expiry of the consent.
3. The industry shall not violate any of the norms prescribed under the Air (Prevention & Control of Pollution) Act, 1981, failing which, the consent shall be cancelled / revoked.
4. The achievement of adequacy and efficiency of the air pollution control devices installed shall be the entire responsibility of the industry
5. The authorized fuel being used shall not be changed without the prior written permission of the Board.
6. The industry shall not discharge any fugitive emissions. All gases shall be emitted through a stack of suitable height, as per the norms fixed by the Board from time to time.
7. The industry shall provide port-holes, platforms and/or other necessary facilities as may be required for collecting samples of emissions from any chimney, flue or duct or any other outlets.

   Specifications of the port-holes shall be as under:-

   i) The sampling ports shall be provided atleast 8 times chimney diameter downstream and 2 times upstream from the flow disturbance. For a rectangular cross section the equivalent diameter (De) shall be calculated from the following equation to determine upstream, downstream distance:-

   De = 2 LW / (L+W)

   Where L= length in mts. W= Width in mts.

   ii) The sampling port shall be 7 to 10 cm in diameter
8. The industry shall put display Board indicating environmental data in the prescribed format at the main entrance gate.
9. The industry shall discharge all gases through a stack of minimum height as specified in the following standards laid down by the Board.

   (i) Stack height for boiler plants

S.NO.	Boiler with Steam Generating Capacity	Stack heights
1.	*Less than 2 ton/hr.*	9 meters or 2.5 times the height of neighboring building which ever is more
2.	*More than 2 ton/hr. to 5 ton/hr.*	12 meters
3.	*More than 5 ton/hr. to 10 ton/hr*	15 meters
4.	*More than 10 ton/hr. to 15 ton/hr*	18 meters
5.	*More than 15 ton/hr. to 20 ton/hr*	21 meters
6.	*More than 20 ton/hr. to 25 ton/hr.*	24 meters
7.	*More than 25 ton/hr. to 30 ton/hr.*	27 meters
8.	*More than 30 ton/hr.*	30 meters or using the formula H = 14 Qg0.3or H = 74 (Qp)0.24 Where Qg = Quantity of SO2 in Kg/hr. Qp = Quantity of particulate matter in Ton/day.

Note : Minimum Stack height in all cases shall be 9.0 mtr. or as calculated from relevant formula whichever is more.

(ii) For industrial furnaces and kilns, the criteria for selection of stack height would be based on fuel used for the corresponding steam generation.

(iii) Stack height for diesel generating sets:

Capacity of diesel generating set	Height of the Stack	
0-50 KVA	Height of the building	+ 1.5 mt
50-100 KVA	-do-	+ 2.0 mt.
100-150 KVA	-do-	+ 2.5 mt.
150-200 KVA	-do-	+ 3.0 mt.
200-250 KVA	-do-	+ 3.5 mt.
250-300 KVA	-do-	+ 3.5 mt.

For higher KVA rating stack height H (in meter) shall be worked out according to the formula:

$$H = h+0.2 (KVA)0.5$$

where h = height of the building in meters where the generator set is installed.

10. The pollution control devices shall be interlocked with the manufacturing process of the industry to ensure its regular operation.

11. The existing pollution control equipment shall be altered or replaced in accordance with the directions of the Board, and no pollution control equipment or chimney shall be altered or as the case may be erected or re-erected except with the prior approval of the Board.

12. The industry will provide canopy and adequate stack with the D.G sets so as to comply with the provision of notification No GSR-371 E dated 17-5-2002(amended from time to time) issued by MOEF under Environment (Protection) Act, 1986.

13. The Govt. of Punjab, Department of Science, Technology & Environment vide its notification no.4/46/92-3ST/2839 dt. 29/12/1993 has put prohibition on the use of rice husk as fuel after 1.4.1995 except the following:-

ï¿½In the form of briquettes and use of rice husk in fluidized bed combustion.So the industry shall make the necessary arrangement to comply with the above notification.ï¿½

14. The industry shall submit balance sheet of every financial year to the concerned Regional Office by 30th June of every year

15. That the industry shall submit a yearly certificate to the effect that no addition / up-gradation/ modification/ modernization has been carried out during the previous year otherwise the industry shall apply for the varied consent.

16. a) The industry shall ensure that at any time the emission do not exceed the prescribed emissions standards laid down by the Board from time to time for such type of industry /emissions.

    b) The industry shall ensure that the emissions from each stack shall conform to the following emission standards laid down by the Board in respect of the Industrial Boilers.

Steam Generating capacity A.	*Required particulate matter B.*	
Area upto 5 Km from Other than the periphery of I and Class-II town	*Other than 'A' class*	
Less than 2 ton/hr.	800 mg/NM3	1200 mg/NM3
2 ton to 10 ton/hr.	500 mg/NM3	1000 mg/NM3
Above 10 ton to 15 ton/hr	350 mg/NM3	500 mg/NM3
Above 15 ton/hr	150 mg/NM3	150 mg/NM3

All emissions normalized to 12% carbon dioxide.

17. The industry shall ensure that the Hazardous Wastes generated from the premises are handled as per the provisions of theHazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008, without any adverse effect on the environment, in any manner.

18. The air pollution control equipments shall be kept at all time in good running condition and;

(i) All failures of control equipments.

(ii) The emissions of any air pollutant into the atmosphere in excess of the standards lay down by the Board occurring or being apprehended to occur due to accident or other unforeseen act or event. 'Shall be intimated through fax to the concerned Regional Office as well as to the Director of Factories, Punjab, Chandigarh as required under rule 10 of the Punjab State Board for the Prevention and Control of Air Pollution Rules, 1983'.

19. The industry shall plant minimum of three suitable varieties of trees at the density of not less than 1000 trees per hectare all along the boundary of the industrial premises.

20. The industry shall submit a site emergency plan approved by the Chief Inspector of Factories, Punjab as applicable.

21. The industry shall comply with the conditions imposed by the SEIAA/MOEF in the Environmental Clearance granted to it as required under EIA notification dated 14/9/06, if applicable.

22. The industry shall make necessary arrangements for the monitoring of stack emissions and shall get its emissions analyzed from lab approved / authorized by the Board:-

(i) Once in Year for Small Scale Industries.

(ii) Twice/thrice/four time in a Year for Large/Medium Scale Industries.

23. The industry shall maintain the following record to the satisfaction of the Board :-

(i) Log books for running of air pollution control devices or pumps/motors used for it.

(ii) Register showing the result of various tests conducted by the industry for monitoring of stack emissions and ambient air.

(iii) Register showing the stock of absorbents and other chemicals to be used for scrubbers.

24. The industry will install the separate energy meter for running pollution control devices and shall maintain record with respect to operation of air pollution control device so as to the satisfy the Board regarding the regular operation of air pollution control device and monthly reading / record may be sent to the Board by the fifth of the following month.

25. The industry shall provide online monitoring system as applicable, for in stack emission and shall maintain the record of the same for inspection of the Board Officers.

26. The Board reserves the right to revoke the consent granted to the industry at any time, in case the industry is found violating the provisions of Air (Prevention & Control of Pollution) Act, 1981 as amended from time to time.

27. The industry shall comply with any other conditions laid down or directions issued in due course by the Board under the provisions of the Air (Prevention & Control of Pollution) Act, 1981.

28. Nothing in this consent shall be deemed to neither preclude the institution of any legal action nor relieve the applicant from any responsibilities, liabilities or penalties to which the applicant is or may be subjected to under this or any other Act.

29. Any amendments/revisions made by the Board/CPCB/MOEF in the emission/stack height standards shall be applicable to the industry from the date of such amendments/revisions.

30. The industry shall dispose off its solid waste generated by the burning of fuel in an Environmentally Sound Manner within the premises/outside as approved by the Board, to avoid public nuisance and air pollution problem in the area.

31. The industry shall ensure that no air pollution problem or public nuisance is created in the area due to the discharge of emissions from the industry.

32. The industry shall provide adequate arrangement for fighting the accidental leakage/discharge of any air pollutant/gas/ liquids from the vessels, mechanical equipment's etc, which are likely to cause environmental pollution.

33. The industry shall not change or alter the manufacturing process(es) and fuel so as to change the quality/quantity of emissions generated without the prior permission of the Board.

34. The industry shall earmark a land within their premises for disposal of boiler ash in an environmentally sound manner, and / or the industry shall make necessary arrangements for proper disposal of fuel ash in a scientific manner and shall maintain proper record for the same, if applicable.

35. The industry shall obtain and submit Insurance cover under the Public Liability Insurance Act, 1991.

36. The industry shall provide proper and adequate air pollution control arrangements for control emission from its fuel handling area, if applicable.

37. The industry shall comply with the code of practice as notified by the Government/Board for the type of industries where the siting guidelines / Code of Practice have been notified.

38. The industry shall not cause any nuisance/traffic hazard in vicinity of the area

39. The industry shall ensure that the noise & air emission from D.G. sets do not exceed the standards prescribed for D.G. sets by the Ministry of Environment & Forests, New Delhi.

40. The industry shall ensure that there will not be significant visible dust emissions beyond the property line

41. The industry shall provide adequate and appropriate air pollution control devices to contain emissions from handling, transportation and processing of raw material & product of the industry.

42. The Industry shall ensure that its production capacity does not exceed the capacity mentioned in the consent and shall not carry out any expansion without the prior permission / NOC of the Board.

B. SPECIAL CONDITIONS

1. The industrial shall comply with the conditions imposed in the Environmental Clearance issued to it under the EIA notification dated 14.09.2006.

2. The industry being a bulk waste generator of solid waste, shall ensure that bio-degradable waste shall be processed, treated and disposed of through composting or bio-methanation within the premises as far as possible, within 03 months and shall submit compliance of the same within 07 days thereafter.

3. The industry shall ensure the implementation of dynamic emission limit for dual flue stacks.

4. The industry shall install/operate online continuous effluent & stack emission monitoring systems and shall ensure the connectivity of the same with the server of PPCB & CPCB as per the directions issued by CPCB, New Delhi and shall ensure regular maintenance/ operation of the same with temper proof mechanisms having facilities for online calibration.

5. The promoter company shall comply with the provisions of Solid Waste Management Rules, 2016.

6. The industry shall ensure that the activities of unit does not create any nuisance in the surrounding areas and no public complaints are received.

7. This consent supersedes the earlier granted consent issued vide no. CTOA/Varied /BTI/2022/18070511 dated 09.05.2022.

8. The Consent is being issued to the industry based upon the documents/ information submitted by it alongwith the online application form. The Board would be at liberty to take penal action against the industry and its responsible/ concerned person(s) in case information/document is detected as incorrect/false/misleading at any point of time.

9. In case the industry fails to comply with the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, Environment (Protection) Act, 1986 and/or any other environmental law applicable to the project and Rules, Circulars & Directions issued by the Board from time to time, action as deemed fit shall be taken against the industry.

24/09/2022

(Kamal Singla)
Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

PUNJAB POLLUTION CONTROL BOARD

Invest Punjab, PBIP, Udyog Bhawan, Sector 17, Chandigarh.

Website:- www.ppcb.gov.in

Office Dispatch No : **Registered/Speed Post** **Date:**

Industry Registration ID: *R12BTI44706* **Application No :** *19705515*

To,

Sanket Thapar
Hpcl-mittal Energy Limited,guru Gobind Singh Refinery Project,village Phullokari,taluka Talwandi Saboo, District Bathinda.
Bathinda,Bathinda-151301

Subject: **Grant Varied 'Consent to Operate'an outlet u/s 25/26 of Water (Prevention & Control of Pollution) Act, 1974 for discharge of effluent.**

With reference to your application for obtaining Varied 'Consent to Operate' an outlet for discharge of the effluent u/s 25/26 of Water (Prevention & Control of Pollution) Act, 1974, you are, hereby, authorized to operate an industrial unit fordischarge of the effluent(s) arising out of your premises subject to the Terms and Conditions as mentioned in this Certificate

1. Particulars of Consent to Operate under Water Act, 1974 granted to the industry

Consent to Operate Certificate No.	*CTOW/Varied/BTI/2022/19705515*
Date of issue :	*24/09/2022*
Date of expiry :	*31/03/2025*
Certificate Type :	*Varied*
Previous CTO No. & Validity :	*CTOW/Varied/BTI/2022/18070534* *From:09/05/2022 To:30/09/2022*

2. Particulars of the Industry

Name & Designation of the Applicant	*Sanket Thapar, (Deputy General Manager)*
Address of Industrial premises	*Hpcl-mittal Energy Limited (guru Gobind Singh Refinery), Village Phullokari,taluka Talwandi Saboo,, Talwandi Sabo,Bathinda-151301*
Capital Investment of the Industry	*4245260.0 lakhs*
Category of Industry	*Red*
Type of Industry	*Oil Refinery*
Scale of the Industry	*Large*
Office District	*Bathinda*
Consent Fee Details	Rs. 86,40,000/- through online vide R.no. SBINR12022012763913528 dated 27.01.2022 under Water Act, 1974 against the fixed assets of Rs. 4245759/-, which is adequate upto 31.03.2025.
Raw Materials(Name with quantity per day)	*Crude Oil @33750Metric Tonnes/Day*

Products (Name with quantity per day)	*LPG @1780Metric Tonnes/Day* *Naphtha @0Metric Tonnes/Day* *Gasoline @2980Metric Tonnes/Day* *ATF @1200Metric Tonnes/Day* *Kerosene @300Metric Tonnes/Day* *Diesel @11838Metric Tonnes/Day* *Sulphur @641Metric Tonnes/Day* *Coke @1695Metric Tonnes/Day* *Hexane @15Metric Tonnes/Day* *Poly Propylene @1400Metric Tonnes/Day* *Motor Turpentine Oil @75Metric Tonnes/Day* *Bitumen @1500Metric Tonnes/Day* *HDPE/LLDPE @3586Metric Tonnes/Day* *PP-Regular @974Metric Tonnes/Day* *PP-Impact @450Metric Tonnes/Day* *Benzene @237Metric Tonnes/Day* *Mixed Xylenes @483Metric Tonnes/Day* *Low Sulphur Fuel Oil @45Metric Tonnes/Day*
By-Products, if any,(Name with quantity per day)	*As per the application form*
Details of the machinary and processes	*As per documents appended with application*
Details of the Effluent Treatment Plant	*Trade Effluent @15096.0 KLD (410m3/hr+185 m3/hr & 34 m3/hr from ethanol unit as per its CTE granted)* *1. ETP of capacity @ 500 KL/Hr consisting of -* *Primary Treatment Section :* *• American Petroleum institute (API) separators,* *• Tilted Plate interceptor (TPI) separator,* *• Diffused / Dissolved Air Floatation (DAF) system (having flash mixing tank, Flocculation tank, DAF tank and associated facilities).* *Secondary treatment section :* *• Sequential Batch Reactor (SBR)* *• Membrane Bio Reactor (MBR)* *2. ETP of capacity 185 KL/Hr consisting of* *API – TPI – DAF – SBR – MBR – Outlet.* *Domestic Effluent - after treatment in STP sent to the SBR section of the* *existing ETP of capacity 500 KL/Hr*
Mode of Disposal	*Treated trade effluent & treated domestic effluent (after existing ETP of capacity 500 KL/Hr) - onto land for planation within GGSR premises.* *Treated trade effluent (after ETP of capacity 185 KL/Hr) - To be reused back into process as cooling tower makeup water.*
Standards to be achieved under Water(Prevention & Control of Pollution) Act, 1974	*As prescribed by the CPCB/Board/ MoEF&CC*

24/09/2022

(Kamal Singla)
Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

Endst. No.: **Dated:**

A copy of the above is forwarded to the following for information and necessary action please:

1. Senior Environmental Engineer, Zonal Office, Bathinda.
2. Environmental Engineer, Regional Office, Bathinda, with the request to personally ensure that the industry shall make the compliance of EC conditions & other special conditions within stipulated time period.

24/09/2022

(Kamal Singla)
Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

PUNJAB

TERMS AND CONDITIONS

A. GENERAL CONDITIONS

1. This consent is not valid for getting power load from the Punjab State Power Corporation Limited or for getting loan from the financial institutions.
2. The industry shall apply for renewal/further extension in validity of consent atleast two months before expiry of the consent.
3. The industry shall ensure that the effluent discharging through the authorized outlet shall confirm to the prescribed standards as applicable from time to time.
4. The industry shall plant minimum of three suitable varieties of trees at the density of not less than 1000 trees per hectare all along the boundary of the industrial premises.
5. The achievement of the adequacy and efficiency of the effluent treatment plant/pollution control devices/re-circulation system installed shall be the entire responsibility of the industry.
6. The industry shall ensure that the Hazardous Wastes generated from the premises are handled as per the provisions of the Hazardous Wastes(Management, Handling and Trans boundary Movement) Rules, 2008 as amended time to time , without any adverse effect on the environment, in any manner
7. The responsibility to monitor the effluent discharged from the authorized outlet and to maintain a record of the same rests with the industry. The Board shall only test check the accuracy of these reports for which the industry shall deposit the samples collection and testing fee with the Board as and when required.
8. The industry shall submit balance sheet of every financial year to the concerned Regional Office by 30th June of every year.
9. The industry shall submit a yearly certificate to the effect that no addition/up-gradation/ modification/ modernization has been carried out during the previous year otherwise the industry shall apply for the varied consent.
10. During the period beginning from the date of issuance and the date of expiration of this consent, the applicant shall not discharge floating solids or visible foam.
11. Any amendments/revisions made by the Board in the tolerance limits for discharges shall be applicable to the industry from the date of such amendments/revisions.
12. The industry shall not change or alter the manufacturing process(es) so as to change the quality and/or quantity of the effluents generated without the written permission of the Board.
13. Any upset conditions in the plant/plants of the factory, which is likely to result in increased effluent and/or result in violation of the standards lay down by the Board shall be reported to the Environmental Engineer, Punjab Pollution Control Board of concerned Regional Office immediately failing which any stoppage and upset conditions that come to the notice of the Board/its officers, will be deemed to be intentional violation of the conditions of consent.
14. The industry shall provide terminal manhole(s) at the end of each collection system and a manhole upstream of final outlet (s) out of the premises of the industry for measurement of flow and for taking samples.
15. The industry shall for the purpose of measuring and recording the quantity of water consumed and effluent discharged, affix meters of such standards and at such places as approved by the Environmental Engineer, Punjab Pollution Control Board of the concerned Regional Office.
16. The industry shall maintain record regarding the operation of effluent treatment plant i.e. record of quantity of chemicals and energy utilized for treatment and sludge generated from treatment so as to satisfy the Board regarding regular and proper operation of pollution control equipment.
17. The industry shall provide online monitoring equipmentï¿½s for the parameters as decided by concerned Regional Office with the effluent treatment plant/air pollution control devices installed, if applicable.
18. The pollution control devices shall be interlocked with the manufacturing process of the industry.
19. The authorized outlet and mode of disposal shall not be changed without the prior written permission of the Board.
20. The industry shall comply with the conditions imposed by the SEIAA / MOEF in the environmental clearance granted to it as required under EIA notification dated14/9/06, if applicable.
21. The industry shall obtain and submit Insurance cover as required under the Public Liability Insurance Act, 1991.
22. The industry shall not use any unauthorized out-let(s) for discharging effluents from its premises. All unauthorized outlets, if any, shall be connected to the authorized outlet within one month from the date of issue of this consent.

23. The industry shall make necessary arrangements for the monitoring of effluent being discharged by the industry and shall monitor its effluents:-

    (i) Once in Year for Small Scale Industries.

    (ii) Four in a Year for Large/Medium Scale Industries.

    (iii) The industry will submit monthly reading/ data of the separate energy meter installed for running of effluent treatment plant/re-circulation system to the concerned Regional Office of the Board by the 5th of the following month.

24. The industry shall provide electromagnetic flow meters at the source of water supply, at inlet/outlet of effluent treatment plant within one month and shall maintain the record of the daily reading and submit the same to the concerned Regional Office by the 5th of the following month.

25. The Board reserves the right to revoke this consent at any time in case the industry is found violating any of the conditions of this consent and/or the provisions of Water (Prevention & Control of Pollution) Act, 1974 as amended from time to time.

26. The issuance of this consent does not convey any property right in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State or Local Laws or Regulations.

27. The consent does not authorize or approve the construction of any physical structures or facilities for undertaking of any work in any natural watercourse.

28. Nothing in this consent shall be deemed to neither preclude the institution of any legal action nor relieve the applicant from any responsibilities, liabilities or penalties to which the applicant is or may be subjected under this or any other Act.

29. The industry shall make necessary and adequate arrangements to hold back the effluent in case of failure of septic tank.

30. The diversion or bye pass of any discharge from facilities utilized by the applicant to maintain compliance with the terms and conditions of this consent is prohibited except.

    (i) Where unavoidable to prevent loss of life or some property damage or

    (ii) Where excessive storm drainage or run off would damage facilities necessary for compliance with terms and conditions of this consent. The applicant shall immediately notify the consent issuing authority in writing of each such diversion or bye-pass.

31. The industry shall ensure that no water pollution problem is created in the area due to discharge of effluents from its industrial premises.

32. The industry shall comply with the code of practice as notified by the Government/ Board for the type of industries where the siting guidelines/ code of practice have been notified.

33. Solids, sludge, filter backwash or other pollutant removed from or resulting from treatment or control of waste waters shall be disposed off in such a manner to prevent any pollutants from such materials from entering into natural water.

34. The industry shall re-circulate the entire cooling water and shall also re-circulate/reuse to the maximum extent the treated effluent in processes

35. The industry shall make necessary and adequate arrangements to hold back the effluent in case of failure of re-circulation system/ effluent treatment plant.

36. The industry shall make proper disposal of the effluent so as to ensure that no stagnation occurs inside and outside the industrial premises during rainy season and no demand period.

37. Where excessive storm water drainage or run off, would damage facilities necessary for compliance with terms and conditions of this consent, the applicant shall immediately notify the consent issuing authority in writing of each such diversion or bye-pass.

38. The industry shall submit a detailed plan showing therein the distribution system for conveying waste-water for application on land for irrigation along with the crop pattern for the year.

39. The industry shall ensure that the effluent discharged by it is toxicity free.

40. The industry shall not irrigate the vegetable crops with the treated effluents which are used/ consumed as raw.

41. Drains causing oil & grease contamination shall will be segregated. Oil & grease trap shall be provided to recover oil & grease from the effluent.

42. The industry shall establish sufficient number of piezometer wells in consultation with the concerned Regional Office, of the Board to monitor the impact on the Ground Water Quantity due to the industrial operations, and the monitoring shall be submitted to the Environmental Engineer of the concerned Regional Office by the 5th of every month.

43. The industry shall ensure that its production capacity & quantity of trade effluent do not exceed the quantity mentioned in the consent and shall not carry out any expansion without the prior permission/NOC of the Board.

B. SPECIAL CONDITIONS

1. The industrial shall comply with the conditions imposed in the Environmental Clearance issued to it under the EIA notification dated 14.09.2006.

2. The industry being a bulk waste generator of solid waste, shall ensure that bio-degradable waste shall be processed, treated and disposed of through composting or bio-methanation within the premises as far as possible, within 03 months and shall submit compliance of the same within 07 days thereafter.

3. The industry shall get the effluent monitoring of the ETP of capacity 185 KL/Hr, carried out by the Board, within 01 month.

4. The industry shall recycle the entire quantity of effluent after treatment in ETP of capacity 185 KL/Hr, within its process(es), at all times.

5. The industry shall install CCTV cameras on the ETP of capacity 185 KL/Hr.

6. In case, the untreated effluent of Refinery Plant crosses 450 KL/hr, then the Ethanol Plant shall install separate ETP as per undertaking dated 03.08.2022 submitted by it.

7. The industry shall install/operate online continuous effluent & stack emission monitoring systems and shall ensure the connectivity of the same with the server of PPCB & CPCB as per the directions issued by CPCB, New Delhi and shall ensure regular maintenance/ operation of the same with temper proof mechanisms having facilities for online calibration.

8. The industry shall maintain its green belt as per the Karnal technology and shall provide proper pipeline network for scientific distribution of its treated effluent, at all times.

9. The industry shall make necessary and adequate arrangements to hold back the effluent in case of failure of re-circulation system / effluent treatment plant and during no demand period.

10. The entire responsibility of adequacy and efficacy of the treatment & disposal of effluent, shall be of the industry.

11. The industry shall obtain permission from the PWRDA for the abstraction of ground water and shall comply with guidelines issued by it from time to time.

12. The industry shall not discharge the effluent into any drain/choe/nallah/river/inland surface water under any circumstances in any case.

13. The industry company shall ensure that there is no obstruction to natural flow of rainwater due to activity of the industry.

14. The promoter company shall comply with the provisions of Solid Waste Management Rules, 2016.

15. The industry shall ensure that the activities of unit does not create any nuisance in the surrounding areas and no public complaints are received.

16. This consent supersedes the earlier granted consent issued vide no. CTOW/Varied/BTI/2022/18070534 dated 09.05.2022.

17. The Consent is being issued to the industry based upon the documents/ information submitted by it alongwith the online application form. The Board would be at liberty to take penal action against the industry and its responsible/ concerned person(s) in case information/document is detected as incorrect/false/misleading at any point of time.

18. In case the industry fails to comply with the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, Environment (Protection) Act, 1986 and/or any other environmental law applicable to the project and Rules, Circulars & Directions issued by the Board from time to time, action as deemed fit shall be taken against the industry.

24/09/2022

(Kamal Singla)
Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

ANNEXURE-XI

Annexure-XI

Corporate Environmental Responsibility (CER) plan for 8 years (from 2022-23 to 2029-30) of 8 villages

BS-VI Fuel Quality up-gradation project at Guru Gobind Singh Refinery by M/s HPCL-Mittal Energy Limited (HMEL) at Village Phulokhari, Talika Talwandi Sabo, District Bhathinda (Punjab).

Sr. No.	Activities	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	Total Budget (in Crores)
1	De-silting of ponds	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.45
2	Repair of ponds & drains leading to ponds	0.07	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.5
3	Treatment facility for influent water to pond & utilization for irrigation purpose	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.2
4	Tree plantation in community /avenue area	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.11	0.9
Total		**0.28**	**0.28**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**0.25**	**2.05**

ANNEXURE-XII

Annexure-XII

The Tribune
BATHINDA | THURSDAY | 9 AUGUST 2018

HPCL-Mittal Energy Limited (HMEL)
(A JV between HPCL and MEI Pte. Ltd.)
Village Phullokari, Taluka - Talwandi Sabo
District - Bathinda - 151301, PUNJAB
Website : www.hmel.in

HMEL®

PUBLIC NOTICE

HPCL-Mittal Energy Limited hereby brings to the notice of the general public that Ministry of Environment, Forest and Climate Change (MOEF&CC), New Delhi has granted Environmental Clearance for Fuel Quality Upgradation Project at Guru Gobind Singh Refinery, Village - Phullokari, Taluka - Talwandi Sabo, District - Bathinda (Punjab) vide letter no J-11011/386/2016-IA-II(I) dated 7th August, 2018.

Copies of clearance letter are available with Punjab Pollution Control Board and may be seen on website of Ministry at http://moef.nic.in

Authorized Signatory
HPCL-Mittal Energy Limited

Punjab News Paper Ajit, dated 9th Aug'18

ਐਚ ਪੀ ਸੀ ਐਲ-ਮਿੱਤਲ ਐਨਰਜੀ ਲਿਮਟਿਡ (ਐਚ ਐਮ ਈ ਐਲ)
(ਐਚ ਪੀ ਸੀ ਐਲ ਅਤੇ ਐਮ ਈ ਆਈ ਪੀ ਟੀ ਈ ਲਿਮਟਿਡ ਦਰਮਿਆਨ ਇਕ ਜੇ ਵੀ)
ਪਿੰਡ ਫੁੱਲੋਕਾਰੀ, ਤਾਲੁਕਾ-ਤਲਵੰਡੀ ਸਾਬ
ਜ਼ਿਲ੍ਹਾ ਬਠਿੰਡਾ-151301, ਪੰਜਾਬ
ਵੈੱਬਸਾਈਟ www.hmel.in

HMEL®

ਜਨਤਕ ਸੂਚਨਾ

ਐਚ ਪੀ ਸੀ ਐਲ-ਮਿੱਤਲ ਐਨਰਜੀ ਲਿਮਟਿਡ ਦੁਆਰਾ ਆਮ ਜਨਤਾ ਦੇ ਧਿਆਨ ਵਿਚ ਲਿਆਂਦਾ ਜਾਂਦਾ ਹੈ ਕਿ ਵਾਤਾਵਰਨ, ਜੰਗਲਾਤ ਅਤੇ ਜਲਵਾਯੂ ਤਬਦੀਲੀ ਮੰਤਰਾਲਾ (ਐਮ ਓ ਈ ਐਂਡ ਸੀ ਸੀ), ਨਵੀਂ ਦਿੱਲੀ ਨੇ ਪੱਤਰ ਨੰਬਰ: ਜੇ-11011/386/2016-ਆਈ.ਏ-II (I) ਮਿਤੀ 7 ਅਗਸਤ, 2018 ਦੁਆਰਾ ਗੁਰੂ ਗੋਬਿੰਦ ਸਿੰਘ ਰੀਫਾਇਨਰੀ, ਪਿੰਡ ਫੁੱਲੋਕਾਰੀ, ਤਾਲੁਕਾ-ਤਲਵੰਡੀ ਸਾਬੋ, ਜ਼ਿਲ੍ਹਾ ਬਠਿੰਡਾ (ਪੰਜਾਬ) ਵਿਖੇ ਫਿਊਲ ਕੁਆਲਟੀ ਅਪਗ੍ਰੇਡੇਸ਼ਨ ਪ੍ਰਾਜੈਕਟ ਲਈ ਵਾਤਾਵਰਨਿਕ ਕਲੀਅਰੈਂਸ ਪ੍ਰਦਾਨ ਕੀਤੀ ਹੈ।
ਕਲੀਅਰੈਂਸ ਪੱਤਰ ਦੀਆਂ ਕਾਪੀਆਂ ਪੰਜਾਬ ਪ੍ਰਦੂਸ਼ਣ ਰੋਕਥਾਮ ਬੋਰਡ ਕੋਲ ਉਪਲਬਧ ਹਨ ਅਤੇ ਮੰਤਰਾਲੇ ਦੀ ਵੈੱਬਸਾਈਟ http://moef.nic.in ਤੇ ਦੇਖੀਆਂ ਜਾ ਸਕਦੀਆਂ ਹਨ।

— ਅਧਿਕਾਰਤ ਸਿਗਨੇਟਰੀ
ਐਚ ਪੀ ਸੀ ਐਲ-ਮਿੱਤਲ ਐਨਰਜੀ ਲਿਮਟਿਡ

ANNEXURE-XIII

Duration= 1st April, 2022 to 30th September, 2022					
Station= Effluent Treatment Plant					
APRIL					
SR.no	**Parameter**	**Minimum**	**Maximum**	**Average**	**CPCB Std.**
1	**COD**	60	70	65	**125**
2	**BOD**	6	8	7	**15**
3	**TSS**	4	6	5	**100**
4	**PH**	7.2	7.6	7.4	**6-8.5**
5	**FLOW**	200	320	260	**N/A**
MAY					
SR.no	**Parameter**	**Minimum**	**Maximum**	**Average**	**CPCB Std.**
1	**COD**	60	70	65	**125**
2	**BOD**	6	8	7	**15**
3	**TSS**	4	6	5	**100**
4	**PH**	7.2	7.6	7.4	**6-8.5**
5	**FLOW**	200	319	259	**N/A**
JUNE					
SR.no	**Parameter**	**Minimum**	**Maximum**	**Average**	**CPCB Std.**
1	**COD**	60	70	65	**125**
2	**BOD**	6	8	7	**15**
3	**TSS**	4	6	5	**100**
4	**PH**	7.2	7.6	7.4	**6-8.5**
5	**FLOW**	200	320	260	**N/A**
JULY					
SR.no	**Parameter**	**Minimum**	**Maximum**	**Average**	**CPCB Std.**
1	**COD**	60	70	65	**125**
2	**BOD**	6	8	7	**15**
3	**TSS**	4	6	5	**100**
4	**PH**	7.2	7.6	7.4	**6-8.5**
5	**FLOW**	69	320	194	**N/A**
AUGUST					
SR.no	**Parameter**	**Minimum**	**Maximum**	**Average**	**CPCB Std.**
1	**COD**	60	70	65	**125**
2	**BOD**	6	8	7	**15**
3	**TSS**	4	6	5	**100**
4	**PH**	7.2	7.6	7.4	**6-8.5**
5	**FLOW**	200	7.6	260	**N/A**
SEPTEMBER					
SR.no	**Parameter**	**Minimum**	**Maximum**	**Average**	**CPCB Std.**
1	**COD**	60	70	64	**125**
2	**BOD**	6	8	7	**15**
3	**TSS**	4	6	5	**100**
4	**PH**	7.2	7.6	7.4	**6-8.5**
5	**FLOW**	200	320	260	**N/A**