

Received
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भारत सरकार / Govt. of India
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forests & Climate Change
ब्लॉक 24-25, सेक्टर 31-ए
चण्डीगढ़ 160 030



Date: 4th Dec, 2020
Ref: HMEL-TS-40-ENV 797

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 Compliance Report (From Apr'2020 to Sep'2020) for Guru Gobind Singh Refinery at Phullokhari, Bathinda District, Punjab.

Ref: 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 Apr'2020 to Sep'2020) 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: Central Pollution Control Board, First Floor, PIC-UP Building, Vibuti Khand, Gomtinagar, Lucknow, UP
Cc: Punjab Pollution Control Board, Zonal Office, Street No. 12, Power House Road, Bathinda, Punjab

Enclosures: Six monthly compliance report from Apr'2020 to Sep'2020.

Annexure-I : Soft copy of original test reports of manual monitoring in CD.

Annexure-II : Online Ambient Air Quality monitoring Data (from Apr'2020 to Sep'2020).

Annexure-III: CSR activities carried out for improving socio-economic conditions (from Apr'2020 to Sep'2020).

Annexure-IV: CSR activities carried out for community welfare including eco-developmental measures in the surrounding areas (from Apr'2020 to Sep'2020).

Annexure- V : Copy of the advertisement publishing the accordance of Environmental Clearance by MoEF&CC.

Annexure- VI: Copy of mail to MoEF&CC for action plan of Corporate Environment Responsibility (CER).

Annexure-VII: Copy of Air CTO & Water CTO (Consent to Operate).

Annexure-VIII: Acknowledgement copy of last submitted Six Monthly Compliance Report to MoEF&CC, Northern Regional Office, Chandigarh.

HPCL-Mittal Energy Limited

Corporate Office: INOX Towers, Plot No. 17, Sector 16-A, NOIDA-201301 (U.P.) INDIA; Tel: +91 120 4634500; Fax: +91 120 4271940; Website: www.hmel.in
Regd. Office: Village Phulokhari, Taluka Talwandi Saboo, Bathinda, Punjab-151301; CIN: U23201PB2000PLC024126

Compliance Report for the conditions stipulated in Environmental Clearance for Expansion of Refinery from 9 MMTPA to 11.25 MMTPA by HMEL at Village Phullokhari, Tehsil Talwandi Saboo, Dist. Bhatinda, Punjab for the period of Apr' 2020 to Sep' 2020.

EC Letter No.: J-11011/275/2007 IA II (I) date 22nd June 2015

A. Specific Conditions

S. No.	Specific Conditions as per EC dated 22 nd June 2015	Compliance Status																																							
i	Compliance to all the environmental conditions stipulated in the environmental clearance letter no. J 11011/24/98-IA II dated 6 th November 1998 and J-11011/275/2007-IA II dated 16 th July 2007 shall be satisfactorily implemented and compliance reports submitted to the Ministry's regional office at Chandigarh.	<p>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:</p> <table><tr><th>EC grant year</th><th>No. of Conditions</th><th>No of Conditions Complied</th><th>No of conditions 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>	EC grant year	No. of Conditions	No of Conditions Complied	No of conditions pending	2007	24	24	Nil	1998	26	26	Nil																											
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ii	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 18 th March 2008.	<p>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 summary of the treated effluent and emissions are summarized below:</p> <table><tr><th>Parameters</th><th>Range Typical Values</th><th>Limits</th></tr><tr><td colspan="3">ETP treated Water</td></tr><tr><td>pH</td><td>7.42-7.84</td><td>6.0-8.5</td></tr><tr><td>COD</td><td>87.5-110 mg/l</td><td>125 mg/l</td></tr><tr><td>BOD</td><td>11.8-13.9 mg/l</td><td>15 mg/l</td></tr><tr><td colspan="3">Stack Emissions*</td></tr><tr><th>Parameters</th><th>Range Typical Values</th><th>Limits</th></tr><tr><td>SO_x</td><td>5.38-302.19 mg/Nm³</td><td>500- 645 mg/Nm³</td></tr><tr><td>NO_x</td><td>10.31-198.32 mg/Nm³</td><td>250 - 335 mg/Nm³</td></tr><tr><td>PM</td><td>2.4-53.89 mg/Nm³</td><td>39 – 50 mg/Nm³</td></tr><tr><td>CO</td><td>2.41-72.18 mg/Nm³</td><td>100 – 300 mg/Nm³</td></tr><tr><td colspan="3">* Stack emissions limits has been computed based on mixed firing.</td></tr><tr><td colspan="3">Sulphur Recovery Unit</td></tr></table>	Parameters	Range Typical Values	Limits	ETP treated Water			pH	7.42-7.84	6.0-8.5	COD	87.5-110 mg/l	125 mg/l	BOD	11.8-13.9 mg/l	15 mg/l	Stack Emissions*			Parameters	Range Typical Values	Limits	SO _x	5.38-302.19 mg/Nm ³	500- 645 mg/Nm ³	NO _x	10.31-198.32 mg/Nm ³	250 - 335 mg/Nm ³	PM	2.4-53.89 mg/Nm ³	39 – 50 mg/Nm ³	CO	2.41-72.18 mg/Nm ³	100 – 300 mg/Nm ³	* Stack emissions limits has been computed based on mixed firing.			Sulphur Recovery Unit		
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S. No.	Specific Conditions as per EC dated 22 nd June 2015	Compliance Status										
		Parameters	Range Typical Values	Limits								
		Sulphur Recovery (in %)	99.94 – 99.95	99.9								
		H ₂ S (in mg/Nm ³)	0-5	10								
		NO _x (in mg/Nm ³)	34-70	250								
		CO (in mg/Nm ³)	19-50	100								
		The stack emission data for the refinery and effluent analysis report for the treated effluent is attached as Annexure-I .										
		Hence, this condition has been complied with.										
iii	Continuous online stack monitoring of SO ₂ , NO _x & CO of all stacks shall be carried out. Low NO _x burners shall be installed.	Continuous online stack monitoring analyzers for SO ₂ , NO _x , CO and SPM have been installed in all stacks and the data is being transmitted online to CPCB servers. Low NO _x burners have been installed in all the boilers and heaters.										
		Hence, this condition has been complied with.										
iv	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.	ESPs and stacks of 130 meter 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.										
v	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.	The continuous emission monitoring systems (CEMS) data on gaseous emissions and particulate matter from various units are being transmitted online to CPCB 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 – I .										
		There was no failure of any of the pollution control system during the period.										
		Hence, this condition has been complied with.										
vi	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 e.t.c must be regularly monitored. Sensors for detecting HC leakage shall be provided at strategic locations.	LDAR program for the refinery has been prepared and implemented for control of HC/VOC emissions. The program focuses on preventive maintenance of pumps, compressors, flanges and valves. During Apr' 2020 to Sep' 2020, total 21,000 nos. of points has been monitored under LDAR program and no major leak was found. Sensors for detecting HC leakage has 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>742</td></tr><tr><td>Hydrocarbon(analyzer shelter)</td><td>74</td></tr><tr><td>Toxic gases + Hydrogen</td><td>285</td></tr></table>			Type of Detector	Numbers	Hydrocarbon (process area)	742	Hydrocarbon(analyzer shelter)	74	Toxic gases + Hydrogen	285
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vii	SO ₂ emissions after expansion from the plant shall no exceed 23.64 TPD and further efforts	The total SO ₂ emission from the Guru Gobind Singh Refinery has been modified to 23.64 TPD, vide										

S. No.	Specific Conditions as per EC dated 22 nd June 2015	Compliance Status																					
	shall be made for reduction of SO ₂ load through use of low sulphur fuel. Sulphur recovery units shall be installed for control of H ₂ S emissions. The overall sulphur recovery efficiency of sulphur recovery unit with tail gas treating shall not be less than 99.9 %.	MOEF&CC letter no. J-11011/386/2016-IA-II (I) dated 07 th August 2018, which includes emissions from the expansion projects. SO ₂ emission from the existing refinery remained in the range of 16.8 TPD to 18.62 TPD against the limit of 23.64 TPD. The overall sulphur recovery efficiency of Sulphur Recovery Unit with tail gas treatment for the compliance period was 99.94% – 99.95%.																					
viii	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.	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.																					
ix	Flare gas recovery system shall be installed.	Flare recovery system is in operation. The month wise HC recovery (from Apr' 2020 to Sep' 2020) is given below: <table><tr><th>Month</th><th>HC Recovery (MT)</th></tr><tr><td>Apr'20</td><td>453</td></tr><tr><td>May'20</td><td>447</td></tr><tr><td>Jun'20</td><td>435</td></tr><tr><td>July'20</td><td>527</td></tr><tr><td>Aug'20</td><td>524</td></tr><tr><td>Sep'20</td><td>572</td></tr><tr><td>Average</td><td>493</td></tr></table>	Month	HC Recovery (MT)	Apr'20	453	May'20	447	Jun'20	435	July'20	527	Aug'20	524	Sep'20	572	Average	493					
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x	Ambient air quality monitoring stations, (PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , H ₂ S, 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.	The GLC's (min-max) for various parameters for the period of Apr' 2020 to Sep' 2020 are given below: <table><tr><th>Parameters</th><th>Range</th><th>CPCB Limit</th></tr><tr><td>PM₁₀ (µg/m³)</td><td>10.82 – 328.32</td><td>100</td></tr><tr><td>PM_{2.5} (µg/m³)</td><td>7.15 – 168.39</td><td>60</td></tr><tr><td>SO₂ (µg/m³)</td><td>0.66 – 56.07</td><td>80</td></tr><tr><td>NO₂ (µg/m³)</td><td>13.50 – 25.73</td><td>80</td></tr><tr><td>Benzene (µg/m³)</td><td>0.20 – 4.29</td><td>05</td></tr><tr><td>Non – Methane HC (µg/m³)</td><td>0.384 – 1.246</td><td>-</td></tr></table> The ambient air quality in and around the refinery for the period Apr' 2020 to Sep' 2020 is attached as Annexure – II. Hence, this condition has been complied with.	Parameters	Range	CPCB Limit	PM ₁₀ (µg/m ³)	10.82 – 328.32	100	PM _{2.5} (µg/m ³)	7.15 – 168.39	60	SO ₂ (µg/m ³)	0.66 – 56.07	80	NO ₂ (µg/m ³)	13.50 – 25.73	80	Benzene (µg/m ³)	0.20 – 4.29	05	Non – Methane HC (µg/m ³)	0.384 – 1.246	-
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S. No.	Specific Conditions as per EC dated 22 nd June 2015	Compliance Status																
xi	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.	<p>In the existing refinery, one emergency DG set (for use in case of power failure) of capacity 6 MW has been installed near Main Control Room with stack height of 30 meter.</p> <p>Acoustic enclosure has been provided to the DG set to mitigate the noise pollution.</p> <p>No additional DG set is provided under this project.</p>																
xii	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 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).	<p>The total water usage and industrial effluent generation/reuse quantities are well within the stipulated limits.</p> <p>Average consumption of raw water for the period Apr' 2020 to Sep' 2020 is 1,946 m³/hr, the data of which is given below:</p> <table><tr><th>Month</th><th>Raw water consumption (m³/hr.)</th></tr><tr><td>Apr'20</td><td>1813</td></tr><tr><td>May'20</td><td>1945</td></tr><tr><td>Jun'20</td><td>1998</td></tr><tr><td>July'20</td><td>1924</td></tr><tr><td>Aug'20</td><td>2046</td></tr><tr><td>Sep'20</td><td>1949</td></tr><tr><td>Average</td><td>1946</td></tr></table> <p>The permission for drawl of water from Kotla canal is obtained vide letter no. 021/2014- (2) 1128-4426/1 dated 30.07.2018.</p> <p>The treated effluent generated is in the range of 390 – 422 m³/hr and Boiler blowdown for period of Apr'2020 to Sep'2020 is in range of 28-33 m3/hr.</p> <p>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.</p> <p>During Apr' 2020 to Sep' 2020, entire treated effluent from ETP was used for horticulture /green belt development.</p> <p>Average 50m³/day of sewage was treated in domestic sewage treatment plant.</p>	Month	Raw water consumption (m ³ /hr.)	Apr'20	1813	May'20	1945	Jun'20	1998	July'20	1924	Aug'20	2046	Sep'20	1949	Average	1946
Month	Raw water consumption (m ³ /hr.)																	
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xiii	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.	<p>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 transmitted to CPCB portal. 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.</p> <p>The summary of the treated effluent quality for the period Apr' 2020 to Sep' 2020 is given below:</p> <table border="1"> <thead> <tr> <th>Parameters</th><th>Range</th><th>Limits</th></tr> </thead> <tbody> <tr> <td colspan="3">ETP treated Water</td></tr> <tr> <td>pH</td><td>7.42-7.84</td><td>6.0-8.5</td></tr> <tr> <td>COD</td><td>87.5-110 mg/l</td><td>125 mg/l</td></tr> <tr> <td>BOD</td><td>11.8-13.9 mg/l</td><td>15 mg/l</td></tr> <tr> <td>TSS</td><td>15.3-19.3 mg/l</td><td>20 mg/l</td></tr> </tbody> </table>	Parameters	Range	Limits	ETP treated Water			pH	7.42-7.84	6.0-8.5	COD	87.5-110 mg/l	125 mg/l	BOD	11.8-13.9 mg/l	15 mg/l	TSS	15.3-19.3 mg/l	20 mg/l
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xiv	Oil catchers / oil traps shall be provided at all possible locations in rain / storm water drainage system inside factory premises.	Presently 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.	<p>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.</p> <p>The annual returns (Form-IV) of hazardous waste containing the data for oily sludge that is generated & disposed for the period of 2019-20 was submitted vide letter no. HMEL-TS-40-ENV 473 on dated 1st June, 2020.</p> <p>During Apr' 2020 to Sep' 2020, 6767 MT oily and chemical sludge reprocessed in Delayed Coker Unit.</p>																		
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.	<p>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.</p> <p>Hence, this condition is complied with.</p>																		
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 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.	<p>The refinery has an operational Secured Landfill (SLF) facility within the complex. Non-recyclable or non-reprocessible hazardous waste from the existing as well as expansion units are disposed in this SLF. Hence, membership for the common TSDF has not been taken.</p> <p>Spent catalyst from various units are disposed to SPCB authorized recyclers/reprocessors.</p> <p>Hence, this condition is complied with.</p>																		

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xviii	Proper oil spillage prevention management plan shall be prepared to avoid spillage/leakage of oil/petroleum products and ensure regular monitoring.	<div>The oil spillage/leakage prevention management plan is in place. HC and toxic gas detectors are installed in the process area, the details of which are given below:</div> <table><tr><th>Type of Detector</th><th>Numbers</th></tr><tr><td>Hydrocarbon (process area)</td><td>742</td></tr><tr><td>Hydrocarbon (analyzer shelter)</td><td>74</td></tr><tr><td>Toxic gases + Hydrogen</td><td>285</td></tr></table> <div>In addition to the above 80 nos. of visual camera are also installed in the process area for early detection of leak/fire.</div>	Type of Detector	Numbers	Hydrocarbon (process area)	742	Hydrocarbon (analyzer shelter)	74	Toxic gases + Hydrogen	285										
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xix	The company shall strictly follow all the recommendations mentioned in Charter on Corporate Responsibility for Environmental Protection (CREP).	<div>The CREP recommendations implementation status is as under:</div> <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 sold to offsite reprocessors or disposed in SLF.</td></tr><tr><td>4</td><td>Installation of VOC collection and treatment system in ETP.</td><td>Completed. Since design stage VOC collection and treatment system is installed and operational in ETP.</td></tr><tr><td>5</td><td>Air Emission reduction measures adopted.</td><td>a. Use of Low Sulphur Fuel Oil and Fuel Gas in Refinery (<0.5 % sulphur in FO & < 150 mg/nm³ sulphur in FG).</td></tr></table>	Sr No	Requirement of CREP	Status	1	Installation of online monitoring system	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.	2	Zero Liquid Discharge	Completed. GGSR is ZLD refinery. Entire treated water from ETP is used for greenbelt / horticulture development.	3	Oily Sludge management	Oily sludge generated from ETP is processed in DCU or 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).
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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).																		

S. No.	Specific Conditions as per EC dated 22 nd June 2015	Compliance Status		
				<p>b. Use of low NOx burners in all heaters and boilers to minimize NOx emissions.</p> <p>c. Stack heights have been provided in line with minimum stack height criteria as per CPCB Standards</p> <p>d. Installation of Third Stage Separator (TSS) and Fourth Stage Separator (FSS) in FCC to minimize particulate matter emissions</p> <p>e. Floating roofs are provided in storage tanks to minimize the fugitive emissions.</p> <p>f. VOC emission treatment at ETP to minimize fugitive emissions.</p> <p>g. Closed Blow down System to minimize hydrocarbon emissions.</p> <p>h. LDAR program implemented.</p>
xx	Occupational Health Surveillance of the workers should be done on regular basis and records maintained as per Factories Act.	<p>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.</p> <p>The condition is complied with.</p>		
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.	<p>Green belt has been developed in consultation with Forest Department, Bathinda and as per the CPCB guidelines. Approx. 3,40,000 saplings have been planted in about 356 acre. Greenbelt of 125 meters wide has been developed in predominant wind directions i.e. East, South East, South, South West & West direction and 70 meters wide in the remaining directions i.e. North West, North, and North East directions.</p>		
xxii	Company shall prepare project specific environmental manual and a copy shall be made available at the project site for the compliance.	<p>Project Environmental Requirements was furnished to the Design and Engineering Contractor and the Projects Team for incorporating the environmental specifications/requirements during the design engineering phase of the project so as to ensure compliance to the regulatory requirements.</p>		

S. No.	Specific Conditions as per EC dated 22 nd June 2015	Compliance Status
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.	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 14 th October, shall be satisfactorily implemented. Accordingly provision of budget to be kept.	Total 13 queries were raised during Public Hearing for the expansion project. 12 queries has been completed. 1 query was related to shifting of 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.	The details of Enterprise Social Responsibility are enclosed as Annexure-III . The time bound action plan of which has been submitted to RO, MoEF&CC, Chandigarh. Hence, the condition is complied with.
xxvi	Company shall adopt Corporate Environment Policy as per the Ministry's O.M No. J-11013/41/2006-IA II (I) dated 26 th April 2011 and implemented.	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.	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 is complied with.

B. General Conditions

S. No.	General Conditions as per EC dated 22 nd June 2015	Compliance
i	The project authorities shall strictly adhere to the stipulations made by the State Government & Punjab Pollution Control Board.	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.	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 7 th 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.

S. No.	General Conditions as per EC dated 22 nd June 2015	Compliance
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.	Five (5) nos. of Continuous Ambient Air Quality Monitoring stations have been installed in consultation with PPCB in upwind & down wind direction 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).	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 for the period Apr' 2020 to Sep' 2020 was in the range of 62.1-74.9 dBA and 52.1-69.1 dBA respectively. Please refer Annexure-I ambient noise monitoring reports.
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.	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.	The authorization for collection, storage & disposal of Hazardous waste is available for refinery and is valid till 30 July'2020.
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 been constructed.
viii	Usage of Personal Protection Equipment's by all employees/workers should be ensured.	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.	Each worker is imparted safety training before issuing gate pass and refresher training is done every 6 months. Periodic medical examination is done six monthly for workers working in operational area and yearly for workers working in non-operational area. This condition is being complied with.
x	The company shall also comply with all the environmental protection measures and safeguards 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.	This condition is complied with.

S. No.	General Conditions as per EC dated 22 nd June 2015	Compliance
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-III .
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-IV .
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.	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.
xv	A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parishad / Municipal Corporation Urban local Body and the local NGO, if any, from who suggestions /representations, if any, were received while processing the proposal.	This condition has been complied with. 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 Environmental Clearance conditions including results of the monitored data are being sent to regional offices of MoEF&CC, CPCB and PPCB vide letter no. HMEL-TS-40-ENV 744, dated 19 th June, 2020. 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 31 st 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	This condition is being complied with. The environment statement for each financial year ending 31 st 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

S. No.	General Conditions as per EC dated 22 nd June 2015	Compliance
	the Chandigarh Regional offices of MOEF by e-mail.	
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 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.	The accordance of Environmental Clearance for the project was advertised in two widely circulated local newspaper namely Tribune Bathinda (English) and Ajit (Punjabi) on 30 th 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 7 th July, 2015.
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: <ol style="list-style-type: none"> 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 Compliance Report from Apr' 2020 to Sep' 2020 for Environment Clearance in respect of Fuel Quality Up-gradation Project at Guru Gobind Singh Refinery, Village Phulokhari, Bathinda District, Punjab.

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

10.0: Specific Conditions

S. No. (As per EC letter)	Specific Conditions	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.	The following measures have been implemented to minimize the emissions from the proposed project: <ol style="list-style-type: none"> 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.
(ii)	The project proponent shall develop local air quality management plan in consultation with SPCB and implemented to achieve desired standards.	The local air quality management plan has been prepared and submitted to PPCB vide letter no. HMEL-TS-40-ENV 644, dated 24 th May'19. Thus, this condition is being complied with.
(iii)	The incremental ground level concentration (GLCs) for PM ₁₀ , PM _{2.5} , SO ₂ & NO _x due to the increased vehicular and other allied/developmental activities, shall be analysed and reported for actual impact of the project.	The condition will be complied with after fully operational of project.
(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.	The Consent to Establish (CTE) for the project has been obtained from PPCB vide letter no. 2940 dated 6 th May'19. The Consent to Operate (CTO) for the project has been obtained from PPCB vide letter no. 3488, dated 02.11.2020 fir Air and letter no. 2333, dated 04.08.2020 for Water. Hence, the condition is being complied with.
(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.	The existing refinery complex is a Zero Liquid Discharge (ZLD) refinery. The additional effluent that will be generated from the project will be treated in the existing ETP. 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 is available for refinery and is valid till 30 th July, 2020.
(vii)	National Emission Standards for Petroleum Oil Refinery issued by the Ministry vide G.S.R. 186(E) dated 18 th 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.

S. No. (As per EC letter)	Specific Conditions	Compliance Status																
(viii)	Total SO ₂ emission from the refinery shall not exceed 990 kg/hr.	This condition will be complied with. Exiting SO ₂ emission: Average 604.8 kg/hr to 703.8 kg/hr.																
(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.	The DHDT and HGU plants are designed to meet prescribed CPCB/PPCB norms for the refinery. During emergency shutdown of these units, the gaseous emissions will be routed to the flare stack of height 140 m.																
(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.	<p>The total water usage and industrial effluent generation/reuse quantities are well within the stipulated limits.</p> <p>Average consumption of raw water for the period Apr' 2020 to Sep' 2020 is 1,946 m³/hr, the data of which is given below:</p> <table><tr><th>Month</th><th>Raw water consumption (m³/hr.)</th></tr><tr><td>Apr'20</td><td>1813</td></tr><tr><td>May'20</td><td>1945</td></tr><tr><td>Jun'20</td><td>1998</td></tr><tr><td>July'20</td><td>1924</td></tr><tr><td>Aug'20</td><td>2046</td></tr><tr><td>Sep'20</td><td>1949</td></tr><tr><td>Average</td><td>1946</td></tr></table> <p>The additional water required after the implementation of proposed project for which the EC has been granted will not exceed 5,952 m³/hr. Necessary permission from the concerned regulatory authority is already obtained. This condition will be complied with.</p>	Month	Raw water consumption (m ³ /hr.)	Apr'20	1813	May'20	1945	Jun'20	1998	July'20	1924	Aug'20	2046	Sep'20	1949	Average	1946
Month	Raw water consumption (m ³ /hr.)																	
Apr'20	1813																	
May'20	1945																	
Jun'20	1998																	
July'20	1924																	
Aug'20	2046																	
Sep'20	1949																	
Average	1946																	
(xi)	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.	<p>The process effluent from the proposed project will be routed to existing ETP for treatment through dedicated pipe network, whereas the storm water routed to separate network (open channels) to avoid mixing of process effluent with storm water. The same has been incorporated in the design engineering for the project.</p> <p>The condition is being complied with.</p>																
(xii)	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.	All hydrocarbons are stored in tanks. No new tank is proposed to be installed in the project. Hydrocarbon transfer is done through pumps. This condition is complied with.																
(xiii)	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.	Any additional ETP sludge generated will be recycled back in DCU. Fly ash generated from CFBC boilers is disposed to cement industries.																

S. No. (As per EC letter)	Specific Conditions	Compliance Status
(xiv)	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 chemicals shall be as per the Motor Vehicle Act (MVA), 1989.	As per the existing practice, this condition will be complied with.
(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.	Fly ash generated from CFBC boilers is stored in 2 nos. of silos and is then sent to cement industries. Thus condition is being complied with.
(xvi)	The company shall undertake waste minimization measures as below:- <ul style="list-style-type: none"> 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 	The condition will be complied with. <ul style="list-style-type: none"> a. All feed stream flow will be measured & auto controlled. b. No by-products will be produced in BS-VI fuel quality up-gradation project. c. Raw material and products will be transferred through pipe lines. d. As the process flow will be continuous, batch reactors are not proposed. Hence, not applicable. e. Ventilation equipment will be connected to closed flare system in which flared hydrocarbons are recovered. f. Noted and will be 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 species shall be as per the CPCB guideline in consultation with State Forest Department.	Green belt has been developed in consultation with Forest Department, Bathinda, as per the CPCB guidelines. At present approx. 3,40,000 saplings have been planted in about 356 acre of land. A greenbelt of about 125 meters wide in predominant wind direction i.e East, South East, South, South West, & West direction and 70 meters wide green belt in the remaining directions i.e North West, North, and North East direction have been developed. Selection of species for greenbelt development have been done based on the agro-climatic zone of Punjab prescribed by CPCB in its manual "Guidelines for Developing Greenbelts". Hence, this condition is complied with.
(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-VI .

S. No. (As per EC letter)	Specific Conditions	Compliance Status
		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: 66 lakhs.
(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.	One D.G. set of 1010 kVA has been installed for emergency power for the fuel quality up-gradation project. The emission limits and the stack height will be in conformity with the CPCB guidelines. Acoustic enclosures has been provided as noise control measures.
(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.	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	Online SO ₂ , NO _x , CO and SPM analysers for the existing refinery have been installed and the online data is being transmitted to CPCB 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 SO _x , NO _x , CO and PM have been installed & the online data will be transmitted to CPCB/PPCB after the commissioning of the project.
(xxii)	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Complied. 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. This condition is being complied with.

10.1: Generic Conditions

S. No. (As per EC letter)	General 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.	All the conditions stipulated by the MoEF&CC, CPCB and PPCB are being strictly adhered to.
(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.	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	Five (5) nos. of Continuous Ambient Air Quality Monitoring Stations (CAAQMS) have been installed at

	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.	the periphery of the refinery in consultation with Punjab Pollution Control Board (PPCB). Hence, this condition is complied with.
(iv)	The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R No 826(E) dated 16 th November, 2009 shall be followed.	The National Ambient Air Quality Emission Standards issued by MoEF&CC vide G.S.R. No 826 (E) dated 16 th November 2009 is being monitored and the data of which is being transmitted online to CPCB servers.
(v)	The overall noise levels in and around the plant area shall be kept well within the standards by providing 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).	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 for the period Apr' 2020 to Sep' 2020 was in the range of 62.1-74.9 dBA and 52.1-69.1 dBA respectively. The detailed monitoring reports for the period of Apr' 2020 to Sep' 2020 is given in Annexure-I . Hence, this condition has been complied with.
(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	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.
(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.	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. This condition is being complied with.
(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 activities shall be undertaken by involving local villages and administration.	This condition is being complied with. Details of activities undertaken for improving socio-economic conditions of the surrounding areas is attached as Annexure-III .
(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-IV .
(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	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 will not be diverted for any other purpose.

	conditions stipulated herein. The funds so earmarked for environment management/ pollution control measures shall 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.	<p>The company did not received any suggestions/representations while processing the proposal.</p> <p>This condition has been complied with.</p>
(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.	<p>This condition has been noted and is being complied with.</p> <p>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 744, dated 19th June, 2020.</p> <p>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</p>
(xiv)	The environment statement for each financial year ending 31 st 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.	<p>The environment statement for each financial year ending 31st March in Form-V is being submitted to PPCB for the existing refinery project.</p> <p>Similarly, for the proposed project the environmental statement in Form-V as mandated will be submitted to PPCB.</p>
(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	<p>The copy of the advertisement publishing the accordance of Environmental Clearance by MoEF&CC in the two local widely circulated newspaper is attached as Annexure-V.</p> <p>Hence, this condition has been complied with.</p>
(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.	<p>This condition will be complied with.</p> <p>The requested projects milestones are as follows:</p> <ol style="list-style-type: none"> 1. Final board approval of the Project: 30th December, 2016. 2. Financial closure of the Project: Financial closure is pending 3. Start of the Project: 6th May, 2019.

**Scanned copy of original Manual Environmental Monitoring Test
reports Apr'2020**

BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: **HPCL-Mittal Energy Limited**

Village Phullokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No.: NL/100004000,4008,4016,4024,4032,4040,4048, 4056

Test Report Date: 15/05/2020

Sample Particulars

Nature of the Sample

Sampling Location

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**

: Ambient Air Quality Monitoring Station (AAQMS)-1

: To Check the Pollution Load

: IS 5182 (Part 14)

: Mr. Animesh Jha

: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR for 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
03/04/2020	09:40	1.00	4.827	BDL	BDL	BDL
06/04/2020	09:55	1.11	5.092	BDL	BDL	BDL
10/04/2020	09:30	1.10	4.054	BDL	BDL	BDL
13/04/2020	09:46	1.11	3.937	BDL	BDL	BDL
17/04/2020	09:50	1.11	4.216	BDL	BDL	BDL
20/04/2020	09:40	1.21	3.193	BDL	BDL	BDL
24/04/2020	10:10	1.20	4.943	BDL	BDL	BDL
28/04/2020	10:20	1.12	4.902	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)

Remark:

*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

Report No.: NL/100004001,4009,4017,4025,4033,4041,4049, 4059
Test Report Date: 15/05/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-2
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR for RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m ³	Arsenic (as As), ng/m ³	Benzo(a)pyren e (as BAP*), ng/m ³	Lead (as Pb), µg/m ³
03/04/2020	09:55	1.10	4.451	BDL	BDL	BDL
06/04/2020	10:10	1.18	3.871	BDL	BDL	BDL
10/04/2020	09:45	1.14	5.027	BDL	BDL	BDL
13/04/2020	09:58	1.10	3.132	BDL	BDL	BDL
17/04/2020	10:10	1.12	4.726	BDL	BDL	BDL
20/04/2020	09:55	1.04	4.212	BDL	BDL	BDL
24/04/2020	10:25	1.20	3.028	BDL	BDL	BDL
28/04/2020	10:35	1.11	4.018	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)

Remark:

*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0],Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No.: NL/100004002,4010,4018,4026,4034,4042,4050,406C
Test Report Date: 15/05/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-3
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR for 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
03/04/2020	10:15	1.12	4.102	BDL	BDL	BDL
06/04/2020	10:25	1.10	3.028	BDL	BDL	BDL
10/04/2020	10:00	1.09	5.017	BDL	BDL	BDL
13/04/2020	10:15	1.12	4.121	BDL	BDL	BDL
17/04/2020	10:25	1.20	4.927	BDL	BDL	BDL
20/04/2020	10:10	1.14	3.218	BDL	BDL	BDL
24/04/2020	10:40	1.21	4.272	BDL	BDL	BDL
28/04/2020	10:50	1.10	4.827	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)

Remark:

*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No.: NL/100004003,4011,4019,4027,4035,4043,4051,4061
Test Report Date: 15/05/2020

Sample Particulars

Nature of the Sample

Sampling Location

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**

: Ambient Air Quality Monitoring Station (AAQMS)-4

: To Check the Pollution Load

: IS 5182 (Part 14)

: Mr. Animesh Jha

: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR for 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
03/04/2020	10:30	1.10	4.726	BDL	BDL	BDL
06/04/2020	10:40	1.14	4.928	BDL	BDL	BDL
10/04/2020	10:15	1.10	2.938	BDL	BDL	BDL
13/04/2020	10:30	1.14	3.291	BDL	BDL	BDL
17/04/2020	10:40	1.11	5.211	BDL	BDL	BDL
20/04/2020	10:25	1.14	4.101	BDL	BDL	BDL
24/04/2020	10:55	1.20	4.821	BDL	BDL	BDL
28/04/2020	11:10	1.11	3.682	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)

Remark:

*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.

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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No.: NL/100004004,4012,4020,4028,4036,4044,4052,4062
Test Report Date: 15/05/2020

Sample Particulars

Nature of the Sample

Sampling Location

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**

: Ambient Air Quality Monitoring Station (AAQMS)-5

: To Check the Pollution Load

: IS 5182 (Part 14)

: Mr. Animesh Jha

: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR for RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m ³	Arsenic (as As), ng/m ³	Benzo(a)pyren e (as BAP), ng/m ³	Lead (as Pb), µg/m ³
03/04/2020	10:40	1.10	3.651	BDL	BDL	BDL
06/04/2020	10:55	1.21	4.085	BDL	BDL	BDL
10/04/2020	10:30	1.21	5.132	BDL	BDL	BDL
13/04/2020	10:45	1.02	4.283	BDL	BDL	BDL
17/04/2020	10:55	1.10	5.254	BDL	BDL	BDL
20/04/2020	10:40	1.10	3.132	BDL	BDL	BDL
24/04/2020	11:10	1.12	4.207	BDL	BDL	BDL
28/04/2020	11:25	1.14	3.154	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)

Remark:

*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (38)], [Part-II-sec.-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0]
BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample
Analysed within Three days after Receipt.

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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phullokhar, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

Report No.: NL/100004005,4013,4021,4029,4037,4045,4053,406:
Test Report Date: 15/05/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: Ambient Air Quality Monitoring

: Ambient Air Quality Monitoring Station (AAQMS)-6
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR for 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
03/04/2020	10:55	1.11	3.928	BDL	BDL	BDL	61.2	89.3	19.2	28.3	0.436
06/04/2020	11:10	0.99	4.432	BDL	BDL	BDL	59.3	91.2	20.1	29.3	0.451
10/04/2020	10:45	1.12	2.321	BDL	BDL	BDL	55.1	83.4	23.1	23.4	0.162
13/04/2020	10:58	1.10	5.591	BDL	BDL	BDL	54.2	92.1	17.2	25.4	0.213
17/04/2020	11:10	1.11	4.612	BDL	BDL	BDL	50.9	97.4	19.4	24.2	0.331
20/04/2020	10:55	1.12	3.632	BDL	BDL	BDL	56.7	92.3	21.1	23.3	0.487
24/04/2020	11:20	1.14	4.132	BDL	BDL	BDL	53.2	93.1	20.4	21.2	0.254
28/04/2020	11:35	1.12	5.292	BDL	BDL	BDL	58.9	94.4	18.7	26.7	0.271
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)	Gravi metric	IS:5182 (P-23)	IS:5182 (P-2)	IS:5182 (P-6)	NDIR Method

Remark:
*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(I)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0] Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004056

Test Report Date: 15/05/2020

Sample Particulars:

Nature of the Sample : **Ambient Noise**
Date of Monitoring : 27/04/2020
Purpose of Monitoring : To Check the Pollution Load
Place of Monitoring : HMEL Refinery
Monitoring Conducted By : Mr. Animesh Jha
Protocol Used : IS: 9989

Analysis Report

Sr. No.	Location	Test Result dB(A) Day Time	Test Result dB(A) Night Time
Permissible Limit in *dB(A) Leq For Industrial Area		75 dB(A)	70 dB(A)
1	Near Refinery Main Gate	72.1	67.2
2	Near Fire Water Reservoir	65.2	64.1
3	Near Road Crude Oil Tanks	70.4	61.2
4	Near ETP and Flare	67.2	64.3
5	Near Storm Water Pond East Side	68.7	60.2
6	Near Sulphur Yard South East Side	70.3	59.3
7	Near Rail Loading Dispatch South East Side	72.1	57.6
8	Near CPP North East Side	73.2	66.1
9	Near Poly Propylene Dispatch Area	71.2	61.2
10	Near Ecological Pond Area	72.1	60.1

*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	Limits dB (A) Leq	
		Day Time (6AM - 10PM)	Night Time (10PM - 06AM)
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokharī, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004111
Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 20/04/2020
Time of Sampling	: 10:00
Test Started on	: 08/05/2020
Test Completed On	: 14/05/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: HGU-1
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 70
Diameter of the stack (m)	: 2.6
Sampling duration (min)	: 32

Observations:

Flue Gas Temperature °C	: 171
Ambient Air Temperature °C	: 30
Flue Gas Velocity (m/s)	: 10.90

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	7.38	42	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	11.48	693	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	117.32	330	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	11.4	140	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Below Detection Limit

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(RAVINDER MITTAL)

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004112
Test Report Date: 15/05/2020

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 20/04/2020
Time of Sampling	: 11:00
Test Started on	: 08/05/2020
Test Completed On	: 14/05/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: HGU-2
Sampling method	: IS-11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 70
Diameter of the stack(m)	: 2.6
Sampling duration (min)	: 31
Observations:	
Flue Gas Temperature °C	: 168
Ambient Air Temperature °C	: 31
Flue Gas Velocity (m/s)	: 11.10

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	2.82	38	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	12.36	636	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	112.23	323	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	14.5	137	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Below Detection Limit


(AUTHORISED SIGNATORY)
(RAVINDER MITTAL)

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004098
Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 14/04/2020
Time of Sampling	: 15:40
Test Started on	: 08/05/2020
Test Completed On	: 14/05/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: DCU
Sampling method	: IS-11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 65
Diameter of the stack (m)	: 3.14
Sampling duration (min)	: 34

Observations:

Flue Gas Temperature °C	: 155
Ambient Air Temperature °C	: 34
Flue Gas Velocity (m/s)	: 9.73

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	3.9	43	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	34.47	719	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	75.32	334	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	35.47	142	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected



(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004113
Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 20/04/2020
Time of Sampling	: 12:15
Test Started on	: 08/05/2020
Test Completed On	: 14/05/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: Naphtha Heater
Sampling method	: IS-11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 30
Diameter of the stack(m)	: 1.2
Sampling duration (min)	: 37

Observations:

Flue Gas Temperature °C	: 288
Ambient Air Temperature °C	: 33
Flue Gas Velocity (m/s)	: 7.52

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	3.8	41	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	12.47	679	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	34.21	329	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	43.34	139	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004100

Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 14/04/2020
Time of Sampling	: 12:15
Test Started on	: 08/05/2020
Test Completed On	: 14/05/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: CCR Heater
Sampling method	: IS-11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 68
Diameter of the stack(m)	: 2.5
Sampling duration (min)	: 34

Observations:

Flue Gas Temperature °C	: 190
Ambient Air Temperature °C	: 32
Flue Gas Velocity (m/s)	: 10.55

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	2.4	40	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	14.39	659	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	45.98	326	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	18.30	138	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004099

Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 14/04/2020
Time of Sampling	: 11:10
Test Started on	: 08/05/2020
Test Completed On	: 14/05/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: NHT
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 50
Diameter of the stack(m)	: 1.2
Sampling duration (min)	: 37

Observations:

Flue Gas Temperature °C	: 230
Ambient Air Temperature °C	: 30
Flue Gas Velocity (m/s)	: 10.73

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	6.8	39	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	34.28	645	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	41.48	324	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	20.39	137	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected

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Test Report

Issued to: HPCL-Mittal Energy Limited

Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004101

Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample : **Stack Gas Emission**
Date of Sampling : 15/04/2020
Time of Sampling : 12:30
Test Started on : 08/05/2020
Test Completed On : 14/05/2020
Purpose of monitoring : To Check the Pollution Load
Sampling Location : FCCU-Regenerator
Sampling method : IS: 11255 (P-7)
Normal Operating Schedule : As per requirement
Type of Stack /Duct : Mild Steel
Stack height from Ground Level (m) : 42
Diameter of the Stack(m) : 3.3
Sampling Duration (min) : 30

Observations:

Flue Gas Temperature °C : 227
Ambient Air Temperature °C : 35
Flue Gas Velocity (m/s) : 13.90

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	100 % Coke as Fuel (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	23.2	50	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	9.29	500	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	10.31	350	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	54.28	300	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	2	USEPA Method 29 By AAS

Remark: Not Detected



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004102
Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 15/04/2020
Time of Sampling	: 10:15
Test Started on	: 08/05/2020
Test Completed On	: 14/05/2020
Purpose of Monitoring	: To Check the Pollution Load
Sampling Location	: FCCU Heater
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 80
Diameter of the Stack(m)	: 1.75
Sampling Duration (min)	: 45

Observations:

Flue Gas Temperature °C	: 219
Ambient Air Temperature °C	: 33
Flue Gas Velocity (m/s)	: 8.62

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	4.9	41	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	13.28	678	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	26.57	328	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	9.18	139	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected

(AUTHORISED SIGNATORY)

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004115
Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 24/04/2020
Time of Sampling	: 11:20
Test Started on	: 08/05/2020
Test Completed On	: 14/05/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: SRU 524
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 100
Diameter of the stack(m)	: 2.0
Sampling duration (min)	: 30

Observations:

Flue Gas Temperature °C	: 170
Ambient Air Temperature °C	: 32
Flue Gas Velocity (m/s)	: 13.43

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	100 % Fuel Gas (in mg/Nm ³)	Test Method
1	Oxide of Nitrogen (as NO _x)	49.28	250	IS-11255(P-7)
2	Carbon Monoxide (as CO)	21.17	100	IS-13270
3	Oxides of Sulphur (as SO _x)	149.39	N.A.	IS-11255 (P-2)
4	Hydrogen Sulphide (as H ₂ S)	BDL(LOQ-0.1)	10	IS:11255 (P-4)

Remark: Not Detected



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004116

Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 24/04/2020
Time of Sampling	: 12:35
Test Started on	: 08/05/2020
Test Completed On	: 14/05/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: SRU 525
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 100
Diameter of the stack(m)	: 2.0
Sampling duration (min)	: 30
Observations:	
Flue Gas Temperature °C	: 174
Ambient Air Temperature °C	: 32
Flue Gas Velocity (m/s)	: 13.75

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Limits 100 % Fuel Gas (in mg/Nm ³)	Test Method
1	Oxide of Nitrogen (as NO _x)	45.15	250	IS-11255(P-7)
2	Carbon Monoxide (as CO)	29.10	100	IS-13270
3	Oxides of Sulphur (as SO _x)	159.38	NA	IS-11255 (P-2)
4	Hydrogen Sulphide (as H ₂ S)	BDL(LOQ-0.1)	10	IS:11255 (P-4)

Remark: Not Detected

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004097
Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 13/04/2020
Time of Sampling	: 12:00
Test Started on	: 08/05/2020
Test Completed On	: 14/05/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: CDU/VDU
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 85
Diameter of the stack(m)	: 4.3
Sampling duration (min)	: 37

Observations:

Flue Gas Temperature °C	: 156
Ambient Air Temperature °C	: 34
Flue Gas Velocity (m/s)	: 9.30

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	7.2	40	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	56.59	659	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	19.21	326	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	13.23	138	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected



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(RAVINDER MITTAL)

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004103
Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 16/04/2020
Time of Sampling	: 10:30
Test Started on	: 08/05/2020
Test Completed On	: 14/05/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: HRSG-I
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 35
Diameter of the stack(m)	: 3.5
Sampling duration (min)	: 38
Observations:	
Flue Gas Temperature °C	: 148
Ambient Air Temperature °C	: 30
Flue Gas Velocity (m/s)	: 8.76

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	5.3	44	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	5.38	730	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	184.21	335	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	9.29	143	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004104
Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 16/04/2020
Time of Sampling	: 12:10
Test Started on	: 08/05/2020
Test Completed On	: 14/05/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: HRSG-2
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 35
Diameter of the stack (m)	: 3.5
Sampling duration (min)	: 37

Observations:

Flue Gas Temperature °C	: 146
Ambient Air Temperature °C	: 32
Flue Gas Velocity (m/s)	: 8.92

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	4.2	44	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	5.39	730	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	156.28	335	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	11.22	143	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004109
Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 16/04/2020
Time of Sampling	: 10:05
Test Started on	: 08/05/2020
Test Completed On	: 14/05/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: VGO Heater
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 65
Diameter of the stack(m)	: 2.25
Sampling duration (min)	: 36

Observations:

Flue Gas Temperature °C	: 160
Ambient Air Temperature °C	: 30
Flue Gas Velocity (m/s)	: 9.52

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	5.9	41	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	9.29	676	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	41.28	328	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	47.68	139	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004110
Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 18/04/2020
Time of Sampling	: 11:20
Test Started on	: 08/05/2020
Test Completed On	: 14/05/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: DHDT-1
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 75
Diameter of the stack (m)	: 2.25
Sampling duration (min)	: 37

Observations:

Flue Gas Temperature °C	: 158
Ambient Air Temperature °C	: 32
Flue Gas Velocity (m/s)	: 9.32

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	4.3	40	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	13.29	666	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	29.19	327	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	67.27	138	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected



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Test Report

Issued to: HPCL-Mittal Energy Limited

Village Phulokhari, Taluka Talwandi Sabo

Distt. Bhatinda, Punjab, India

Report No. : NL/100004108

Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 18/04/2020
Time of Sampling	: 14:00
Test Started on	: 08/05/2020
Test Completed On	: 14/05/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: UB-4
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 100
Diameter of the stack(m)	: 3.0
Sampling duration (min)	: 30
Observations:	
Flue Gas Temperature °C	: 128
Ambient Air Temperature °C	: 37
Flue Gas Velocity (m/s)	: 11.22

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	53.29	44	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	302.19	730	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	189.25	335	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	2.41	143	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004117

Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 25/04/2020
Time of Sampling	: 11:35
Test Started on	: 08/05/2020
Test Completed On	: 14/05/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: UB-6
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 130
Diameter of the stack(m)	: 3.25
Sampling duration (min)	: 30

Observations:

Flue Gas Temperature °C	: 133
Ambient Air Temperature °C	: 34
Flue Gas Velocity (m/s)	: 13.10

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Pet Coke Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	49.2	150	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	198.38	400	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	145.57	300	IS-11255 (P-7)

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004107
Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 17/04/2020
Time of Sampling	: 11:35
Test Started on	: 08/05/2020
Test Completed On	: 14/05/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: UB-3
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 100
Diameter of the stack(m)	: 3.0
Sampling duration (min)	: 30

Observations:

Flue Gas Temperature °C	: 130
Ambient Air Temperature °C	: 37
Flue Gas Velocity (m/s)	: 12.06

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	5.92	44	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	8.29	730	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	92.18	335	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	2.82	143	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004105

Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 17/04/2020
Time of Sampling	: 12:10
Test Started on	: 08/05/2020
Test Completed On	: 14/05/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: UB-1
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 100
Diameter of the stack(m)	: 3.0
Sampling duration (min)	: 30
Observations:	
Flue Gas Temperature °C	: 129
Ambient Air Temperature °C	: 37
Flue Gas Velocity (m/s)	: 11.78

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	4.2	44	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	8.19	730	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	102.39	335	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	2.78	143	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

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Test Report

Issued to: HPCL-Mittal Energy Limited

Village Phullokharī, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004106

Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample

Date of Sampling

Time of Sampling

Test Started on

Test Completed On

Purpose of monitoring

Sampling Location

Sampling method

Normal operating schedule

Type of stack /duct

Stack height from Ground Level (m)

Diameter of the stack(m)

Sampling duration (min)

Observations:

Flue Gas Temperature °C

Ambient Air Temperature °C

Flue Gas Velocity (m/s)

: Stack Gas Emission

: 17/04/2020

: 12:50

: 08/05/2020

: 14/05/2020

: To Check the Pollution Load

: UB-2

: IS: 11255 (P-7)

: As per requirement

: Mild Steel

: 100

: 3.0

: 30

: 132

: 37

: 11.55

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	4.9	44	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	9.20	730	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	104.28	335	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	3.27	143	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS



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Test Report

Issued to: HPCL-Mittal Energy Limited

Village Phullokhar, Taluka Talwandi Sabo

Distt. Bhatinda, Punjab, India

Report No. : NL/100004081-4091

Test Report Date: 15/05/2020

Sample Particulars:

Nature of the Sample & No. of Samples

Sample Quantity & Packaging

Test Started on

Test Completed

Method of Sampling

Date of Sampling

Sampling Conducted By

: Ground Water & Eleven Samples

: 2.0 Liter, Pet Bottle

: 08/05/2020

: 14/05/2020

: SOP/B/D-3

: 29/04/2020

: Mr. Manmohan Singh

Analysis Report

Parameter	pH	Odour	Color	Taste	Temperature	Turbidity	TDS	Alkalinity as (CaCO ₃)	Total Hardness as (CaCO ₃)	Chlorides	Fluorides
Location											
GW1	7.32	Agreeable	<5	Agreeable	25.8	<1	652	154	276	178.2	0.72
GW2	7.652	Agreeable	<5	Agreeable	26.4	<1	567	231	226	201.3	0.78
GW3	7.29	Agreeable	<5	Agreeable	27.9	<1	532	193	231	189.1	0.73
GW4	7.38	Agreeable	<5	Agreeable	26.5	<1	618	231	263	271.2	0.81
GW5	7.34	Agreeable	<5	Agreeable	26.7	<1	465	189	253	126.5	0.70
GW6	7.39	Agreeable	<5	Agreeable	25.4	<1	552	201	325	143.2	0.76
GW7	7.41	Agreeable	<5	Agreeable	25.6	<1	476	182	201	159.2	0.89
GW8	7.43	Agreeable	<5	Agreeable	26.7	<1	423	231	197	180.2	0.84
GW9	7.46	Agreeable	<5	Agreeable	27.4	<1	534	182	212	167.2	0.73
GW10	7.50	Agreeable	<5	Agreeable	26.3	<1	465	201	265	190.2	0.80
GW11	7.43	Agreeable	<5	Agreeable	27.1	<1	510	254	293	145.3	0.71
IS 500 Desirable	6.5-8.5	Agreeable	5	Agreeable	-	1	500	200	200	250	1.0
IS 500 Permissible	6.5-8.5	Agreeable	15	Agreeable	-	5	2000	600	600	1000	1.5
Protocol	IS:3025 (P-11)	IS:3025 (P-5)	IS:3025 (P-4)	IS:3025 (P-7)	IS:3025 (P-9)	APHA 23rd Ed.	IS:3025 (P-16)	IS:3025 (P-23)	IS: 3025 (P-21)	IS:3025 (P-21)	APHA 23rd Ed.

Remark:

GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond - North East Side, GW3: Near Ecological Pond West Side, GW4: Near Ecological Pond South East Side
GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water Block Area, GW7: Near RO/DM Plant East Side
Area GW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side, GW10: Secured Landfill Area South Side, GW11: Near ETP South Side

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004081-4091
Test Report Date: 15/05/2020

Analysis Report

Parameter		Calcium as Ca	Magnesium as Mg	Sulphate	Nitrates	Phenolic Compounds	Iron (as Fe)	Mercury (as Hg)	Zinc (as Zn)	Cadmium (as Cd)	Chromium (as Cr)	Arsenic (as As)
GW1		50.28	34.28	145.28	16.8	BDL	0.37	BDL	BDL	BDL	BDL	BDL
GW2		38.29	16.29	119.29	15.5	BDL	0.28	BDL	BDL	BDL	BDL	BDL
GW3		50.15	25.48	123.29	13.9	BDL	0.38	BDL	BDL	BDL	BDL	BDL
GW4		47.47	34.37	129.39	16.8	BDL	0.31	BDL	BDL	BDL	BDL	BDL
GW5		36.75	29.10	121.21	21.2	BDL	0.29	BDL	BDL	BDL	BDL	BDL
GW6		41.27	25.28	121.61	18.4	BDL	0.34	BDL	BDL	BDL	BDL	BDL
GW7		47.29	21.28	119.29	18.2	BDL	0.32	BDL	BDL	BDL	BDL	BDL
GW8		48.76	34.27	117.24	16.5	BDL	0.25	BDL	BDL	BDL	BDL	BDL
GW9		51.27	38.28	119.29	17.2	BDL	0.21	BDL	BDL	BDL	BDL	BDL
GW10		53.26	37.65	129.38	13.2	BDL	0.29	BDL	BDL	BDL	BDL	BDL
GW11		52.25	32.18	132.18	17.2	BDL	0.36	BDL	BDL	BDL	BDL	BDL
IS 10500	Desirable	75	30	200	45	0.001	1	0.001	5	0.003	0.05	0.01
	Permissible	200	100	400	No Relaxation	0.002	No Relaxation	No Relaxation	15	No Relaxation	No Relaxation	0.05
Protocol		IS:3025 (P-40)	IS:3025 (P-46)	APHA 23 rd Ed.	IS:3025 (P-34)	IS:3025 (P-43)	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.

Remark:

GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond - North East Side, GW3: Near Ecological Pond West Side, GW4: Near Ecological Pond South East Side
GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water Block Area, GW7: Near RO/DM Plant East Side Area
GW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side, GW10: Secured Landfill Area South Side, GW11: Near ETP South Side



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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004081-4091

Test Report Date: 15/05/2020

Analysis Report

Parameter		Lead (as Pb)	Boron (as B)	Cyanid e (as CN*)	Selenium (as Se*)	RFC	Polycyclic Aromatic Hydrocarbon s (PAH*)	Mineral Oil*	Anionic Detergent*	Aluminum (as Al)
GW1		BDL	0.42	BDL	BDL	BDL	BDL	BDL	BDL	BDL
GW2		BDL	0.21	BDL	BDL	BDL	BDL	BDL	BDL	BDL
GW3		BDL	0.26	BDL	BDL	BDL	BDL	BDL	BDL	BDL
GW4		BDL	0.29	BDL	BDL	BDL	BDL	BDL	BDL	BDL
GW5		BDL	0.32	BDL	BDL	BDL	BDL	BDL	BDL	BDL
GW6		BDL	0.48	BDL	BDL	BDL	BDL	BDL	BDL	BDL
GW7		BDL	0.34	BDL	BDL	BDL	BDL	BDL	BDL	BDL
GW8		BDL	0.32	BDL	BDL	BDL	BDL	BDL	BDL	BDL
GW9		BDL	0.29	BDL	BDL	BDL	BDL	BDL	BDL	BDL
GW10		BDL	0.26	BDL	BDL	BDL	BDL	BDL	BDL	BDL
GW11		BDL	0.35	BDL	BDL	BDL	BDL	BDL	BDL	BDL
as per S:1 050 0	Desi rable	0.01	0.5	0.05	0.01	0.2	0.0001	0.5	0.2	0.03
	Per mi ssibl e	No Relaxat ion	1.0	No	No	1.0	No	No	1.0	0.2
Protocol		APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.

Remark:

GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond - North East Side, GW3: Near Ecological Pond West Side, GW4: Near Ecological Pond South East Side
GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water Block Area, GW7: Near RO/DM Plant East Side
Area GW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side, GW10: Secured Landfill Area South Side, GW11: Near ETP South Side

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004066-4080

Test Report Date: 15/05/2020

Sample Particulars:

Nature of the Sample

Date of Monitoring

Purpose of Monitoring

Place of Monitoring

Monitoring Conducted By

Protocol Used

: Volatile Organic Carbon

: 28/04/2020

: To Check the Pollution Load

: HMEL Refinery

: Mr. Animesh Jha

: Portable PID Based Gas Detector for VOC's - Honeywell RAE

Analysis Report

Sr. No.	Locations	Test Results (PPM)
1	Near ETP	0.5
2	Near Rail Gantry	BDL
3	Near Road Gantry	BDL
4	Battery limits of CDU/VDU	BDL
5	Battery limits of FCCU	BDL
6	Battery limits of DHDT-1	BDL
7	Battery limits of VGO-HDT	BDL
8	Battery limits of MS Block	BDL
9	Battery limits of DCU	BDL
10	Product Intermediate Storage Tanks Down Wind Direction	BDL
11	Product Intermediate Storage Tank UP Wind Direction	BDL
12	Near HPCL Product Dispatch Pumps	0.2
13	Battery limits of PPU	BDL
14	Near Crude Oil storage Tanks	0.3
15	Battery Limits of SRU Block	BDL

Remark:

BDL-Below Detection Limit (LOQ-0.1)



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Test Report

Issued to: HPCL-Mittal Energy Limited

Village Phulokhari, TalukaTatwandi Sabo
Distt.Bhatinda, Punjab, India

Report No. : NL/100004092

Test Report Date: 15/05/2020

Sample Particulars:

Sample Quantity & Packaging : 2.0 Liter, Pet Bottle
Test Started on : 08/05/2020
Test Completed : 14/05/2020
Method of Sampling : SOP/B/D-3
Date of Sampling : 29/04/2020
Sampling Conducted By : Mr. Manmohan Singh
Place of Sampling : W-1: ETP Outlet, Inside GGSR

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
1	pH	...	7.72	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	18.2	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	92.19	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	12.8	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	BDL	5.0	IS:3025 (P-39)
6	Phenolic Compounds(C ₆ H ₅ OH)	mg/L	0.28	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.23	0.5	IS:3025 (P-29)
8	Ammonia (N)	mg/L	7.28	15.0	IS:3025 (P-34)
9	Total Kjeldahl Nitrogen (NH ₃)	mg/L	17.3	40	IS:3025 (P-34)
10	Phosphate	mg/L	0.72	3.0	IS:3025 (P-31)
11	Cyanide (CN*)	mg/L	BDL	0.20	APHA-23 rd Ed.
12	Total Chromium	mg/L	BDL	2.0	IS:3025 (P-52)
13	Chromium Hexavalent (Cr ⁺⁶)	mg/L	BDL	0.1	IS:3025 (P-52)
14	Copper (Cu)	mg/L	BDL	1.0	APHA -23 rd Ed.
15	Lead (Pb)	mg/L	BDL	0.1	APHA-23 rd Ed.
16	Mercury (Hg)	mg/L	BDL	0.01	APHA-23 rd Ed.
17	Zinc (Zn)	mg/L	BDL	5.0	APHA-23 rd Ed.
18	Nickel (Ni)	mg/L	BDL	1.0	APHA-23 rd Ed.
19	Vanadium (V*)	mg/L	BDL	0.2	APHA-23 rd Ed.
20	Benzene*	mg/L	BDL	0.1	APHA-23 rd Ed.
21	Benzo* (a)-Pyreen	mg/L	BDL	0.2	APHA-23 rd Ed.

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004096
Test Report Date: 15/05/2020

Sample Particulars:

Nature of the Sample	: ETP Outlet
Sample Quantity & Packaging	: 5.0 Liter, Pet Bottle
Test Started on	: 08/05/2020
Test Completed	: 14/05/2020
Method of Sampling	: SOP/B/D-3
Date of Sampling	: 29/04/2020
Sampling Conducted By	: Mr. Manmohan Singh
Place of Sampling	: W-5: ETP Outlet, Inside GGSR

Analysis Report

Sr. No.	Parameters	Unit	Test Result	Protocol
			W5	
1	Bioassay Toxic Test	%	98 % survival of fish after 96 hours in 100 % effluent	IS:6582 (P-1)

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, TalukaTalwandi Sabo
Distt.Bhatinda, Punjab, India

Report No. : NL/100004093
Test Report Date: 15/05/2020

Sample Particulars:

Nature of the Sample	: STP Outlet Refinery
Sample Quantity & Packaging	: 2.0 Liter, Pet Bottle
Test Started on	: 08/05/2020
Test Completed	: 14/05/2020
Method of Sampling	: SOP/B/D-3
Date of Sampling	: 29/04/2020
Sampling Conducted By	: Mr. Manmohan Singh
Place of Sampling	: W-2: STP Outlet, Inside GGSR

Analysis Report

Sr. No.	Parameters	Unit	Test Results	Standards	Protocol
			W2		
1	pH	-	7.62	6.5 to 9.0	IS:3025 (P-11)
2	Temperature	°C	26.4	-	IS:3025 (P-9)
3	TSS	mg/l	8.1	≤10mg/l	IS:3025 (P-17)
4	COD	mg/l	39.5	≤50mg/l	IS:3025 (P-58)
5	BOD	mg/l	5.8	≤10mg/l	IS:3025 (P-44)
6	O & G	mg/l	BDL	≤5mg/l	IS:3025 (P-39)
7	Ammonical Nitrogen as N*	mg/l	2.83	≤5mg/l	IS:3025 (P-34)
8	N-total*	mg/l	3.98	≤10mg/l	IS:3025 (P-34)
9	PO4-P*	mg/l	0.73	≤2mg/l	IS:3025 (P-31)

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**Scanned copy of original Manual Environmental Monitoring Test
reports May'2020**

BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No.: NL/100004300, 4311,4319,4327,4335,4343,4351,4359
Test Report Date: 08/06/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-1
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR for 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
04/05/2020	09:30	1.12	3.928	BDL	BDL	BDL
08/05/2020	09:45	1.10	4.623	BDL	BDL	BDL
11/05/2020	09:24	1.12	4.172	BDL	BDL	BDL
15/05/2020	09:36	1.14	3.726	BDL	BDL	BDL
18/05/2020	09:40	1.10	4.018	BDL	BDL	BDL
22/05/2020	09:30	1.20	2.918	BDL	BDL	BDL
25/05/2020	10:05	1.16	3.871	BDL	BDL	BDL
29/05/2020	10:10	1.12	4.102	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)

Remark:

*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009; BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.


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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No.: NL/100004301, 4312,4320,4328,4336,4344,4352,4360
Test Report Date: 08/06/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-2
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR for 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
04/05/2020	09:50	1.12	4.018	BDL	BDL	BDL
08/05/2020	10:12	1.16	3.152	BDL	BDL	BDL
11/05/2020	09:40	1.12	4.216	BDL	BDL	BDL
15/05/2020	09:55	1.11	3.827	BDL	BDL	BDL
18/05/2020	10:20	1.10	4.827	BDL	BDL	BDL
22/05/2020	09:45	1.06	3.725	BDL	BDL	BDL
25/05/2020	10:20	1.18	3.121	BDL	BDL	BDL
29/05/2020	10:30	1.10	4.102	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)

Remark:

*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.



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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No.: NL/100004302, 4313,4321,4329,4337,4345,4353,4361
Test Report Date: 08/06/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-3
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR for 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
04/05/2020	10:10	1.11	3.192	BDL	BDL	BDL
08/05/2020	10:20	1.12	2.827	BDL	BDL	BDL
11/05/2020	10:04	1.08	4.192	BDL	BDL	BDL
15/05/2020	10:20	1.10	4.091	BDL	BDL	BDL
18/05/2020	10:15	1.12	3.121	BDL	BDL	BDL
22/05/2020	10:00	1.10	3.654	BDL	BDL	BDL
25/05/2020	10:30	1.20	4.229	BDL	BDL	BDL
29/05/2020	10:35	1.12	4.819	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)

Remark:

*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (38)], [Part-II-sec-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.


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(RAVINDER MITAL)

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

Report No.: NL/100004303, 4314,4322,4330,4338,4346,4354,4362
Test Report Date: 08/06/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-4
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. AnimeshJha
: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR for 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
04/05/2020	10:20	1.11	4.019	BDL	BDL	BDL
08/05/2020	10:30	1.12	3.271	BDL	BDL	BDL
11/05/2020	10:10	1.09	3.019	BDL	BDL	BDL
15/05/2020	10:25	1.12	3.231	BDL	BDL	BDL
18/05/2020	10:28	1.12	4.192	BDL	BDL	BDL
22/05/2020	10:18	1.10	4.217	BDL	BDL	BDL
25/05/2020	10:34	1.12	4.362	BDL	BDL	BDL
29/05/2020	11:20	1.10	3.817	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)

Remark:

*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.

Authorised
(AUTHORISED SIGNATORY)
(RAVINDER MITTAL)

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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phullokhar, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

Report No.: NL/100004304, 4315,4323,4331,4339,4347,4355,4363
Test Report Date: 08/06/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-5
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR for 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
04/05/2020	10:24	1.12	2.928	BDL	BDL	BDL
08/05/2020	10:36	1.10	3.192	BDL	BDL	BDL
11/05/2020	10:23	1.14	4.182	BDL	BDL	BDL
15/05/2020	10:37	1.10	4.018	BDL	BDL	BDL
18/05/2020	10:45	1.12	4.132	BDL	BDL	BDL
22/05/2020	10:34	1.11	2.918	BDL	BDL	BDL
25/05/2020	11:00	1.12	3.192	BDL	BDL	BDL
29/05/2020	11:10	1.12	2.928	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)

Remark:

*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0]
BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample
Analysed within Three days after Receipt.

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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phullokhar, Taluka Talwandi Sabo
Distt Bhatinda Punjab India

Report No.: NL/100004305, 4316,4324,4332,4340,4348,4356,4364
Test Report Date: 08/06/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-6
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR for RDS (m3/min)	AFR for FPS (m3/hr)	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
04/05/2020	10:40	1.12	1.00	3.098	BDL	BDL	BDL	59.7	85.3	16.8	27.9	0.654
08/05/2020	11:05	1.10	0.99	3.876	BDL	BDL	BDL	54.3	84.1	17.3	24.6	0.132
11/05/2020	10:24	1.12	0.98	2.987	BDL	BDL	BDL	52.7	84.3	18.3	20.1	0.176
15/05/2020	10:47	1.12	1.00	4.987	BDL	BDL	BDL	51.1	79.4	15.7	19.5	0.187
18/05/2020	11:00	1.10	1.12	4.876	BDL	BDL	BDL	48.7	74.2	15.9	21.4	0.231
22/05/2020	10:40	1.10	0.98	3.543	BDL	BDL	BDL	54.9	87.5	16.9	21.0	0.381
25/05/2020	11:10	0.99	0.99	3.876	BDL	BDL	BDL	49.1	90.1	17.5	19.4	0.192
29/05/2020	11:25	0.98	1.20	4.098	BDL	BDL	BDL	43.1	87.4	16.9	20.1	0.121
National Ambient Air Quality Monitoring Standards (2009)				20	06	01	01	60	100	80	80	04
Test Method				AAS Method	AAS Method	IS:518 2 (P-12)	IS:5182 (P-22)	Gravi metric	IS:5182 (P-23)	IS:518 2 (P-2)	IS:518 2 (P-6)	NDIR Method

Remark:

*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(I)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0] Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.



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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004367

Test Report Date: 08/06/2020

Sample Particulars:

Nature of the Sample

Date of Monitoring

Purpose of Monitoring

Place of Monitoring

Monitoring Conducted By

Protocol Used

: Ambient Noise

: 30/05/2020

: To Check the Pollution Load

: HMEL Refinery

: Mr. Animesh Jha

: IS: 9989

Analysis Report

Sr. No.	Location	Test Result dB(A) Day Time	Test Result dB(A) Night Time
Permissible Limit in *dB(A) Leq For Industrial Area		75 dB(A)	70 dB(A)
1	Near Refinery Main Gate	73.2	68.2
2	Near Fire Water Reservoir	62.1	67.9
3	Near Road Crude Oil Tanks	67.3	62.4
4	Near ETP and Flare	69.1	65.5
5	Near Storm Water Pond East Side	70.3	63.3
6	Near Sulphur Yard South East Side	65.1	57.3
7	Near Rail Loading Dispatch South East Side	70.6	59.0
8	Near CPP North East Side	71.7	62.1
9	Near Poly Propylene Dispatch Area	70.9	63.4
10	Near Ecological Pond Area	68.8	62.3

*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	Limits dB (A) Leq	
		Day Time (6AM - 10PM)	Night Time (10PM - 06AM)
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 REPORT

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004400
Test Report Date : 08/06/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 28/05/2020
Time of Sampling	: 11:30
Test Started on	: 29/05/2020
Test Completed On	: 06/06/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: SRU 524
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack/duct	: Mild Steel
Stack height from Ground Level (m)	: 100
Diameter of the stack(m)	: 2.0
Sampling duration (min)	: 35
Observations:	
Flue Gas Temperature °C	: 210
Ambient Air Temperature °C	: 40
Flue Gas Velocity (m/s)	: 13.34

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Limits for 100 % Fuel Gas (in mg/Nm ³)	Test Method
1	Oxide of Nitrogen (as NO _x)	95.87	250	IS-11255(P-7)
2	Carbon Monoxide (as CO)	62.13	100	IS-13270
3	Oxides of Sulphur (as SO _x)	159.86	N.A.	IS-11255 (P-2)
4	Hydrogen Sulphide (as H ₂ S)	BDL(LOQ-0.1)	10	IS:11255 (P-4)

Remark: Not Detected

*LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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TEST REPORT

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No, : NL/100004400
Test Report Date : 08/06/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 28/05/2020
Time of Sampling	: 12:30
Test Started on	: 29/05/2020
Test Completed On	: 06/06/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: SRU 525
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 100
Diameter of the stack(m)	: 2.0
Sampling duration (min)	: 30

Observations:

Flue Gas Temperature °C	: 199
Ambient Air Temperature °C	: 40
Flue Gas Velocity (m/s)	: 12.76

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Limits for 100 % Fuel Gas (in mg/Nm ³)	Test Method
1	Oxide of Nitrogen (as NO _x)	49.28	250	IS-11255(P-7)
2	Carbon Monoxide (as CO)	39.56	100	IS-13270
3	Oxides of Sulphur (as SO _x)	148.27	NA	IS-11255 (P-2)
4	Hydrogen Sulphide (as H ₂ S)	BDL(LOQ-0.1)	10	IS:11255 (P-4)

Remark: Not Detected

*LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.

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(RAVINDER MITTAL)

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004384-4394

Test Report Date : 06/06/2020

Sample Particulars:

Nature of the Sample & No. of Samples : Ground Water & Eleven Samples
Sample Quantity & Packaging : 2.0 Liter, Pet Bottle
Test Started on : 30/05/2020
Test Completed : 06/06/2020
Method of Sampling : SOP/B/D-3
Date of Sampling : 29/05/2020
Sampling Conducted By : Mr. Manmohan Singh

Analysis Report

Parameter		pH	Odour	Color	Taste	Temperature	Turbidity	TDS	Alkalinity as (CaCO ₃)	Total Hardness as (CaCO ₃)	Chlorides	Fluorides
Location												
GW1		7.24	Agreeable	<5	Agreeable	26.5	<1	724	162	289	167.2	0.82
GW2		7.34	Agreeable	<5	Agreeable	23.4	<1	473	271	243	273.1	0.65
GW3		7.53	Agreeable	<5	Agreeable	26.9	<1	601	201	261	193.1	0.71
GW4		7.26	Agreeable	<5	Agreeable	26.3	<1	624	261	251	287.2	0.76
GW5		7.34	Agreeable	<5	Agreeable	25.6	<1	462	195	221	152.1	0.68
GW6		7.40	Agreeable	<5	Agreeable	26.8	<1	582	225	298	150.2	0.72
GW7		7.32	Agreeable	<5	Agreeable	26.5	<1	491	193	231	161.2	0.81
GW8		7.47	Agreeable	<5	Agreeable	26.9	<1	438	263	201	184.5	0.78
GW9		7.32	Agreeable	<5	Agreeable	27.0	<1	591	198	231	162.2	0.75
GW10		7.27	Agreeable	<5	Agreeable	26.6	<1	521	231	255	189.2	0.81
GW11		7.39	Agreeable	<5	Agreeable	26.7	<1	562	265	287	150.2	0.73
IS 10500	Desirable	6.5-8.5	Agreeable	5	Agreeable	-	1	500	200	200	250	1.0
	Permissible	6.5-8.5	Agreeable	15	Agreeable	-	5	2000	600	600	1000	1.5
Protocol		IS:3025 (P-11)	IS:3025 (P-5)	IS:3025 (P-4)	IS:3025 (P-7)	IS:3025 (P-9)	APHA 23 rd Ed.	IS:3025 (P-16)	IS:3025 (P-23)	IS: 3025 (P-21)	IS:3025 (P-21)	APHA 23 rd Ed.

Remark:

GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond - North East Side, GW3: Near Ecological Pond West Side, GW4: Near Ecological Pond South East Side
GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water block Area, GW7: Near RO/DM Plant East Side
AreaGW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side, GW10: Secured Landfill Area South Side, GW11: Near ETP South Side



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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004384-4394

Test Report Date : 06/06/2020

Analysis Report

Parameter		Calcium as Ca	Magnesium as Mg	Sulphate	Nitrates	Phenolic Compounds	Iron (as Fe)	Mercury (as Hg)	Zinc (as Zn)	Cadmium (as Cd)	Chromium (as Cr)	Arsenic (as As)
GW1		52.39	38.29	154.29	18.9	BDL	0.46	BDL	BDL	BDL	BDL	BDL
GW2		35.87	19.21	124.28	18.6	BDL	0.35	BDL	BDL	BDL	BDL	BDL
GW3		46.81	23.12	132.19	14.5	BDL	0.31	BDL	BDL	BDL	BDL	BDL
GW4		48.29	39.27	143.29	17.9	BDL	0.36	BDL	BDL	BDL	BDL	BDL
GW5		39.19	31.21	132.13	25.6	BDL	0.41	BDL	BDL	BDL	BDL	BDL
GW6		39.18	28.10	132.46	20.8	BDL	0.27	BDL	BDL	BDL	BDL	BDL
GW7		52.19	28.37	129.38	18.7	BDL	0.38	BDL	BDL	BDL	BDL	BDL
GW8		45.28	36.48	126.29	15.4	BDL	0.32	BDL	BDL	BDL	BDL	BDL
GW9		50.18	42.19	113.21	19.4	BDL	0.29	BDL	BDL	BDL	BDL	BDL
GW10		52.19	43.29	143.28	14.8	BDL	0.24	BDL	BDL	BDL	BDL	BDL
GW11		52.38	30.18	143.21	18.7	BDL	0.40	BDL	BDL	BDL	BDL	BDL
IS 10500	Desirable	75	30	200	45	0.001	1	0.001	5	0.003	0.05	0.01
	Permissible	200	100	400	No Relaxation	0.002	No Relaxation	No Relaxation	15	No Relaxation	No Relaxation	0.05
Protocol		IS:3025 (P-40)	IS:3025 (P-46)	APHA 23 rd Ed.	IS:3025 (P-34)	IS:3025 (P-43)	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.

Remark:

GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond - North East Side, GW3: Near Ecological Pond West Side, GW4: Near Ecological Pond South East Side
GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water Block Area, GW7: Near RO/DM Plant East Side Area
GW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side, GW10: Secured Landfill Area South Side, GW11: Near ETP South Side



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004384-4394
Test Report Date : 06/06/2020

Analysis Report

Parameter		Lead (as Pb)	Boron (as B)	Cyanid e (as CN*)	Seleniu m (as Se*)	RFC	Polycycli c Aromatic Hydrocar bons (PAH*)	Miner al Oil*	Anionic Deterg ent*	Aluminu m (as Al)	Total Coliform
GW1		BDL	0.39	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW2		BDL	0.26	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW3		BDL	0.21	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW4		BDL	0.30	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW5		BDL	0.34	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW6		BDL	0.41	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW7		BDL	0.35	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW8		BDL	0.40	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW9		BDL	0.34	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW10		BDL	0.27	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW11		BDL	0.31	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
as per IS:1 050 0	Desi rabl e	0.01	0.5	0.05	0.01	0.2	0.0001	0.5	0.2	0.03	Absent
	Per mi ssibl e	No Relaxat ion	1.0	No	No	1.0	No	No	1.0	0.2	Absent
Protocol		APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	IS: 1622

Remark:

GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond - North East Side, GW3: Near Ecological Pond West Side, GW4: Near Ecological Pond South East Side
GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water Block Area, GW7: Near RO/DM Plant East Side
Area GW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side, GW10: Secured Landfill Area South Side, GW11: Near CRP South Side

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004070-4383

Test Report Date: 15/05/2020

Sample Particulars:

Nature of the Sample

Date of Monitoring

Purpose of Monitoring

Place of Monitoring

Monitoring Conducted By

Protocol Used

: **Volatile Organic Carbon**

: 30/05/2020

: To Check the Pollution Load

: HMEL Refinery

: Mr. Animesh Jha

: Portable PID Based Gas Detector for VOC's – Honeywell RAE

Analysis Report

Sr. No.	Locations	Test Results (PPM)
1	Near ETP	0.1
2	Near Rail Gantry	BDL
3	Near Road Gantry	BDL
4	Battery limits of CDU/VDU	BDL
5	Battery limits of FCCU	BDL
6	Battery limits of DHDT-1	BDL
7	Battery limits of VGO-HDT	BDL
8	Battery limits of MS Block	BDL
9	Battery limits of DCU	BDL
10	Product Intermediate Storage Tanks Down Wind Direction	BDL
11	Product Intermediate Storage Tank UP Wind Direction	BDL
12	Near HPCL Product Dispatch Pumps	0.2
13	Battery limits of PPU	BDL
14	Near Crude Oil storage Tanks	0.3
15	Battery Limits of SRU Block	BDL

Remark:

BDL-Below Detection Limit (LOQ-0.1)



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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phullokhar, TalukaTalwandi Sabo
Distt.Bhatinda, Punjab, India

Report No. : NL/100004395

Test Report Date : 06/06/2020

Sample Particulars:

Sample Quantity & Packaging : 2.0 Liter, Pet Bottle
Test Started on : 30/05/2020
Test Completed : 06/06/2020
Method of Sampling : SOP/B/D-3
Date of Sampling : 29/05/2020
Sampling Conducted By : Mr. Manmohan Singh
Place of Sampling : W-1: ETP Outlet, Inside GGSR

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
1	pH	...	7.42	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	15.3	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	90.15	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	11.8	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	BDL	5.0	IS:3025 (P-39)
6	Phenolic Compounds(C ₆ H ₅ OH)	mg/L	0.18	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.27	0.5	IS:3025 (P-29)
8	Ammonia (N)	mg/L	7.91	15.0	IS:3025 (P-34)
9	Total Kjeldahl Nitrogen (NH ₃)	mg/L	19.3	40	IS:3025 (P-34)
10	Phosphate	mg/L	0.89	3.0	IS:3025 (P-31)
11	Cyanide (CN*)	mg/L	BDL	0.20	APHA-23 rd Ed.
12	Total Chromium	mg/L	BDL	2.0	IS:3025 (P-52)
13	Chromium Hexavalent (Cr ⁶⁺)	mg/L	BDL	0.1	IS:3025 (P-52)
14	Copper (Cu)	mg/L	BDL	1.0	APHA -23 rd Ed.
15	Lead (Pb)	mg/L	BDL	0.1	APHA-23 rd Ed.
16	Mercury (Hg)	mg/L	BDL	0.01	APHA-23 rd Ed.
17	Zinc (Zn)	mg/L	BDL	5.0	APHA-23 rd Ed.
18	Nickel (Ni)	mg/L	BDL	1.0	APHA-23 rd Ed.
19	Vanadium (V*)	mg/L	BDL	0.2	APHA-23 rd Ed.
20	Benzene*	mg/L	BDL	0.1	APHA-23 rd Ed.
21	Benzo* (a)-Pyreen	mg/L	BDL	0.2	APHA-23 rd Ed.

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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004399
Test Report Date : 06/06/2020

Sample Particulars:

Nature of the Sample	: ETP Outlet
Sample Quantity & Packaging	: 5.0 Liter, Pet Bottle
Test Started on	: 30/05/2020
Test Completed	: 06/06/2020
Method of Sampling	: SOP/B/D-3
Date of Sampling	: 29/05/2020
Sampling Conducted By	: Mr. Manmohan Singh
Place of Sampling	: W-5: ETP Outlet, Inside GGSR

Analysis Report

Sr. No.	Parameters	Unit	Test Result	Protocol
			W5	
1	Bioassay Toxic Test	%	98 % survival of fish after 96 hours in 100 % effluent	IS:6582 (P-1)


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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004396

Test Report Date : 06/06/2020

Sample Particulars:

Nature of the Sample	: STP Outlet Refinery
Sample Quantity & Packaging	: 2.0 Liter, Pet Bottle
Test Started on	: 30/05/2020
Test Completed	: 06/06/2020
Method of Sampling	: SOP/B/D-3
Date of Sampling	: 29/05/2020
Sampling Conducted By	: Mr. Manmohan Singh
Place of Sampling	: W-2: STP Outlet, Inside GGSR

Analysis Report

Sr. No.	Parameters	Unit	Test Results	Standards	Protocol
			W2		
1	pH	-	7.92	6.5 to 9.0	IS:3025 (P-11)
2	Temperature	°C	25.7	-	IS:3025 (P-9)
3	TSS	mg/l	8.8	≤10mg/l	IS:3025 (P-17)
4	COD	mg/l	41.2	≤50mg/l	IS:3025 (P-58)
5	BOD	mg/l	6.9	≤10mg/l	IS:3025 (P-44)
6	O & G	mg/l	BDL	≤5mg/l	IS:3025 (P-39)
7	Ammonical Nitrogen as N*	mg/l	3.19	≤5mg/l	IS:3025 (P-34)
8	N-total*	mg/l	4.18	≤10mg/l	IS:3025 (P-34)
9	PO4-P*	mg/l	0.89	≤2mg/l	IS:3025 (P-31)
10	Total Coliform Count	MPN/100ml	110	≤230/100mg/l	IS: 1622

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**Scanned copy of original Manual Environmental Monitoring Test
reports Jun'2020**

BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: **HPCL-Mittal Energy Limited**

Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No.: NL/100004300, 4311,4319,4327,4335,4343,4351,4359

Test Report Date: 08/06/2020

Sample Particulars

Nature of the Sample

Sampling Location

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**

: Ambient Air Quality Monitoring Station (AAQMS)-1

: To Check the Pollution Load

: IS 5182 (Part 14)

: Mr. Animesh Jha

: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR for 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
01/06/2020	09:30	1.10	3.816	BDL	BDL	BDL
05/06/2020	09:40	1.00	4.012	BDL	BDL	BDL
08/06/2020	09:35	1.14	4.261	BDL	BDL	BDL
12/06/2020	09:47	1.11	2.938	BDL	BDL	BDL
15/06/2020	09:40	1.13	3.019	BDL	BDL	BDL
19/06/2020	09:29	1.14	2.023	BDL	BDL	BDL
22/06/2020	09:10	1.12	3.324	BDL	BDL	BDL
26/06/2020	09:54	1.10	4.261	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)

Remark:

*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.

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Test Report

Issued to: **HPCL-Mittal Energy Limited**

Village Phulokhari, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

Report No.: NL/100004301, 4312,4320,4328,4336,4344,4352,4360

Test Report Date: 08/06/2020

Sample Particulars

Nature of the Sample

Sampling Location

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**

: Ambient Air Quality Monitoring Station (AAQMS)-2

: To Check the Pollution Load

: IS 5182 (Part 14)

: Mr. Animesh Jha

: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR for 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
01/06/2020	09:50	1.10	3.982	BDL	BDL	BDL
05/06/2020	10:00	1.12	2.837	BDL	BDL	BDL
08/06/2020	09:50	1.11	4.019	BDL	BDL	BDL
12/06/2020	09:59	1.12	3.562	BDL	BDL	BDL
15/06/2020	09:55	1.13	3.019	BDL	BDL	BDL
19/06/2020	09:45	1.00	2.983	BDL	BDL	BDL
22/06/2020	09:30	1.14	3.102	BDL	BDL	BDL
26/06/2020	10:10	1.12	3.827	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)

Remark:

*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0],Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

Report No.: NL/100004302, 4313,4321,4329,4337,4345,4353,4361
Test Report Date: 08/06/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-3
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR for 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
01/06/2020	10:10	1.10	2.893	BDL	BDL	BDL
05/06/2020	10:15	1.11	3.019	BDL	BDL	BDL
08/06/2020	10:05	1.06	3.726	BDL	BDL	BDL
12/06/2020	10:10	1.12	3.212	BDL	BDL	BDL
15/06/2020	10:05	1.10	2.938	BDL	BDL	BDL
19/06/2020	09:59	1.11	3.124	BDL	BDL	BDL
22/06/2020	09:45	1.16	4.021	BDL	BDL	BDL
26/06/2020	10:20	1.14	4.121	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)

Remark:

*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(ii)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.



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(RAVINDER MITTAL)

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

Report No.: NL/100004303, 4314,4322,4330,4338,4346,4354,4362
Test Report Date: 08/06/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-4
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. AnimeshJha
: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR for 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
01/06/2020	10:20	1.12	4.271	BDL	BDL	BDL
05/06/2020	10:35	1.10	3.827	BDL	BDL	BDL
08/06/2020	10:20	1.14	2.938	BDL	BDL	BDL
12/06/2020	10:25	1.11	2.837	BDL	BDL	BDL
15/06/2020	10:20	1.10	3.928	BDL	BDL	BDL
19/06/2020	10:10	1.12	4.019	BDL	BDL	BDL
22/06/2020	09:59	1.14	4.212	BDL	BDL	BDL
26/06/2020	10:35	1.12	3.982	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)

Remark:

*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.


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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

Report No.: NL/100004304, 4315,4323,4331,4339,4347,4355,4363
Test Report Date: 08/06/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-5
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR for 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
01/06/2020	10:35	1.11	3.019	BDL	BDL	BDL
05/06/2020	10:50	1.12	2.837	BDL	BDL	BDL
08/06/2020	10:35	1.10	4.281	BDL	BDL	BDL
12/06/2020	10:40	1.11	3.927	BDL	BDL	BDL
15/06/2020	10:35	1.14	3.721	BDL	BDL	BDL
19/06/2020	10:25	1.12	3.121	BDL	BDL	BDL
22/06/2020	10:10	1.10	4.271	BDL	BDL	BDL
26/06/2020	10:50	1.14	2.019	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)

Remark:

*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0]
BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample
Analysed within Three days after Receipt.


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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt Bhatinda Punjab India

Report No.: NL/100004305, 4316,4324,4332,4340,4348,4356,4364
Test Report Date: 08/06/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: Ambient Air Quality Monitoring
: Ambient Air Quality Monitoring Station (AAQMS)-6
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR for RDS (m3/min)	AFR for FPS (m3/hr)	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
01/06/2020	10:50	1.14	0.98	3.827	BDL	BDL	BDL	50.2	78.7	15.4	25.4	0.872
05/06/2020	10:59	1.12	1.00	3.421	BDL	BDL	BDL	49.2	82.1	16.2	21.2	0.234
08/06/2020	10:50	1.11	0.99	3.102	BDL	BDL	BDL	51.2	83.2	19.5	19.2	0.281
12/06/2020	10:55	1.10	1.11	4.251	BDL	BDL	BDL	49.2	78.5	14.2	21.3	0.291
15/06/2020	10:50	1.11	1.14	4.917	BDL	BDL	BDL	45.3	67.1	16.1	23.4	0.276
19/06/2020	10:35	1.12	0.99	3.726	BDL	BDL	BDL	52.1	80.1	17.6	21.5	0.471
22/06/2020	10:25	1.00	0.98	3.918	BDL	BDL	BDL	45.2	86.4	15.6	21.3	0.399
26/06/2020	11:00	1.12	1.14	4.162	BDL	BDL	BDL	44.3	85.3	17.2	22.7	0.134
National Ambient Air Quality Monitoring Standards (2009)				20	06	01	01	60	100	80	80	04
Test Method				AAS Method	AAS Method	IS:518 2 (P-12)	IS:5182 (P-22)	Gravimetric	IS:5182 (P-23)	IS:518 2 (P-2)	IS:518 2 (P-6)	NDIR Method

Remark:
*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0] Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004367
Test Report Date: 08/06/2020

Sample Particulars:

Nature of the Sample : **Ambient Noise**
Date of Monitoring : 29/06/2020
Purpose of Monitoring : To Check the Pollution Load
Place of Monitoring : HMEL Refinery
Monitoring Conducted By : Mr. Animesh Jha
Protocol Used : IS: 9989

Analysis Report

Sr. No.	Location	Test Result dB(A) Day Time	Test Result dB(A) Night Time
Permissible Limit in *dB(A) Leq For Industrial Area		75 dB(A)	70 dB(A)
1	Near Refinery Main Gate	74.1	69.1
2	Near Fire Water Reservoir	71.1	68.9
3	Near Road Crude Oil Tanks	69.4	64.3
4	Near ETP and Flare	70.4	68.9
5	Near Storm Water Pond East Side	71.3	62.1
6	Near Sulphur Yard South East Side	68.9	55.8
7	Near Rail Loading Dispatch South East Side	68.2	59.0
8	Near CPP North East Side	72.3	60.1
9	Near Poly Propylene Dispatch Area	71.2	62.2
10	Near Ecological Pond Area	69.8	60.1

*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	Limits dB (A) Leq	
		Day Time (6AM - 10PM)	Night Time (10PM - 06AM)
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 Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004112
Test Report Date: 09/06/2020

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 02/06/2020
Time of Sampling	: 11:20
Test Started on	: 03/06/2020
Test Completed On	: 08/06/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: HGU-2
Sampling method	: IS-11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 70
Diameter of the stack (m)	: 2.6
Sampling duration (min)	: 30
Observations:	
Flue Gas Temperature °C	: 172
Ambient Air Temperature °C	: 33
Flue Gas Velocity (m/s)	: 11.30

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	3.54	38	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	28.76	636	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	119.43	323	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	19.7	137	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Below Detection Limit



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004113
Test Report Date: 08/06/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 02/06/2020
Time of Sampling	: 12:40
Test Started on	: 03/06/2020
Test Completed On	: 06/06/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: Naphtha Heater
Sampling method	: IS-11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 30
Diameter of the stack(m)	: 1.2
Sampling duration (min)	: 25

Observations:

Flue Gas Temperature °C	: 290
Ambient Air Temperature °C	: 35
Flue Gas Velocity (m/s)	: 7.82

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	4.12	41	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	45.47	679	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	38.23	329	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	51.21	139	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka.Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004115
Test Report Date: 10/06/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 03/06/2020
Time of Sampling	: 12:30
Test Started on	: 04/06/2020
Test Completed On	: 09/06/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: SRU 524
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 100
Diameter of the stack(m)	: 2.0
Sampling duration (min)	: 28
Observations:	
Flue Gas Temperature °C	: 198
Ambient Air Temperature °C	: 34
Flue Gas Velocity (m/s)	: 13.50

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	100 % Fuel Gas (in mg/Nm ³)	Test Method
1	Oxide of Nitrogen (as NO _x)	42.18	250	IS-11255(P-7)
2	Carbon Monoxide (as CO)	19.39	100	IS-13270
3	Oxides of Sulphur (as SO _x)	145.29	N.A.	IS-11255 (P-2)
4	Hydrogen Sulphide (as H ₂ S)	BDL(LOQ-0.1)	10	IS:11255 (P-4)

Remark: Not Detected



(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004116

Test Report Date: 10/06/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 03/06/2020
Time of Sampling	: 15:20
Test Started on	: 04/06/2020
Test Completed On	: 09/06/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: SRU 525
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 100
Diameter of the stack(m)	: 2.0
Sampling duration (min)	: 30

Observations:

Flue Gas Temperature °C	: 205
Ambient Air Temperature °C	: 34
Flue Gas Velocity (m/s)	: 13.41

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Limits 100 % Fuel Gas (in mg/Nm ³)	Test Method
1	Oxide of Nitrogen (as NO _x)	42.18	250	IS-11255(P-7)
2	Carbon Monoxide (as CO)	32.46	100	IS-13270
3	Oxides of Sulphur (as SO _x)	167.30	NA	IS-11255 (P-2)
4	Hydrogen Sulphide (as H ₂ S)	BDL(LOQ-0.1)	10	IS:11255 (P-4)

Remark: Not Detected



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004100
Test Report Date: 13/06/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 06/06/2020
Time of Sampling	: 11:20
Test Started on	: 08/06/2020
Test Completed On	: 12/06/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: CCR Heater
Sampling method	: IS-11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 68
Diameter of the stack(m)	: 2.5
Sampling duration (min)	: 40

Observations:

Flue Gas Temperature °C	: 191
Ambient Air Temperature °C	: 37
Flue Gas Velocity (m/s)	: 8.38

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	3.7	40	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	64.14	659	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	52.37	326	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	21.21	138	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004099
Test Report Date: 13/06/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 06/06/2020
Time of Sampling	: 12:35
Test Started on	: 08/06/2020
Test Completed On	: 12/06/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: NHT
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 50
Diameter of the stack(m)	: 1.2
Sampling duration (min)	: 307

Observations:

Flue Gas Temperature °C	: 211
Ambient Air Temperature °C	: 37
Flue Gas Velocity (m/s)	: 12.63

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	7.4	39	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	85.28	645	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	46.48	324	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	26.65	137	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004109

Test Report Date: 13/06/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 08/06/2020
Time of Sampling	: 11:00
Test Started on	: 09/06/2020
Test Completed On	: 12/06/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: VGO Heater
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 65
Diameter of the stack(m)	: 2.25
Sampling duration (min)	: 35

Observations:

Flue Gas Temperature °C	: 168
Ambient Air Temperature °C	: 37
Flue Gas Velocity (m/s)	: 9.78

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	5.2	41	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	35.87	676	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	40.27	328	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	50.29	139	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004097
Test Report Date: 16/06/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 09/06/2020
Time of Sampling	: 10:50
Test Started on	: 10/06/2020
Test Completed On	: 15/06/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: CDU/VDU
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 85
Diameter of the stack(m)	: 4.3
Sampling duration (min)	: 35

Observations:

Flue Gas Temperature °C	: 160
Ambient Air Temperature °C	: 41
Flue Gas Velocity (m/s)	: 9.78

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	9.5	40	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	96.39	659	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	24.32	326	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	15.36	138	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004098
Test Report Date: 16/06/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 09/06/2020
Time of Sampling	: 12:30
Test Started on	: 10/06/2020
Test Completed On	: 15/06/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: DCU
Sampling method	: IS-11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 65
Diameter of the stack (m)	: 3.14
Sampling duration (min)	: 35

Observations:

Flue Gas Temperature °C	: 159
Ambient Air Temperature °C	: 40
Flue Gas Velocity (m/s)	: 5.6

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	4.8	43	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	78.17	719	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	81.24	334	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	39.14	142	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004104
Test Report Date: 16/06/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 10/06/2020
Time of Sampling	: 12:30
Test Started on	: 11/06/2020
Test Completed On	: 15/06/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: HRSG-2
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement -
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 35
Diameter of the stack (m)	: 3.5
Sampling duration (min)	: 38

Observations:

Flue Gas Temperature °C	: 149
Ambient Air Temperature °C	: 41
Flue Gas Velocity (m/s)	: 8.77

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	4.9	44	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	36.12	730	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	159.45	335	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	13.32	143	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004103
Test Report Date: 16/06/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 10/06/2020
Time of Sampling	: 11:15
Test Started on	: 11/06/2020
Test Completed On	: 15/06/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: HRSG-I
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 35
Diameter of the stack(m)	: 3.5
Sampling duration (min)	: 40

Observations:

Flue Gas Temperature °C	: 152
Ambient Air Temperature °C	: 41
Flue Gas Velocity (m/s)	: 8.22

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	5.9	44	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	32.83	730	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	198.32	335	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	8.21	143	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004101
Test Report Date: 18/06/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 12/06/2020
Time of Sampling	: 11:20
Test Started on	: 13/06/2020
Test Completed On	: 17/06/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: FCCU-Regenerator
Sampling method	: IS: 11255 (P-7)
Normal Operating Schedule	: As per requirement
Type of Stack /Duct	: Mild Steel
Stack height from Ground Level (m)	: 42
Diameter of the Stack(m)	: 3.3
Sampling Duration (min)	: 27

Observations:

Flue Gas Temperature °C	: 221
Ambient Air Temperature °C	: 42
Flue Gas Velocity (m/s)	: 14.00

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	100 % Coke as Fuel (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	29.37	50	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	46.21	500	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	14.23	350	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	61.21	300	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	2	USEPA Method 29 By AAS

Remark: Not Detected



(RAVINDER MITTAL)

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004102

Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 12/06/2020
Time of Sampling	: 12:25
Test Started on	: 13/06/2020
Test Completed On	: 17/06/2020
Purpose of Monitoring	: To Check the Pollution Load
Sampling Location	: FCCU Heater
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 80
Diameter of the Stack(m)	: 1.75
Sampling Duration (min)	: 40

Observations:

Flue Gas Temperature °C	: 203
Ambient Air Temperature °C	: 40
Flue Gas Velocity (m/s)	: 8.53

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	5.3	41	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	74.38	678	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	31.29	328	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	12.18	139	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: Not Detected



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004117
Test Report Date: 15/05/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 15/06/2020
Time of Sampling	: 16:30
Test Started on	: 16/06/2020
Test Completed On	: 20/06/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: UB-6
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 130
Diameter of the stack(m)	: 3.25
Sampling duration (min)	: 27

Observations:

Flue Gas Temperature °C	: 133
Ambient Air Temperature °C	: 42
Flue Gas Velocity (m/s)	: 12.03

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Pet Coke Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	53.89	150	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	294.29	400	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	156.98	300	IS-11255 (P-7)


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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004107
Test Report Date: 22/06/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 15/06/2020
Time of Sampling	: 12:35
Test Started on	: 16/06/2020
Test Completed On	: 20/06/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: UB-3
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 100
Diameter of the stack(m)	: 3.0
Sampling duration (min)	: 28

Observations:

Flue Gas Temperature °C	: 134
Ambient Air Temperature °C	: 41
Flue Gas Velocity (m/s)	: 11.72

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	6.72	44	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	31.36	730	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	98.47	335	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	2.92	143	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS


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Test Report

Issued to: HPCL-Mittal Energy Limited

Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No.: NL/100003030

Test Report Date: 22/06/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 16/06/2020
Time of Sampling	: 11:00
Test Started on	: 17/06/2020
Test Completed On	: 20/06/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: BBU
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 60
Diameter of the stack(m)	: 2.0
Sampling duration (min)	: 30

Observations:

Flue Gas Temperature °C	: 135
Ambient Air Temperature °C	: 38
Flue Gas Velocity (m/s)	: 10.45

Analysis Report

Sr. No.	Parameters	Results (mg/Nm ³)	Mixed Fuel Limits (mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	4.8	5	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	46.8	50	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	123.2	250	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	41.21	150	IS-13270
5	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	N.A.	USEPA Method 29 By AAS

Remark: Not Detected



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Test Report

Issued to: **HPCL-Mittal Energy Limited**

Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No.: NL/100003034

Test Report Date: 22/06/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 16/06/2020
Time of Sampling	: 15:50
Test Started on	: 17/06/2020
Test Completed On	: 20/06/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: UB-5
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 130
Diameter of the stack(m)	: 3.25
Sampling duration (min)	: 26

Observations:

Flue Gas Temperature °C	: 131
Ambient Air Temperature °C	: 42
Flue Gas Velocity (m/s)	: 12.33

Analysis Report

Sr. No.	Parameters	Results (mg/Nm ³)	Pet Coke Limits (mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	47.29	150	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	261.5	400	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	167.9	300	IS-11255 (P-7)

Remark: Not Detected


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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004384-4394
Test Report Date: 07/07/2020

Sample Particulars:

Nature of the Sample & No. of Samples : Ground Water & Eleven Samples
Sample Quantity & Packaging : 2.0 Liter, Pet Bottle
Test Started on : 30/06/2020
Test Completed : 06/07/2020
Method of Sampling : SOP/B/D-3
Date of Sampling : 29/06/2020
Sampling Conducted By : Mr. Manmohan Singh

Analysis Report

Parameter		pH	Odour	Color	Taste	Temperature	Turbidity	TDS	Alkalinity as (CaCO ₃)	Total Hardness as (CaCO ₃)	Chlorides	Fluorides
Location												
GW1		7.43	Agreeable	<5	Agreeable	26.5	<1	682	152	276	176.4	0.82
GW2		7.31	Agreeable	<5	Agreeable	26.5	<1	531	291	258	207.1	0.69
GW3		7.21	Agreeable	<5	Agreeable	26.9	<1	592	231	273	189.3	0.73
GW4		7.35	Agreeable	<5	Agreeable	28.4	<1	624	276	261	298.1	0.81
GW5		7.32	Agreeable	<5	Agreeable	26.6	<1	486	211	243	167.2	0.54
GW6		7.35	Agreeable	<5	Agreeable	27.8	<1	601	241	312	168.9	0.82
GW7		7.34	Agreeable	<5	Agreeable	25.5	<1	521	194	251	187.4	0.54
GW8		7.57	Agreeable	<5	Agreeable	27.9	<1	482	253	235	176.1	0.70
GW9		7.32	Agreeable	<5	Agreeable	26.0	<1	562	211	274	153.2	0.72
GW10		7.21	Agreeable	<5	Agreeable	27.6	<1	542	253	264	231.9	0.85
GW11		7.32	Agreeable	<5	Agreeable	24.7	<1	612	287	290	123.5	0.79
IS 10500	Desirable	6.5-8.5	Agreeable	5	Agreeable	-	1	500	200	200	250	1.0
	Permissible	6.5-8.5	Agreeable	15	Agreeable	-	5	2000	600	600	1000	1.5
Protocol		IS:3025 (P-11)	IS:3025 (P-5)	IS:3025 (P-4)	IS:3025 (P-7)	IS:3025 (P-9)	APHA 23 rd Ed.	IS:3025 (P-16)	IS:3025 (P-23)	IS: 3025 (P-21)	IS:3025 (P-21)	APHA 23 rd Ed.

Remark:

GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond – North East Side, GW3: Near Ecological Pond West Side, GW4: Near Ecological Pond South East Side
GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water Block Area, GW7: Near RO/DM Plant East Side Area
GW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side, GW10: Secured Landfill Area South Side, GW11: Near ETP South Side



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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004384-4394
Test Report Date : 06/06/2020

Analysis Report

Parameter	Calcium as Ca	Magnesium as Mg	Sulphate	Nitrates	Phenolic Compounds	Iron (as Fe)	Mercury (as Hg)	Zinc (as Zn)	Cadmium (as Cd)	Chromium (as Cr)	Arsenic (as As)
GW1	59.29	42.18	189.32	21.8	BDL	0.54	BDL	BDL	BDL	BDL	BDL
GW2	35.87	23.28	143.10	19.6	BDL	0.41	BDL	BDL	BDL	BDL	BDL
GW3	47.89	29.10	143.48	18.7	BDL	0.39	BDL	BDL	BDL	BDL	BDL
GW4	54.28	47.59	139.87	19.3	BDL	0.42	BDL	BDL	BDL	BDL	BDL
GW5	46.90	36.48	142.12	21.6	BDL	0.49	BDL	BDL	BDL	BDL	BDL
GW6	45.23	34.10	129.49	26.9	BDL	0.31	BDL	BDL	BDL	BDL	BDL
GW7	59.19	35.20	144.43	21.1	BDL	0.42	BDL	BDL	BDL	BDL	BDL
GW8	50.17	43.32	119.11	19.3	BDL	0.57	BDL	BDL	BDL	BDL	BDL
GW9	53.69	46.76	119.39	21.5	BDL	0.29	BDL	BDL	BDL	BDL	BDL
GW10	60.19	49.19	154.9	16.8	BDL	0.34	BDL	BDL	BDL	BDL	BDL
GW11	57.18	36.49	149.8	19.3	BDL	0.48	BDL	BDL	BDL	BDL	BDL
IS 10500	Desirable	75	30	200	45	0.001	1	0.001	5	0.003	0.05
	Permissible	200	100	400	No Relaxation	0.002	No Relaxation	No Relaxation	15	No Relaxation	No Relaxation
Protocol	IS:3025 (P-40)	IS:3025 (P-46)	APHA 23 rd Ed.	IS:3025 (P-34)	IS:3025 (P-43)	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.

Remark:

GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond – North East Side, GW3: Near Ecological Pond West Side, GW4: Near Ecological Pond South East Side
GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water Block Area, GW7: Near RO/DM Plant East Side Area
GW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side, GW10: Secured Landfill Area South Side, GW11: Near ETP South Side



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004384-4394
Test Report Date : 06/06/2020

Analysis Report

Parameter		Lead (as Pb)	Boron (as B)	Cyanide (as CN*)	Selenium (as Se*)	RFC	Polycyclic Aromatic Hydrocarbons (PAH*)	Mineral Oil*	Anionic Detergent*	Aluminum (as Al)	Total Coliform
GW1		BDL	0.54	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW2		BDL	0.35	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW3		BDL	0.27	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW4		BDL	0.27	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW5		BDL	0.42	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW6		BDL	0.45	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW7		BDL	0.38	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW8		BDL	0.39	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW9		BDL	0.32	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW10		BDL	0.39	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
GW11		BDL	0.35	BDL	BDL	BDL	BDL	BDL	BDL	BDL	Absent
as per IS:10500	Desirable	0.01	0.5	0.05	0.01	0.2	0.0001	0.5	0.2	0.03	Absent
	Permissible	No Relaxation	1.0	No	No	1.0	No	No	1.0	0.2	Absent
Protocol		APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	IS: 1622

Remark:

GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond – North East Side, GW3: Near Ecological Pond West Side, GW4: Near Ecological Pond South East Side
GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water Block Area, GW7: Near RO/DM Plant East Side Area
GW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side, GW10: Secured Landfill Area South Side, GW11: Near ETP South Side



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004070-4383
Test Report Date: 15/05/2020

Sample Particulars:

Nature of the Sample

Date of Monitoring

Purpose of Monitoring

Place of Monitoring

Monitoring Conducted By

Protocol Used

: **Volatile Organic Carbon**

: 27/06/2020

: To Check the Pollution Load

: HMEI Refinery

: Mr. Animesh Jha

: Portable PID Based Gas Detector for VOC's - Honeywell RAE

Analysis Report

Sr. No.	Locations	Test Results (PPM)
1	Near ETP	BDL
2	Near Rail Gantry	BDL
3	Near Road Gantry	BDL
4	Battery limits of CDU/VDU	BDL
5	Battery limits of FCCU	BDL
6	Battery limits of DHDT-1	BDL
7	Battery limits of VGO-HDT	BDL
8	Battery limits of MS Block	BDL
9	Battery limits of DCU	BDL
10	Product Intermediate Storage Tanks Down Wind Direction	BDL
11	Product Intermediate Storage Tank UP Wind Direction	BDL
12	Near HPCL Product Dispatch Pumps	0.4
13	Battery limits of PPU	BDL
14	Near Crude Oil storage Tanks	0.2
15	Battery Limits of SRU Block	BDL

Remark:

BDL-Below Detection Limit (LOQ-0.1)



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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004395

Test Report Date : 07/07/2020

Sample Particulars:

Sample Quantity & Packaging : 2.0 Liter, Pet Bottle
Test Started on : 30/06/2020
Test Completed : 06/07/2020
Method of Sampling : SOP/B/D-3
Date of Sampling : 29/06/2020
Sampling Conducted By : Mr. Manmohan Singh
Place of Sampling : W-1: ETP Outlet, Inside GGSR

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
1	pH	...	7.76	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	16.9	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	87.5	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	12.5	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	BDL	5.0	IS:3025 (P-39)
6	Phenolic Compounds (C ₆ H ₅ OH)	mg/L	0.23	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.34	0.5	IS:3025 (P-29)
8	Ammonia (N)	mg/L	8.29	15.0	IS:3025 (P-34)
9	Total Kjeldahl Nitrogen (NH ₃)	mg/L	21.5	40	IS:3025 (P-34)
10	Phosphate	mg/L	0.94	3.0	IS:3025 (P-31)
11	Cyanide (CN*)	mg/L	BDL	0.20	APHA-23 rd Ed.
12	Total Chromium	mg/L	BDL	2.0	IS:3025 (P-52)
13	Chromium Hexavalent (Cr ⁺⁶)	mg/L	BDL	0.1	IS:3025 (P-52)
14	Copper (Cu)	mg/L	BDL	1.0	APHA-23 rd Ed.
15	Lead (Pb)	mg/L	BDL	0.1	APHA-23 rd Ed.
16	Mercury (Hg)	mg/L	BDL	0.01	APHA-23 rd Ed.
17	Zinc (Zn)	mg/L	BDL	5.0	APHA-23 rd Ed.
18	Nickel (Ni)	mg/L	BDL	1.0	APHA-23 rd Ed.
19	Vanadium (V*)	mg/L	BDL	0.2	APHA-23 rd Ed.
20	Benzene*	mg/L	BDL	0.1	APHA-23 rd Ed.
21	Benzo* (a)-Pyrene	mg/L	BDL	0.2	APHA-23 rd Ed.



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004399
Test Report Date : 06/07/2020

Sample Particulars:

Nature of the Sample	: ETP Outlet
Sample Quantity & Packaging	: 5.0 Liter, Pet Bottle
Test Started on	: 30/06/2020
Test Completed	: 06/07/2020
Method of Sampling	: SOP/B/D-3
Date of Sampling	: 29/06/2020
Sampling Conducted By	: Mr. Manmohan Singh
Place of Sampling	: W-5: ETP Outlet, Inside GGSR

Analysis Report

Sr. No.	Parameters	Unit	Test Result	Protocol
			W5	
1	Bioassay Toxic Test	%	98 % survival of fish after 96 hours in 100 % effluent	IS:6582 (P-1)



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : NL/100004396
Test Report Date : 07/07/2020

Sample Particulars:

Nature of the Sample	: STP Outlet Refinery
Sample Quantity & Packaging	: 2.0 Liter, Pet Bottle
Test Started on	: 30/06/2020
Test Completed	: 06/07/2020
Method of Sampling	: SOP/B/D-3
Date of Sampling	: 29/06/2020
Sampling Conducted By	: Mr. Manmohan Singh
Place of Sampling	: W-2: STP Outlet, Inside GGSR

Analysis Report

Sr. No.	Parameters	Unit	Test Results	Standards	Protocol
			W2		
1	pH	-	7.43	6.5 to 9.0	IS:3025 (P-11)
2	Temperature	°C	27.4	-	IS:3025 (P-9)
3	TSS	mg/l	8.4	≤10mg/l	IS:3025 (P-17)
4	COD	mg/l	41.5	≤50mg/l	IS:3025 (P-58)
5	BOD	mg/l	9.6	≤10mg/l	IS:3025 (P-44)
6	O & G	mg/l	BDL	≤5mg/l	IS:3025 (P-39)
7	Ammonical Nitrogen as N*	mg/l	5.29	≤5mg/l	IS:3025 (P-34)
8	N-total*	mg/l	6.21	≤10mg/l	IS:3025 (P-34)
9	PO4-P*	mg/l	1.17	≤2mg/l	IS:3025 (P-31)
10	Total Coliform Count	MPN/100ml	120	≤230/100mg/l	IS: 1622


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**Scanned copy of original Manual Environmental Monitoring Test
reports Jul'2020**

Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi
Sabu, Distt. Bhatinda, Punjab, India

URL No.: TC636620000000001, TC636620000000009, TC636620000000063,
TC636620000000108, TC636620000000160, TC636620000000234
TC636620000000305, TC636620000000377

Test Report Date: 02/08/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-1
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

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
02/07/2020	09:30	1.12	3.019	BDL	BDL	BDL
06/07/2020	09:20	1.00	3.291	BDL	BDL	BDL
10/07/2020	09:40	1.12	3.726	BDL	BDL	BDL
13/07/2020	09:10	1.14	2.019	BDL	BDL	BDL
17/07/2020	09:30	1.11	4.927	BDL	BDL	BDL
20/07/2020	09:40	1.14	2.038	BDL	BDL	BDL
24/07/2020	09:15	1.11	2.736	BDL	BDL	BDL
28/07/2020	09:20	1.12	4.152	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			NL/SOP/AAQ- 12	NL/SOP/AAQ- 12	IS:5182 (P-12)	IS:5182 (P-22)/ NL/SOP/AAQ-11

Remark:

*NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(I)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

URL No.: TC636620000000002, TC636620000000010, TC636620000000064
TC6366200000000109, TC6366200000000161, TC6366200000000235
TC6366200000000306, TC6366200000000378

Test Report Date: 02/08/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-2
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

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
02/07/2020	09:45	1.21	4.102	BDL	BDL	BDL
06/07/2020	09:35	1.00	3.287	BDL	BDL	BDL
10/07/2020	09:55	1.12	4.281	BDL	BDL	BDL
13/07/2020	09:30	1.14	5.027	BDL	BDL	BDL
17/07/2020	09:45	1.10	4.271	BDL	BDL	BDL
20/07/2020	09:55	1.11	3.982	BDL	BDL	BDL
24/07/2020	09:30	1.14	2.917	BDL	BDL	BDL
28/07/2020	09:40	1.15	4.182	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			NL/SOP/AA Q-12	NL/SOP/AAQ- 12	IS:5182 (P-12)	IS:5182 (P-22)/ NL/SOP/AAQ-11

Remark:

*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(I)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC63662000000003, TC636620000000011, TC636620000000065
TC636620000000010, TC636620000000062, TC6366200000000236
TC6366200000000307, TC6366200000000379

Test Report Date: 02/08/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: Ambient Air Quality Monitoring
: Ambient Air Quality Monitoring Station (AAQMS)-3
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

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
02/07/2020	09:59	1.12	3.928	BDL	BDL	BDL
06/07/2020	09:54	1.11	2.637	BDL	BDL	BDL
10/07/2020	10:10	1.14	3.019	BDL	BDL	BDL
13/07/2020	09:50	1.11	3.261	BDL	BDL	BDL
17/07/2020	09:59	1.21	4.019	BDL	BDL	BDL
20/07/2020	10:15	1.16	2.837	BDL	BDL	BDL
24/07/2020	09:45	1.20	3.837	BDL	BDL	BDL
28/07/2020	09:57	1.12	4.251	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			NL/SOP/AA Q-12	NL/SOP/AA Q-12	IS:5182 (P-12)	IS:5182 (P-22)/ NL/SOP/AAQ-11

Remark:

*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec-3(ii)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.



Certificate No.
T-6366

Authorised
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(RAVINDER MITTAL)

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhari, Taluka Talwandi Sabr
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000004, TC636620000000012, TC636620000000066
TC636620000000011, TC6366200000000163, TC6366200000000237
TC6366200000000308, TC6366200000000380

Test Report Date: 02/08/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-4
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

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
02/07/2020	10:15	1.10	4.281	BDL	BDL	BDL
06/07/2020	10:20	1.12	3.920	BDL	BDL	BDL
10/07/2020	10:30	1.01	3.876	BDL	BDL	BDL
13/07/2020	10:10	1.12	2.321	BDL	BDL	BDL
17/07/2020	10:20	1.14	3.898	BDL	BDL	BDL
20/07/2020	10:35	1.16	4.987	BDL	BDL	BDL
24/07/2020	10:00	1.14	3.871	BDL	BDL	BDL
28/07/2020	10:15	1.11	2.908	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			NL/SOP/AAQ-12	NL/SOP/AAQ-12	IS:5182 (P-12)	IS:5182 (P-22)/NL/SOP/AAQ-11

Remark:

*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

URL No.: TC63662000000005, TC63662000000013, TC63662000000067
TC636620000000112, TC636620000000164, TC636620000000238
TC636620000000309, TC636620000000381
Test Report Date: 02/08/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-5
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

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
02/07/2020	10:30	1.12	3.029	BDL	BDL	BDL
06/07/2020	10:35	1.00	3.928	BDL	BDL	BDL
10/07/2020	10:45	1.10	4.192	BDL	BDL	BDL
13/07/2020	10:25	1.02	4.431	BDL	BDL	BDL
17/07/2020	10:35	1.11	3.917	BDL	BDL	BDL
20/07/2020	10:59	1.12	3.192	BDL	BDL	BDL
24/07/2020	10:16	1.14	4.121	BDL	BDL	BDL
28/07/2020	10:30	1.12	4.321	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			NL/SOP/AAQ- 12	NL/SOP/AA Q-12	IS:5182 (P-12)	IS:5182 (P-22)/ NL/SOP/AAQ-11

Remark:

*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(I)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0]
BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample
Analysed within Three days after Receipt.



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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

URL No.: TC636620000000006, TC636620000000014, TC636620000000068
TC6366200000000113, TC6366200000000165, TC6366200000000239
TC6366200000000310, TC6366200000000382

Test Report Date: 02/08/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-6
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR of RDS (m3/min)	AFR of FPS (m3/hr)	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
02/07/2020	10:41	1.10	0.99	1.837	BDL	BDL	BDL	67.98	110.8	29.4	42.1	0.653
06/07/2020	10:50	1.12	1.12	2.487	BDL	BDL	BDL	70.32	100.2	25.1	43.3	0.975
10/07/2020	10:58	1.14	0.98	3.019	BDL	BDL	BDL	65.91	98.4	28.9	36.7	0.243
13/07/2020	10:40	1.21	0.97	4.162	BDL	BDL	BDL	61.23	102.3	26.3	41.5	0.493
17/07/2020	10:50	1.16	1.20	3.827	BDL	BDL	BDL	66.30	109.4	25.5	37.5	0.6531
20/07/2020	11:10	1.14	1.12	2.930	BDL	BDL	BDL	63.29	105.3	24.3	21.4	0.837
24/07/2020	10:30	1.12	1.00	2.837	BDL	BDL	BDL	68.39	110.2	29.1	28.9	0.583
28/07/2020	10:46	1.10	0.99	3.987	BDL	BDL	BDL	61.20	102.4	27.4	30.1	0.627
National Ambient Air Quality Monitoring Standards (2009)				20	06	01	01	60	100	80	80	04
Test Method				NL/SOP /AAQ-12	NL/SOP /AAQ-12	IS:518 2 (P-12)	IS:518 2 (P-22)/ NL/SO P/AA Q-11	40CFR Appendix I Part 53 CPCB Guidelines	IS:518 2 (P-23)	IS:518 2 (P-2)	IS:518 2 (P-6)	IS:5182 (P-10)

Remark:
*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ-0.01µg/m³], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within three days after Receipt.



(AUTHORISED SIGNATORY)
(RAVINDER MITTAL)

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000434 - TC636620000000443

Test Report Date: 02/08/2020

Sample Particulars:

Nature of the Sample

Date of Monitoring

Purpose of Monitoring

Place of Monitoring

Monitoring Conducted By

Protocol Used

: Ambient Noise

: 31/07/2020

: To Check the Pollution Load

: HMEL Refinery

: Mr. Animesh Jha

: NL/SOP/ENV-05 Based on IS: 9989

Analysis Report

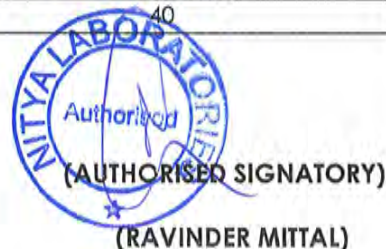
Sr. No.	Location	Test Result dB(A) Day Time	Test Result dB(A) Night Time
Permissible Limit in *dB(A) Leq For Industrial Area		75 dB(A)	70 dB(A)
1	Near Refinery Main Gate	74.9	68.9
2	Near Fire Water Reservoir	65.3	61.3
3	Near Road Crude Oil Tanks	70.1	61.8
4	Near ETP and Flare	71.3	62.1
5	Near Storm Water Pond East Side	67.3	56.8
6	Near Sulphur Yard South East Side	66.9	59.4
7	Near Rail Loading Dispatch South East Side	72.1	52.1
8	Near CPP North East Side	71.2	62.1
9	Near Poly Propylene Dispatch Area	69.8	63.5
10	Near Ecological Pond Area	65.9	60.2

*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	Limits dB (A) Leq	
		Day Time (6AM - 10PM)	Night Time (10PM - 06AM)
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 Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000504

Test Report Date: 07/08/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 31/07/2020
Time of Sampling	: 12:10 PM
Test Started on	: 01/08/2020
Test Completed On	: 06/08/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: SRU 524
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 100
Diameter of the stack(m)	: 2.0
Sampling duration (min)	: 40

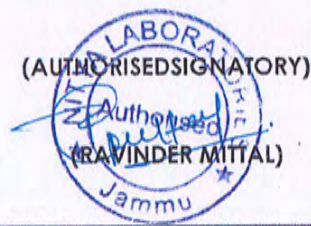
Observations:

Flue Gas Temperature °C	: 178
Ambient Air Temperature °C	: 28
Flue Gas Velocity (m/s)	: 14.54

Analysis Report

Sr. No.	Parameters	Results (mg/Nm ³)	Limits for 100 % Fuel Gas(mg/Nm ³)	Test Method
1	Oxide of Nitrogen (as NO _x)	94.45	250	IS-11255(P-7)
2	Carbon Monoxide (as CO)	61.29	100	IS-13270
3	Oxides of Sulphur (as SO _x)	163.1	N.A.	IS-11255 (P-2)
4	Hydrogen Sulphide (as H ₂ S)	BDL(LOQ-0.1)	10	IS:11255 (P-4)

Remark: Not Detected; *LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.



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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000505
Test Report Date: 07/08/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 31/07/2020
Time of Sampling	: 02:00 PM
Test Started on	: 01/08/2020
Test Completed On	: 06/08/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: SRU 525
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 100
Diameter of the stack(m)	: 2.0
Sampling duration (min)	: 40
Observations:	
Flue Gas Temperature °C	: 167
Ambient Air Temperature °C	: 28
Flue Gas Velocity (m/s)	: 13.20

Analysis Report

Sr. No.	Parameters	Results (mg/Nm ³)	Limits for 100 % Fuel Gas(mg/Nm ³)	Test Method
1	Oxide of Nitrogen (as NO _x)	41.30	250	IS-11255(P-7)
2	Carbon Monoxide (as CO)	31.49	100	IS-13270
3	Oxides of Sulphur (as SO _x)	163.1	NA	IS-11255 (P-2)
4	Hydrogen Sulphide (as H ₂ S)	BDL(LOQ-0.1)	10	IS:11255 (P-4)

Remark: Not Detected; LOQ-Limit of Quantification, the lowest concentration of a substance that can be accurately measured under specified experimental conditions.



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Test Report

Issued to: HPCL-Mittal Energy Limited

Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000168 - TC636620000000178

Test Report Date: 02/08/2020

Sample Particulars:

Nature of the Sample & No. of Samples

Sample Quantity & Packaging

Test Started on

Test Completed

Method of Sampling

Date of Sampling

Sampling Conducted By

: Ground Water & Eleven Samples

: 2.0 Liter, Pet Bottle

: 18/07/2020

: 25/07/2020

: SOP/B/D-3

: 17/07/2020

: Mr. Manmohan Singh

Analysis Report

Parameter		pH	Color	Temperature	Turbidity	TDS	Alkalinity as (CaCO ₃)	Total Hardness as (CaCO ₃)	Chlorides	Fluorides
Location										
GW1		7.21	<5	25.6	<1	652	156	289	191.1	0.87
GW2		7.43	<5	26.4	<1	582	194	234	246.3	0.83
GW3		7.18	<5	25.6	<1	592	291	273	187.1	0.81
GW4		7.25	<5	25.6	<1	681	245	247	287.2	0.93
GW5		7.40	<5	26.7	<1	531	219	274	143.5	0.72
GW6		7.36	<5	27.6	<1	582	256	324	142.2	0.69
GW7		7.26	<5	26.5	<1	481	210	215	178.9	0.89
GW8		7.20	<5	27.0	<1	435	231	231	187.0	0.83
GW9		7.16	<5	27.4	<1	532	198	243	167.7	0.81
GW10		7.36	<5	27.2	<1	526	201	315	193.2	0.49
GW11		7.17	<5	27.1	<1	528	287	311	152.1	0.79
IS 10500	Desirable	6.5-8.5	5	-	1	500	200	200	250	1.0
	Permissible	6.5-8.5	15	-	5	2000	600	600	1000	1.5
Protocol		IS:3025 (P-11)	IS:3025 (P-4)	IS:3025 (P-9)	IS:3025 (P-10)	IS:3025 (P-16)	IS:3025 (P-23)	IS: 3025 (P-21)	IS:3025 (P-21)	IS:3025 (P-60)

Remark:

GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond - North East Side, GW3: Near Ecological Pond West Side, GW4: Near Ecological Pond South East Side
GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water Block Area, GW7: Near RO/DM Plant East Side
Area GW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side, GW10: Secured Landfill Area South Side, GW11: Near ETP South Side



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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000168 - TC636620000000178

Test Report Date: 02/08/2020

Analysis Report

Parameter	Calcium as Ca	Magnesium as Mg	Sulphate	Nitrates	Iron (as Fe)	Mercury (as Hg)	Zinc (as Zn)	Cadmium (as Cd)	Chromium (as Cr)	Arsenic (as As)
GW1	56.29	35.48	150.18	17.8	0.32	BDL	BDL	BDL	BDL	BDL
GW2	43.18	18.29	120.4	16.8	0.39	BDL	BDL	BDL	BDL	BDL
GW3	56.19	32.48	123.19	17.2	0.41	BDL	BDL	BDL	BDL	BDL
GW4	50.18	34.18	134.2	16.8	0.54	BDL	BDL	BDL	BDL	BDL
GW5	40.16	29.19	128.8	21.4	0.43	BDL	BDL	BDL	BDL	BDL
GW6	50.18	31.29	134.2	19.7	0.37	BDL	BDL	BDL	BDL	BDL
GW7	56.48	23.19	129.7	20.1	0.39	BDL	BDL	BDL	BDL	BDL
GW8	46.19	36.49	120.1	23.4	0.41	BDL	BDL	BDL	BDL	BDL
GW9	52.19	35.39	118.9	21.3	0.27	BDL	BDL	BDL	BDL	BDL
GW10	60.18	40.17	134.7	22.5	0.34	BDL	BDL	BDL	BDL	BDL
GW11	50.18	32.18	139.6	19.8	0.31	BDL	BDL	BDL	BDL	BDL
IS 10500 Desirable	75	30	200	45	1	0.001	5	0.003	0.05	0.01
IS 10500 Permissible	200	100	400	No Relaxation	No Relaxation	No Relaxation	15	No Relaxation	No Relaxation	0.05
Protocol	IS:3025 (P-40)	IS:3025 (P-46)	APHA 23 rd Ed.	IS:3025 (P-34)	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.

Remark:

GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond - North East Side, GW3: Near Ecological Pond West Side, GW4: Near Ecological Pond South East Side
GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water Block Area, GW7: Near RO/DM Plant East Side Area
GW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side, GW10: Secured Landfill Area South Side, GW11: Near ETP South Side



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Test Report

Issued to: **HPCL-Mittal Energy Limited**

Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000168 - TC636620000000178

Test Report Date: 02/08/2020

Analysis Report

Parameter		Lead (as Pb)	Boron (as B)	Selenium (as Se*)	RFC	Polycyclic Aromatic Hydrocarbons (PAH*)	Anionic Detergent*	Aluminum (as Al)	Total Coliform
GW1		BDL	0.43	BDL	BDL	BDL	BDL	BDL	Absent
GW2		BDL	0.28	BDL	BDL	BDL	BDL	BDL	Absent
GW3		BDL	0.32	BDL	BDL	BDL	BDL	BDL	Absent
GW4		BDL	0.29	BDL	BDL	BDL	BDL	BDL	Absent
GW5		BDL	0.32	BDL	BDL	BDL	BDL	BDL	Absent
GW6		BDL	0.45	BDL	BDL	BDL	BDL	BDL	Absent
GW7		BDL	0.26	BDL	BDL	BDL	BDL	BDL	Absent
GW8		BDL	0.32	BDL	BDL	BDL	BDL	BDL	Absent
GW9		BDL	0.38	BDL	BDL	BDL	BDL	BDL	Absent
GW10		BDL	0.31	BDL	BDL	BDL	BDL	BDL	Absent
GW11		BDL	0.43	BDL	BDL	BDL	BDL	BDL	Absent
IS 10500	Desirable	0.01	0.5	0.01	0.2	0.0001	0.2	0.03	Absent
	Permissible	No Relaxation	1.0	No	1.0	No	1.0	0.2	Absent
Protocol		APHA 23 rd Ed.	IS:3025 (P-57)	APHA 23 rd Ed.	IS:3025 (P-26)	APHA 23 rd Ed.	IS:13428 (P-K)	IS:3025 (P-55)	IS: 1622

Remark:

GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond - North East Side, GW3: Near Ecological Pond West Side, GW4: Near Ecological Pond South East Side, GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water Block Area, GW7: Near RO/DM Plant East Side Area, GW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side, GW10: Secured Landfill Area South Side, GW11: Near ETP South Side



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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No.: 202007170110-120

Test Report Date: 02/08/2020

Sample Particulars:

Nature of the Sample & No. of Samples : **Ground Water & Eleven Samples**
Sample Quantity & Packaging : 2.0 Liter, Pet Bottle
Test Started on : 18/07/2020
Test Completed : 25/07/2020
Method of Sampling : SOP/B/D-3
Date of Sampling : 17/07/2020
Sampling Conducted By : Mr. Manmohan Singh

Analysis Report

Parameter	Odour	Taste	Phenolic Compounds	Cyanide (as CN*)	Mineral Oil*
GW1	Agreeable	Agreeable	BDL	BDL	BDL
GW2	Agreeable	Agreeable	BDL	BDL	BDL
GW3	Agreeable	Agreeable	BDL	BDL	BDL
GW4	Agreeable	Agreeable	BDL	BDL	BDL
GW5	Agreeable	Agreeable	BDL	BDL	BDL
GW6	Agreeable	Agreeable	BDL	BDL	BDL
GW7	Agreeable	Agreeable	BDL	BDL	BDL
GW8	Agreeable	Agreeable	BDL	BDL	BDL
GW9	Agreeable	Agreeable	BDL	BDL	BDL
GW10	Agreeable	Agreeable	BDL	BDL	BDL
GW11	Agreeable	Agreeable	BDL	BDL	BDL
IS 10500	Desirable	Agreeable	0.001	0.05	0.5
	Permissible	Agreeable	0.002	No	No
Protocol	IS:3025 (P-5)	IS:3025 (P-7)	IS:3025 (P-43)	IS:3025 (P-43)	APHA 23rd Ed.

Remark:

GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond – North East Side, GW3: Near Ecological Pond West Side, GW4: Near Ecological Pond South East Side, GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water Block Area, GW7: Near RO/DM Plant East Side Area, GW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side, GW10: Secured Landfill Area South Side, GW11: Near ETP South Side

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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

URL No.: TC636620000000455- TC636620000000465
Test Report Date: 04/08/2020

Sample Particulars:

Nature of the Sample & No. of Samples : Outside Ground Water & Eleven Samples
Sample Quantity & Packaging : 2.0 Liter, Pet Bottle
Test Started on : 31/07/2020
Test Completed : 04/08/2020
Method of Sampling : SOP/B/D-3
Date of Sampling : 30/07/2020
Sampling Conducted By : Mr. Manmohan Singh

Analysis Report

Parameter	pH	Color	Temperature	Turbidity	TDS	Alkalinity as (CaCO ₃)	Total Hardness as (CaCO ₃)	Chlorides	Fluorides
Location									
GW1	7.43	<5	26	<1	482	163	224	291	0.78
GW2	7.24	<5	26	<1	392	158	194	194	0.98
GW3	7.34	<5	26	<1	410	182	352	193.2	0.62
GW4	7.45	<5	26	<1	472	198	298	175.5	0.53
GW5	7.56	<5	26	<1	612	231	392	319.2	0.72
GW6	7.51	<5	26	<1	786	291	593	342.4	0.91
GW7	7.41	<5	26	<1	425	254	432	156.7	0.54
GW8	7.34	<5	26	<1	521	310	301	180.2	0.92
GW9	7.30	<5	26	<1	321	154	254	293.4	0.83
GW10	7.42	<5	26	<1	311	162	198	178.1	0.54
GW11	7.34	<5	26	<1	410	172	224	293.4	0.81
Requirements as per IS:10500	6.5-8.5	5	-	1	500	200	200	250	1.0
	6.5-8.5	15	-	5	2000	600	600	1000	1.5
Protocol	IS:3025 (P-11)	IS:3025 (P-4)	IS:3025 (P-9)	IS:3025 (P-10)	IS:3025 (P-16)	IS:3025 (P-23)	IS: 3025 (P-21)	IS:3025 (P-21)	IS:3025 (P-60)

Remark:

GW1: Phulokari, GW2: Jagmalwali, GW3: Ramsara, GW4: Raman Mandi, GW5: Teno Pujaram, GW6: Pipli, GW7: Naurang, GW8: Khokhar
GW9: Bangi Roughu, GW10: Takhanwala, GW11: Sekho



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Test Report

Issued to: HPCL-Mittal Energy Limited

Village Phullokhar, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

URL No.: TC636620000000455- TC636620000000465

Test Report Date: 04/08/2020

Analysis Report

Parameter	Calcium as Ca	Magnesium as Mg	Sulphate	Nitrate s	Iron (as Fe)	Mercury (as Hg)	Zinc (as Zn)	Cadmium (as Cd)	Chromium (as Cr)	Arsenic (as As)
GW1	59.3	19.4	98.2	30.2	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
GW2	56.2	22.5	80.5	21.1	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
GW3	56.7	34.6	114.2	28.6	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
GW4	62.1	48.2	130.4	32.1	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
GW5	104.5	67.3	156.3	21.4	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
GW6	98.2	54.2	220.5	21.2	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
GW7	87.1	43.2	173.2	30.2	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
GW8	56.1	34.1	132.1	34.2	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
GW9	67.1	22.4	87.4	11.8	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
GW10	25.4	21.1	77.3	5.1	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
GW11	43.5	22.8	121.1	4.1	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
Requirement as per IS:10500	75	30	200	45	1	0.001	5	0.003	0.05	0.01
	200	100	400	No Relaxation	No Relaxation	No Relaxation	15	No Relaxation	No Relaxation	0.05
Protocol	IS:3025 (P-40)	IS:3025 (P-46)	APHA 23 rd Ed.	IS:3025 (P-34)	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.

Remark:

GW1: Phulokari, GW2: Jagmalwali, GW3: Ramsara, GW4: Raman Mandi, GW5: Teno Pujaram, GW6: Pipli, GW7: Naurang, GW8: Khokhar
GW9: Bangi Roughu, GW10: Takhanwala, GW11: Sekho



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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000455- TC636620000000465
Test Report Date: 04/08/2020

Analysis Report

Parameter	Lead (as Pb)	Boron (as B)	Selenium (as Se*)	RFC	Polycyclic Aromatic Hydrocarbons (PAH*)	Anionic Detergent*	Aluminum (as Al)	Total Coliform
GW1	BDL[LOQ-0.01]	0.21	BDL[LOQ-0.01]	BDL[LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
GW2	BDL[LOQ-0.01]	0.23	BDL[LOQ-0.01]	BDL[LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
GW3	BDL[LOQ-0.01]	0.3	BDL[LOQ-0.01]	BDL[LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
GW4	BDL[LOQ-0.01]	0.15	BDL[LOQ-0.01]	BDL[LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
GW5	BDL[LOQ-0.01]	0.16	BDL[LOQ-0.01]	BDL[LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
GW6	BDL[LOQ-0.01]	0.26	BDL[LOQ-0.01]	BDL[LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
GW7	BDL[LOQ-0.01]	0.34	BDL[LOQ-0.01]	BDL[LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
GW8	BDL[LOQ-0.01]	0.46	BDL[LOQ-0.01]	BDL[LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
GW9	BDL[LOQ-0.01]	0.40	BDL[LOQ-0.01]	BDL[LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
GW10	BDL[LOQ-0.01]	0.39	BDL[LOQ-0.01]	BDL[LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
GW11	BDL[LOQ-0.01]	0.15	BDL[LOQ-0.01]	BDL[LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
Requirement as per IS:10500	0.01	0.5	0.01	0.2	0.0001	0.2	0.03	Absent
	No Relaxation	1.0	No	1.0	No	1.0	0.2	Absent
Protocol	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	IS: 1622

Remark:

GW1: Phulokari, GW2: Jagmalwali, GW3: Ramsara, GW4: Raman Mandi, GW5: Teno Pujaram, GW6: Pipili, GW7: Naurang, GW8: Khokhar
GW9: Bangi Roughu, GW10: Takhanwala, GW11: Sekho



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

Test Report No.:202007300110
Test Report Date: 04/08/2020

Sample Particulars:

Nature of the Sample & No. of Samples : Outside Ground Water & Eleven Samples
Sample Quantity & Packaging : 2.0 Liter, Pet Bottle
Test Started on : 31/07/2020
Test Completed : 04/08/2020
Method of Sampling : SOP/B/D-3
Date of Sampling : 30/07/2020
Sampling Conducted By : Mr. Manmohan Singh

Analysis Report

Parameter	Odour	Taste	Phenolic Compounds	Cyanide (as CN*)	Mineral Oil*
GW1	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL[LOQ-0.05]	BDL [LOQ-0.5]
GW2	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL[LOQ-0.05]	BDL [LOQ-0.5]
GW3	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL[LOQ-0.05]	BDL [LOQ-0.5]
GW4	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL[LOQ-0.05]	BDL [LOQ-0.5]
GW5	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL[LOQ-0.05]	BDL [LOQ-0.5]
GW6	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL[LOQ-0.05]	BDL [LOQ-0.5]
GW7	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL[LOQ-0.05]	BDL [LOQ-0.5]
GW8	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL[LOQ-0.05]	BDL [LOQ-0.5]
GW9	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL[LOQ-0.05]	BDL [LOQ-0.5]
GW10	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL[LOQ-0.05]	BDL [LOQ-0.5]
GW11	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL[LOQ-0.05]	BDL [LOQ-0.5]
Requirement as per IS:10500	Agreeable	Agreeable	0.001	0.05	0.5
	Agreeable	Agreeable	0.002	No	No
Protocol	IS:3025 (P-5)	IS:3025 (P-7)	IS:3025 (P-43)	APHA 23 rd Ed.	APHA 23 rd Ed.

Remark:

GW1: Phulokari, GW2: Jagmalwali, GW3: Ramsara, GW4: Raman Mandi, GW5: Teno Pujaram, GW6: Pipil, GW7: Naurang
GW8: Khokhar, GW9: Bangi Roughu, GW10: Takhanwala, GW11: Sekho

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

URL No.: TC636620000000466- TC636620000000473
Test Report Date: 04/08/2020

Sample Particulars:

Nature of the Sample & No. of Samples : Outside Ground Water & Eight Samples
S Sample Quantity & Packaging : 2.0 Liter, Pet Bottle
Test Started on : 31/07/2020
Test Completed : 04/08/2020
Method of Sampling : SOP/B/D-3
Date of Sampling : 30/07/2020
Sampling Conducted By : Mr. Manmohan Singh

Analysis Report

Parameter	pH	Color	Temperature	Turbidity	TDS	Alkalinity as (CaCO ₃)	Total Hardness as (CaCO ₃)	Chlorides	Fluorides
Location									
GW12	7.29	<5	26	<1	482	182	184	183.2	0.43
GW13	7.43	<5	26	<1	462	173	219	87.5	0.56
GW14	7.51	<5	26	<1	421	152	231	111.2	0.42
GW15	7.56	<5	26	<1	374	182	243	123.2	0.56
GW16	7.31	<5	26	<1	251	152	154	99.4	0.65
GW17	7.52	<5	26	<1	445	139	271	121.1	0.32
GW18	7.34	<5	26	<1	482	175	243	153.2	0.23
GW19	7.11	<5	26	<1	387	149	291	149.8	0.50
Requirement as per IS:10500	6.5-8.5	5	-	1	500	200	200	250	1.0
	6.5-8.5	15	-	5	2000	600	600	1000	1.5
Protocol	IS:3025 (P-11)	IS:3025 (P-4)	IS:3025 (P-9)	APHA 23 rd Ed.	IS:3025 (P-16)	IS:3025 (P-23)	IS: 3025 (P-21)	IS:3025 (P-21)	APHA 23 rd Ed.

Remark:

GW12: Desu, GW13: Hassu, GW14: Bangi Deepa, GW15: Bathinda Railway Station, GW16: Bhakra (DS), GW17:Bathinda
GW18: Kota Branch Near Jodhpur Village, GW19: Township



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CORPORATE OFFICE & CENTRAL LABORATORIES :-

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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phullokhari, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

URL No.: TC63662000000466- TC63662000000473
Test Report Date: 04/08/2020

Analysis Report

Parameter	Calcium as Ca	Magnesium as Mg	Sulphate	Nitrates	Iron (as Fe)	Mercury (as Hg)	Zinc (as Zn)	Cadmium (as Cd)	Chromium (as Cr)	Arsenic (as As)
GW12	42.3	23.4	129.3	4.2	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
GW13	43.2	25.6	120.2	8.7	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
GW14	39.1	23.1	87.9	6.7	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
GW15	65.4	21.5	119.2	12.4	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
GW16	26.7	19.4	71.2	3.5	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
GW17	67.1	24.5	98.2	13.2	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
GW18	31.2	40.2	121.3	16.5	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
GW19	69.4	29.8	124.3	15.3	BDL [LOQ- 0.3]	BDL [LOQ- 0.001]	BDL [LOQ- 5]	BDL [LOQ- 0.003]	BDL [LOQ- 0.05]	BDL [LOQ- -0.01]
Requirement as per IS:10500	75	30	200	45	1	0.001	5	0.003	0.05	0.01
	200	100	400	No Relaxation	No Relaxation	No Relaxation	15	No Relaxation	No Relaxation	0.05
Protocol	IS:3025 (P-40)	IS:3025 (P-46)	APHA 23 rd Ed.	IS:3025 (P-34)	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.

Remark:

GW12: Desu, GW13: Hassu, GW14: Bangi Deepa, GW15: Bathinda Railway Station, GW16: Bhakra (DS), GW17: Bathinda
GW18: Kota Branch Near Jodhpur Village, GW19: Township



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000466- TC636620000000473
Test Report Date: 04/08/2020

Analysis Report

Parameter	Lead (as Pb)	Boron (as B)	Selenium (as Se*)	RFC	Polycyclic Aromatic Hydrocarbons (PAH*)	Anionic Detergent*	Aluminum (as Al)	Total Coliform
GW12	BDL [LOQ-0.01]	0.24	BDL [LOQ-0.01]	BDL [LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
GW13	BDL [LOQ-0.01]	0.43	BDL [LOQ-0.01]	BDL [LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
GW14	BDL [LOQ-0.01]	0.21	BDL [LOQ-0.01]	BDL [LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
GW15	BDL [LOQ-0.01]	0.19	BDL [LOQ-0.01]	BDL [LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
GW16	BDL [LOQ-0.01]	0.43	BDL [LOQ-0.01]	BDL [LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
GW17	BDL [LOQ-0.01]	0.25	BDL [LOQ-0.01]	BDL [LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
GW18	BDL [LOQ-0.01]	0.26	BDL [LOQ-0.01]	BDL [LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
GW19	BDL [LOQ-0.01]	0.32	BDL [LOQ-0.01]	BDL [LOQ-0.2]	BDL [LOQ-0.0001]	BDL [LOQ-0.2]	BDL [LOQ-0.03]	Absent
Requirement as per IS:10500	0.01	0.5	0.01	0.2	0.0001	0.2	0.03	Absent
	No Relaxation	1.0	No	1.0	No	1.0	0.2	Absent
Protocol	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	IS: 1622

Remark:

GW12: Desu, GW13: Hassu, GW14: Bangi Deepa, GW15: Bathinda Railway Station, GW16: Bhakra (DS), GW17: Bathinda
GW18: Kota Branch Near Jodhpur Village, GW19: Township



Certificate No.
T-6366



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Test Report No.: 202007300111
Test Report Date: 04/08/2020

Sample Particulars:

Nature of the Sample & No. of Samples : Outside Ground Water & Eight Samples
S Sample Quantity & Packaging : 2.0 Liter, Pet Bottle
Test Started on : 31/07/2020
Test Completed : 04/08/2020
Method of Sampling : SOP/B/D-3
Date of Sampling : 30/07/2020
Sampling Conducted By : Mr. Manmohan Singh

Analysis Report

Parameter	Odour	Taste	Phenolic Compounds	Cyanide (as CN*)	Mineral Oil*
GW12	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL [LOQ-0.05]	BDL [LOQ-0.5]
GW13	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL [LOQ-0.05]	BDL [LOQ-0.5]
GW14	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL [LOQ-0.05]	BDL [LOQ-0.5]
GW15	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL [LOQ-0.05]	BDL [LOQ-0.5]
GW16	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL [LOQ-0.05]	BDL [LOQ-0.5]
GW17	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL [LOQ-0.05]	BDL [LOQ-0.5]
GW18	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL [LOQ-0.05]	BDL [LOQ-0.5]
GW19	Agreeable	Agreeable	BDL [LOQ-0.001]	BDL [LOQ-0.05]	BDL [LOQ-0.5]
Requirement as per IS:10500	Agreeable	Agreeable	0.001	0.05	0.5
	Agreeable	Agreeable	0.002	No	No
Protocol	IS:3025 (P-5)	IS:3025 (P-7)	IS:3025 (P-43)	APHA 23 rd Ed.	APHA 23 rd Ed.

Remark:

GW12: Desu, GW13: Hassu, GW14: Bangi Deepa, GW15: Bathinda Railway Station, GW16: Bhakra (DS)
GW17: Bathinda, GW18: Kota Branch Near Jodhpur Village, GW19: Township


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(RAVINDER MITTAL)

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000419- TC636620000000433

Test Report Date: 02/08/2020

Sample Particulars:

Nature of the Sample

Date of Monitoring

Purpose of Monitoring

Place of Monitoring

Monitoring Conducted By

Protocol Used

: Volatile Organic Carbon

: 31/07/2020

: To Check the Pollution Load

: HMEL Refinery

: Mr. Animesh Jha

: SOP No. NL /SOP /AAQ/ VOC/ 01 on dated 01/08/2019

Portable PID Based Gas Detector for VOC's – Honeywell RAE

Analysis Report

Sr. No.	Locations	Test Results (PPM)
1	Near ETP	0.4
2	Near Rail Gantry	BDL
3	Near Road Gantry	BDL
4	Battery limits of CDU/VDU	BDL
5	Battery limits of FCCU	BDL
6	Battery limits of DHDT	BDL
7	Battery limits of VGO-HDT	BDL
8	Battery limits of MS Block	BDL
9	Battery limits of DCU	BDL
10	Product Intermediate Storage Tanks Down Wind Direction	BDL
11	Product Intermediate Storage Tank UP Wind Direction	BDL
12	Near HPCL Product Dispatch Pumps	0.2
13	Battery limits of PPU	BDL
14	Near Crude Oil storage Tanks	0.3
15	Battery Limits of SRU Block	BDL

Remark:

BDL-Below Detection Limit (LOQ-0.1)



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Test Report

Issued to: HPCL-Mittal Energy Limited

Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000179

Test Report Date: 02/08/2020

Sample Particulars:

Sample Quantity & Packaging : 2.0 Liter, Pet Bottle
Test Test Started on : 18/07/2020
Test Completed : 25/07/2020
Method of Sampling : SOP/B/D-3
Date of Sampling : 17/07/2020
Sampling Conducted By : Mr. Manmohan Singh
Place of Sampling : W-1: ETP Outlet, Inside GGSR

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
1	pH	...	7.72	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	19.3	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	94.29	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	13.87	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	BDL	5.0	IS:3025 (P-39)
6	Phenolic Compounds (C ₆ H ₅ OH)	mg/L	0.31	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.42	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH ₃)	mg/L	19.4	40	IS:3025 (P-34)
9	Phosphate	mg/L	1.2	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 -23 rd Ed.
12	Lead (Pb)	mg/L	BDL	0.1	APHA-23 rd Ed.
13	Mercury (Hg)	mg/L	BDL	0.01	APHA-23 rd Ed.
14	Zinc (Zn)	mg/L	BDL	5.0	APHA-23 rd Ed.
15	Nickel (Ni)	mg/L	BDL	1.0	APHA-23 rd Ed.



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No.: 202007170121
Test Report Date: 02/08/2020

Sample Particulars:

Sample Quantity & Packaging : 2.0 Liter, Pet Bottle
Test Started on : 18/07/2020
Test Completed : 25/07/2020
Method of Sampling : SOP/B/D-3
Date of Sampling : 17/07/2020
Sampling Conducted By : Mr. Manmohan Singh
Place of Sampling : W-1: ETP Outlet, Inside GGSR

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
1	Ammonia (N)	mg/L	8.29	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	BDL	0.20	APHA-23 rd Ed.
3	Total Chromium	mg/L	BDL	2.0	IS:3025 (P-52)
4	Vanadium (V)	mg/L	BDL	0.2	APHA-23 rd Ed.
5	Benzene	mg/L	BDL	0.1	APHA-23 rd Ed.
6	Benzo(a)-Pyrene	mg/L	BDL	0.2	APHA-23 rd Ed.


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Test Report

Issued to: HPCL-Mittal Energy Limited

Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000454

Test Report No.: 04/08/2020

Sample Particulars:

Nature of the Sample	: ETP Outlet
Sample Quantity & Packaging	: 5.0 Liter, Pet Bottle
Test Started on	: 31/07/2020
Test Completed	: 04/08/2020
Method of Sampling	: SOP/B/D-3
Date of Sampling	: 30/07/2020
Sampling Conducted By	: Mr. Manmohan Singh
Place of Sampling	: W-5: ETP Outlet, Inside GGSR

Sr. No.	Parameters	Unit	Test Result	Protocol
			W5	
1	Bioassay Toxic Test	%	98 % survival of fish after 96 hours in 100 % effluent	IS:6582 (P-1)



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000180

Test Report Date: 02/08/2020

Sample Particulars:

Nature of the Sample	: STP Outlet Refinery
Sample Quantity & Packaging	: 2.0 Liter, Pet Bottle
Test Test Started on	: 18/07/2020
Test Completed	: 25/07/2020
Method of Sampling	: SOP/B/D-3
Date of Sampling	: 17/07/2020
Sampling Conducted By	: Mr. Manmohan Singh
Place of Sampling	: W-2: STP Outlet, Inside GGSR

Analysis-Report

Sr. No.	Parameters	Unit	Test Results	Standards	Protocol
			W2		
1	pH	-	7.82	6.5 to 9.0	IS:3025 (P-11)
2	Temperature	°C	26.8	-	IS:3025 (P-9)
3	TSS	mg/l	8.9	≤10mg/l	IS:3025 (P-17)
4	COD	mg/l	41.3	≤50mg/l	IS:3025 (P-58)
5	BOD	mg/l	7.2	≤10mg/l	IS:3025 (P-44)
6	O & G	mg/l	BDL	≤5mg/l	IS:3025 (P-39)
7	Ammonical Nitrogen as N*	mg/l	4.76	≤5mg/l	IS:3025 (P-34)
8	PO4-P*	mg/l	1.76	≤2mg/l	IS:3025 (P-31)



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No.: 202007170122

Test Report Date: 02/08/2020

Sample Particulars:

Nature of the Sample	: STP Outlet Refinery
Sample Quantity & Packaging	: 2.0 Liter, Pet Bottle
Test Started on	: 18/07/2020
Test Completed	: 25/07/2020
Method of Sampling	: SOP/B/D-3
Date of Sampling	: 17/07/2020
Sampling Conducted By	: Mr. Manmohan Singh
Place of Sampling	: W-2: STP Outlet, Inside GGSR

Analysis Report

Sr. No.	Parameters	Unit	Test Results	Standards	Protocol
			W2		
1	N-total*	mg/l	7.54	≤10mg/l	IS:3025 (P-34)



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BUILDING & ROAD, MATERIAL, SOIL, ENVIRONMENTAL & CALIBRATION TESTING LAB

Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi
Sabu, Distt. Bhatinda, Punjab, India

URL No.: TC636620000000522, TC636620000000549, TC636620000000571,
TC636620000000601, TC636620000000638, TC636620000000673
TC636620000000725

Test Report Date: 28/08/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: Ambient Air Quality Monitoring
: Ambient Air Quality Monitoring Station (AAQMS)-1
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR of RDS (m ³ /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
03/08/2020	09:45	1.12	4.024	BDL	BDL	BDL
07/08/2020	09:35	1.14	3.844	BDL	BDL	BDL
10/08/2020	09:50	1.1	4.228	BDL	BDL	BDL
13/08/2020	09:10	1.12	3.194	BDL	BDL	BDL
17/08/2020	09:20	1.14	3.886	BDL	BDL	BDL
21/08/2020	09:35	1.1	2.642	BDL	BDL	BDL
24/08/2020	09:36	1.12	2.428	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			NL/SOP/AAQ- 12	NL/SOP/AAQ- 12	IS:5182 (P-12)	IS:5182 (P-22)/ NL/SOP/AAQ-11

Remark:

*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (38)], [Part-II-sec-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.



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(RAVINDER MITTAL)

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Test Report

Issued to: **HPCL-Mittal Energy Limited**

Village Phulokhari, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

URL No.: TC636620000000523, TC636620000000550, TC636620000000572,
TC636620000000602, TC636620000000639, TC636620000000674
TC636620000000726

Test Report Date: 28/08/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: Ambient Air Quality Monitoring

: Ambient Air Quality Monitoring Station (AAQMS)-2
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

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
03/08/2020	09:50	1.2	3.688	BDL	BDL	BDL
07/08/2020	10.22	1.00	4.246	BDL	BDL	BDL
10/08/2020	10.30	1.12	3.332	BDL	BDL	BDL
13/08/2020	10.32	1.16	4.184	BDL	BDL	BDL
17/08/2020	10.24	1.12	3.994	BDL	BDL	BDL
21/08/2020	10.22	1.14	4.876	BDL	BDL	BDL
24/08/2020	10.36	1.16	3.414	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			NL/SOP/AA Q-12	NL/SOP/AAQ- 12	IS:5182 (P-12)	IS:5182 (P-22)/ NL/SOP/AAQ-11

Remark:

*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II sec.-3 (ii)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0] Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.



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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phullokhari, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

URL No.: TC636620000000524, TC636620000000551, TC636620000000573,
TC636620000000603, TC636620000000640, TC636620000000675
TC636620000000727

Test Report Date: 28/08/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-3
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

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
03/08/2020	09:59	1.14	4.214	BDL	BDL	BDL
07/08/2020	09:54	1.16	4.915	BDL	BDL	BDL
10/08/2020	10:10	1.11	3.498	BDL	BDL	BDL
13/08/2020	09:50	1.0	3.614	BDL	BDL	BDL
17/08/2020	09:59	1.16	4.211	BDL	BDL	BDL
21/08/2020	10:15	1.0	3.214	BDL	BDL	BDL
24/08/2020	09:45	1.20	4.662	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			NL/SOP/AA Q-12	NL/SOP/AA Q-12	IS:5182 (P-12)	IS:5182 (P-22)/ NL/SOP/AAQ-11

Remark:

*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (38)], [Part-II-sec-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

URL No.: TC636620000000525, TC636620000000552, TC636620000000574,
TC636620000000604, TC636620000000641, TC636620000000676
TC636620000000728
Test Report Date: 28/08/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-4
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

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
03/08/2020	10:30	1.11	4.225	BDL	BDL	BDL
07/08/2020	10:30	1.14	4.116	BDL	BDL	BDL
10/08/2020	10:25	1.10	4.681	BDL	BDL	BDL
13/08/2020	10:35	1.11	3.246	BDL	BDL	BDL
17/08/2020	10:25	1.14	4.228	BDL	BDL	BDL
21/08/2020	10:20	1.12	4.173	BDL	BDL	BDL
24/08/2020	10:30	1.12	4.624	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			NL/SOP/AAQ- 12	NL/SOP/AAQ- 12	IS:5182 (P-12)	IS:5182 (P-22)/ NL/SOP/AAQ-11

Remark:

*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 6.0] BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed within Three days after Receipt.



Certificate No.
T-6366



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Test Report

Issued to: HPCL-Mittal Energy Limited

Village Phulokhari, Taluka Talwandi Sabo
Distt.Bhatinda, Punjab, India

URL No.: TC63662000000526, TC63662000000553, TC63662000000575,
TC63662000000605, TC63662000000642, TC63662000000677
TC63662000000729

Test Report Date: 28/08/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: Ambient Air Quality Monitoring
: Ambient Air Quality Monitoring Station (AAQMS)-5
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

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
03/08/2020	10:25	1.14	4.226	BDL	BDL	BDL
07/08/2020	10:42	1.11	4.168	BDL	BDL	BDL
10/08/2020	10:44	1.10	4.266	BDL	BDL	BDL
13/08/2020	10:35	1.02	4.461	BDL	BDL	BDL
17/08/2020	10:25	1.12	3.244	BDL	BDL	BDL
21/08/2020	10:38	1.14	2.896	BDL	BDL	BDL
24/08/2020	10:24	1.11	3.884	BDL	BDL	BDL
National Ambient Air Quality Monitoring Standards (2009)			20	06	01	01
Test Method			NL/SOP/AAQ- 12	NL/SOP/AA Q-12	IS:5182 (P-12)	IS:5182 (P-22)/ NL/SOP/AAQ-11

Remark:

*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ- 60]
BAP-BDL [LOQ- 1.0], Lead-BDL [LOQ- 1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample
Analysed within Three days after Receipt.



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Test Report

Issued to: **HPCL-Mittal Energy Limited**

Village Phullokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000527, TC636620000000554, TC636620000000576,
TC636620000000606, TC636620000000643, TC636620000000678
TC636620000000730

Test Report Date: 28/08/2020

Sample Particulars

Nature of the Sample
Sampling Location
Purpose of Monitoring
Method of Sampling
Monitoring Conducted By
Sampling Duration (Hrs.)

: **Ambient Air Quality Monitoring**
: Ambient Air Quality Monitoring Station (AAQMS)-6
: To Check the Pollution Load
: IS 5182 (Part 14)
: Mr. Animesh Jha
: 24 Hrs.

Analysis Report

Date of Sampling	Time	AFR of RDS (m3/min)	AFR of FPS (m3/hr)	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
03/08/2020	10:40	1.11	0.98	2.647	BDL	BDL	BDL	62.24	106.4	24.4	38.6	0.514
07/08/2020	10:45	1.14	1.14	3.331	BDL	BDL	BDL	68.44	108.2	28.3	46.8	0.859
10/08/2020	10:40	1.12	0.96	4.268	BDL	BDL	BDL	60.64	110.8	25.6	32.2	0.347
13/08/2020	10:55	1.16	0.98	4.421	BDL	BDL	BDL	64.22	108.6	28.6	44.8	0.541
17/08/2020	10:54	1.12	1.20	3.846	BDL	BDL	BDL	62.62	114.2	22.2	32.4	0.662
21/08/2020	11:26	1.10	1.1	3.665	BDL	BDL	BDL	61.68	112.8	27.4	38.9	0.746
24/08/2020	10:44	1.14	1.00	3.484	BDL	BDL	BDL	65.46	116.6	26.4	34.2	0.648
National Ambient Air Quality Monitoring Standards (2009)				20	06	01	01	60	100	80	80	04
Test Method				NL/SOP /AAQ-12	NL/SOP /AAQ-12	IS:518 2 (P-12)	IS:518 2 (P-22)/ NL/SO P/AA Q-11	40CFR Appen dix L Part 53 CPCB Guidel ines	IS:518 2 (P-23)	IS:518 2 (P-2)	IS:518 2 (P-6)	IS:5182 (P-10)

Remark:

*NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (38)], [Part-II-sec-3(i)] 16.11.2009, BDL-Below Detection Limit, Arsenic-BDL [LOQ-60] BaP-BDL [LOQ-1.0] Lead-BDL [LOQ-1.0], N.A.-Not Applicable, AFR-Average Flow Rate, AAQMS-Ambient Air Quality Monitoring Station, N.A.-Not Applicable, Sample Analysed Within Three days after Receipt.



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Test Report

Issued to: **HPCL-Mittal Energy Limited**

Village Phullokhiari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000748- TC636620000000757

Test Report Date: 28/08/2020

Sample Particulars:

Nature of the Sample

Date of Monitoring

Purpose of Monitoring

Place of Monitoring

Monitoring Conducted By

Protocol Used

: **Ambient Noise**

: 24/08/2020

: To Check the Pollution Load

: HMEL Refinery

: Mr. Animesh Jha

: NL/SOP/ENV-05 Based on IS: 9989

Analysis Report

Sr. No.	Location	Test Result dB(A) Day Time	Test Result dB(A) Night Time
Permissible Limit in *dB(A) Leq For Industrial Area		75 dB(A)	70 dB(A)
1	Near Refinery Main Gate	73.9	66.2
2	Near Fire Water Reservoir	68.3	62.5
3	Near Road Crude Oil Tanks	71.2	66.4
4	Near ETP and Flare	72.6	63.7
5	Near Storm Water Pond East Side	70.6	60.3
6	Near Sulphur Yard South East Side	68.6	61.5
7	Near Rail Loading Dispatch South East Side	73.8	58.7
8	Near CPP North East Side	72.8	65.8
9	Near Poly Propylene Dispatch Area	70.5	64.2
10	Near Ecological Pond Area	68.6	62.6

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

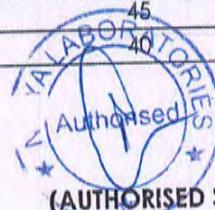
CPCB = Central Pollution Control Board

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

Area Code	Category of Area	Limits dB (A) Leq	
		Day Time (6AM – 10PM)	Night Time (10PM – 06AM)
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	45
D	Silence Zone	50	40



Certificate No.



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000646

Test Report Date: 27/08/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 17/08/2020
Time of Sampling	: 11:30
Test Started on	: 18/08/2020
Test Completed On	: 25/08/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: SRU 524
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 100
Diameter of the stack(m)	: 2.0
Sampling duration (min)	: 35
Observations:	
Flue Gas Temperature °C	: 194
Ambient Air Temperature °C	: 37
Flue Gas Velocity (m/s)	: 12.92

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Limit for 100 % Fuel Gas (in mg/Nm ³)	Test Method
1	Oxide of Nitrogen (as NO _x)	45.28	250	IS-11255(P-7)
2	Carbon Monoxide (as CO)	18.27	100	IS-13270
3	Oxides of Sulphur (as SO _x)	152.16	N.A.	IS-11255 (P-2)
4	Hydrogen Sulphide (as H ₂ S)	BDL(LOQ-0.1)	10	IS:11255 (P-4)

Remark: BDL-Below Not Detected



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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000647

Test Report Date: 27/08/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 17/08/2020
Time of Sampling	: 14:30
Test Started on	: 18/08/2020
Test Completed On	: 25/08/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: SRU 525
Sampling method	: IS: 11255 (P-7)
Normal operating schedule	: As per requirement
Type of stack /duct	: Mild Steel
Stack height from Ground Level (m)	: 100
Diameter of the stack(m)	: 2.0
Sampling duration (min)	: 35

Observations:

Flue Gas Temperature °C	: 208
Ambient Air Temperature °C	: 37
Flue Gas Velocity (m/s)	: 13.32

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Limits for 100 % Fuel Gas (in mg/Nm ³)	Test Method
1	Oxide of Nitrogen (as NO _x)	45.18	250	IS-11255(P-7)
2	Carbon Monoxide (as CO)	33.10	100	IS-13270
3	Oxides of Sulphur (as SO _x)	180.21	NA	IS-11255 (P-2)
4	Hydrogen Sulphide (as H ₂ S)	BDL(LOQ-0.1)	10	IS:11255 (P-4)

Remark: BDL-Below Not Detected



(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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Test Report

Issued to: HPCL-Mittal Energy Limited

Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000648

Test Report Date: 27/08/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 18/08/2020
Time of Sampling	: 10:20
Test Started on	: 19/08/2020
Test Completed On	: 26/08/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: FCCU-Regenerator
Sampling method	: IS: 11255 (P-7)
Normal Operating Schedule	: As per requirement
Type of Stack /Duct	: Mild Steel
Stack height from Ground Level (m)	: 42
Diameter of the Stack(m)	: 3.3
Sampling Duration (min)	: 30

Observations:

Flue Gas Temperature °C	: 225
Ambient Air Temperature °C	: 38
Flue Gas Velocity (m/s)	: 15.00

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Limits for 100 % Coke as Fuel (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	27.39	50	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	48.35	500	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	15.23	350	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	58.28	300	IS-13270

Remark: BDL-Below Not Detected



(RAVINDER MITTAL)

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Test Report

Issued to: HPCL-Mittal Energy Limited

Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : 202008180110

Test Report Date: 27/08/2020

Sample Particulars:

Nature of the sample	: Stack Gas Emission
Date of Sampling	: 18/08/2020
Time of Sampling	: 10:20
Test Started on	: 19/08/2020
Test Completed On	: 26/08/2020
Purpose of monitoring	: To Check the Pollution Load
Sampling Location	: FCCU-Regenerator
Sampling method	: IS: 11255 (P-7)
Normal Operating Schedule	: As per requirement
Type of Stack /Duct	: Mild-Steel
Stack height from Ground Level (m)	: 42
Diameter of the Stack (m)	: 3.3
Sampling Duration (min)	: 40
Observations:	
Flue Gas Temperature °C	: 225
Ambient Air Temperature °C	: 38
Flue Gas Velocity (m/s)	: 15.00

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Limits for 100 % Coke as Fuel (in mg/Nm ³)	Test Method
1	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	2	USEPA Method 29 By AAS

Remark: BDL-Below Not Detected


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Test Report

Issued to: HPCL-Mittal Energy Limited

Village Phullokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000649

Test Report Date: 27/08/2020

Sample Particulars:

Nature of the sample

Date of Sampling

Time of Sampling

Test Started on

Test Completed On

Purpose of Monitoring

Sampling Location

Sampling method

Normal operating schedule

Type of stack /duct

Stack height from Ground Level (m)

Diameter of the Stack(m)

Sampling Duration (min)

Observations:

Flue Gas Temperature °C

Ambient Air Temperature °C

Flue Gas Velocity (m/s)

Stack Gas Emission

: 18/08/2020

: 12:20

: 19/08/2020

: 26/08/2020

: To Check the Pollution Load

: FCCU Heater

: IS: 11255 (P-7)

: As per requirement

: Mild Steel

: 80

: 1.75

: 40

Analysis Report

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Particulate Matters (as PM)	5.9	41	IS-11255 (P-1)
2	Oxides of Sulphur (as SO _x)	74.28	678	IS-11255 (P-2)
3	Oxides of Nitrogen (as NO _x)	32.10	328	IS-11255 (P-7)
4	Carbon Monoxide (as CO)	13.21	139	IS-13270

Remark: BDL-Below Not Detected



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Test Report

Issued to: HPCL-Mittal Energy Limited

Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No. : 202008180110

Test Report Date: 27/08/2020

Sample Particulars:

Nature of the sample

Date of Sampling

Time of Sampling

Test Started on

Test Completed On

Purpose of Monitoring

Sampling Location

Sampling method

Normal operating schedule

Type of stack /duct

Stack height from Ground Level (m)

Diameter of the Stack(m)

Sampling Duration (min)

Observations:

Flue Gas Temperature °C

Ambient Air Temperature °C

Flue Gas Velocity (m/s)

: Stack Gas Emission

: 18/08/2020

: 12:20

: 19/08/2020

: 26/08/2020

: To Check the Pollution Load

: FCCU Heater

: IS: 11255 (P-7)

: As per requirement

: Mild Steel

: 80

: 1.75

: 40

: 201

: 38

: 9.27

Sr. No.	Parameters	Results (in mg/Nm ³)	Mixed Fuel Limits (in mg/Nm ³)	Test Method
1	Nickel & Vanadium (as Ni & V)*	BDL(LOQ-0.5)	5	USEPA Method 29 By AAS

Remark: BDL-Below Not Detected

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000579 - TC636620000000589

Test Report Date: 21/08/2020

Sample Particulars:

Nature of the Sample & No. of Samples

Sample Quantity & Packaging

Test Started on

Test Completed

Method of Sampling

Date of Sampling

Sampling Conducted By

: Ground Water & Eleven Samples

: 2.0 Liter, Pet Bottle

: 12/08/2020

: 19/08/2020

: SOP/B/D-3

: 11/08/2020

: Mr. Manmohan Singh

Analysis Report

Parameter		pH	Color	Temperature	Turbidity	TDS	Alkalinity as (CaCO ₃)	Total Hardness as (CaCO ₃)	Chlori des	Fluorides
Location										
GW1		7.62	<5	25.2	<1	658.6	166.2	296.4	198.9	0.79
GW2		7.54	<5	26.8	<1	588.2	204.6	246.2	252.5	0.81
GW3		7.85	<5	25.4	<1	604.8	302.4	280.6	194.8	0.73
GW4		7.66	<5	25.6	<1	688.4	258.8	254.3	296.9	0.84
GW5		7.28	<5	26.5	<1	540.3	226.3	272.8	154.6	0.69
GW6		7.34	<5	27.4	<1	587.4	262.7	332.6	148.2	0.75
GW7		7.57	<5	26.2	<1	474.6	218.6	228.9	184.6	0.69
GW8		7.66	<5	27.6	<1	446.2	236.4	244.4	180.7	0.71
GW9		7.28	<5	27.1	<1	538.7	214.8	248.2	162.9	0.69
GW10		7.41	<5	27.9	<1	542.3	208.4	318.6	186.6	0.77
GW11		7.69	<5	27.8	<1	536.4	292.2	320.4	158.9	0.69
IS 10500	Desi rable	6.5-8.5	5	-	1	500	200	200	250	1.0
	Permi ssible	6.5-8.5	15	-	5	2000	600	600	1000	1.5
Protocol		IS:3025 (P-11)	IS:3025 (P-4)	IS:3025 (P-9)	IS:3025 (P-10)	IS:3025 (P-16)	IS:3025 (P-23)	IS: 3025 (P-21)	IS:3025 (P-21)	IS:3025 (P-60)

Remark:

GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond - North East Side, GW3: Near Ecological Pond West Side, GW4: Near Ecological Pond South East Side
GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water Block Area, GW7: Near RO/DM Plant East Side
Area GW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side, GW10: Secured Landfill Area South Side, GW11: Near ETP South Side



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(RAVINDER MITTAL)

Certificate No.
T-6366

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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000579 - TC636620000000589

Test Report Date: 21/08/2020

Analysis Report

Parameter	Calcium as Ca	Magnesium as Mg	Sulphate	Nitrates	Iron (as Fe)	Mercury (as Hg)	Zinc (as Zn)	Cadmium (as Cd)	Chromium (as Cr)	Arsenic (as As)
GW1	52.41	30.33	130.66	14.8	0.42	BDL	BDL	BDL	BDL	BDL
GW2	40.82	22.42	125.24	20.4	0.41	BDL	BDL	BDL	BDL	BDL
GW3	54.44	28.61	128.46	14.2	0.46	BDL	BDL	BDL	BDL	BDL
GW4	52.66	30.24	140.64	20.3	0.32	BDL	BDL	BDL	BDL	BDL
GW5	44.24	26.42	122.24	20.5	0.41	BDL	BDL	BDL	BDL	BDL
GW6	54.61	34.22	140.22	16.2	0.32	BDL	BDL	BDL	BDL	BDL
GW7	42.22	20.22	136.61	15.3	0.31	BDL	BDL	BDL	BDL	BDL
GW8	42.23	31.62	128.42	21.2	0.39	BDL	BDL	BDL	BDL	BDL
GW9	54.58	32.22	126.46	18.6	0.22	BDL	BDL	BDL	BDL	BDL
GW10	56.62	36.62	138.44	20.7	0.31	BDL	BDL	BDL	BDL	BDL
GW11	48.66	28.32	146.62	17.5	0.29	BDL	BDL	BDL	BDL	BDL
IS 10500	Desirable	75	30	200	45	1	0.001	5	0.003	0.05
	Permissible	200	100	400	No Relaxation	No Relaxation	No Relaxation	15	No Relaxation	No Relaxation
Protocol	IS:3025 (P-40)	IS:3025 (P-46)	APHA 23 rd Ed.	IS:3025 (P-34)	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.

Remark:

GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond - North East Side, GW3: Near Ecological Pond West Side, GW4: Near Ecological Pond South East Side
GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water Block Area, GW7: Near RO/DM Plant East Side An
GW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side, GW10: Secured Landfill Area South Side, GW11: Near ETP South Side



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Test Report

Issued to: HPCL-Mittal Energy Limited

Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000579 - TC636620000000589

Test Report Date: 21/08/2020

Analysis Report

Parameter		Lead (as Pb)	Boron (as B)	Selenium (as Se*)	RFC	Polycyclic Aromatic Hydrocarbons (PAH*)	Anionic Detergent*	Aluminum (as Al)	Total Coliform
GW1		BDL	0.24	BDL	BDL	BDL	BDL	BDL	Absent
GW2		BDL	0.31	BDL	BDL	BDL	BDL	BDL	Absent
GW3		BDL	0.34	BDL	BDL	BDL	BDL	BDL	Absent
GW4		BDL	0.36	BDL	BDL	BDL	BDL	BDL	Absent
GW5		BDL	0.41	BDL	BDL	BDL	BDL	BDL	Absent
GW6		BDL	0.28	BDL	BDL	BDL	BDL	BDL	Absent
GW7		BDL	0.22	BDL	BDL	BDL	BDL	BDL	Absent
GW8		BDL	0.46	BDL	BDL	BDL	BDL	BDL	Absent
GW9		BDL	0.34	BDL	BDL	BDL	BDL	BDL	Absent
GW10		BDL	0.32	BDL	BDL	BDL	BDL	BDL	Absent
GW11		BDL	0.37	BDL	BDL	BDL	BDL	BDL	Absent
IS 1050	Desirable	0.01	0.5	0.01	0.2	0.0001	0.2	0.03	Absent
	Permissible	No Relaxation	1.0	No	1.0	No	1.0	0.2	Absent
Protocol		APHA 23 rd Ed.	IS:3025 (P-57)	APHA 23 rd Ed.	IS:3025 (P-26)	APHA 23 rd Ed.	IS:13428 (P-K)	IS:3025 (P-55)	IS: 1622

Remark:

Remark:

GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond - North East Side, GW3: Near Ecological Pond West Side, GW4: Near Ecological Pond South East Side
GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water Block Area, GW7: Near RO/DM Plant East Side Area
GW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side, GW10: Secured Landfill Area South Side, GW11: Near ETP South Side



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(RAVINDER MITTAL)

Certificate No. T-6366

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CORPORATE OFFICE & CENTRAL LABORATORIES :

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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No.: 202008110110-120

Test Report Date: 21/08/2020

Sample Particulars:

Nature of the Sample & No. of Samples	: Ground Water & Eleven Samples
Sample Quantity & Packaging	: 2.0 Liter, Pet Bottle
Test Started on	: 12/08/2020
Test Completed	: 19/08/2020
Method of Sampling	: SOP/B/D-3
Date of Sampling	: 11/08/2020
Sampling Conducted By	: Mr. Manmohan Singh

Analysis Report

Parameter	Odour	Taste	Phenolic Compounds	Cyanide (as CN*)	Mineral Oil*
GW1	Agreeable	Agreeable	BDL	BDL	BDL
GW2	Agreeable	Agreeable	BDL	BDL	BDL
GW3	Agreeable	Agreeable	BDL	BDL	BDL
GW4	Agreeable	Agreeable	BDL	BDL	BDL
GW5	Agreeable	Agreeable	BDL	BDL	BDL
GW6	Agreeable	Agreeable	BDL	BDL	BDL
GW7	Agreeable	Agreeable	BDL	BDL	BDL
GW8	Agreeable	Agreeable	BDL	BDL	BDL
GW9	Agreeable	Agreeable	BDL	BDL	BDL
GW10	Agreeable	Agreeable	BDL	BDL	BDL
GW11	Agreeable	Agreeable	BDL	BDL	BDL
IS 10500	Desirable	Agreeable	Agreeable	0.001	0.05
	Permissible	Agreeable	Agreeable	0.002	No
Protocol	IS:3025 (P-5)	IS:3025 (P-7)	IS:3025 (P-43)	IS:3025 (P-43)	APHA 23 rd Ed.

Remark:

GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond - North East Side, GW3: Near Ecological Pond West Side, GW4: Near Ecological Pond South East Side, GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water Block Area, GW7: Near RO/DM Plant East Side Area, GW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side, GW10: Secured Landfill Area South Side, GW11: Near ETP South Side

(AUTHORISED SIGNATORY)
(RAVINDER MITTAL)

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Test Report

Issued to: HPCL-Mittal Energy Limited

Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000733- TC636620000000747

Test Report Date: 02/08/2020

Sample Particulars:

Nature of the Sample
Date of Monitoring
Purpose of Monitoring
Place of Monitoring
Monitoring Conducted By
Protocol Used

: **Volatile Organic Carbon**

: 31/07/2020

: To Check the Pollution Load

: HMEL Refinery

: Mr. Animesh Jha

: SOP No. NL /SOP /AAQ/ VOC/ 01 on dated 01/08/2019

Portable PID Based Gas Detector for VOC's - Honeywell RAE

Analysis Report

Sr. No.	Locations	Test Results (PPM)
1	Near ETP	0.3
2	Near Rail Gantry	BDL
3	Near Road Gantry	BDL
4	Battery limits of CDU/VDU	BDL
5	Battery limits of FCCU	BDL
6	Battery limits of DHDT	BDL
7	Battery limits of VGO-HDT	BDL
8	Battery limits of MS Block	BDL
9	Battery limits of DCU	BDL
10	Product Intermediate Storage Tanks Down Wind Direction	BDL
11	Product Intermediate Storage Tank UP Wind Direction	BDL
12	Near HPCL Product Dispatch Pumps	0.4
13	Battery limits of PPU	BDL
14	Near Crude Oil storage Tanks	0.2
15	Battery Limits of SRU Block	BDL

Remark:

BDL-Below Detection Limit (LOQ-0.1)



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Test Report

Issued to: **HPCL-Mittal Energy Limited**

Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000590

Test Report Date: 21/08/2020

Sample Particulars:

Sample Quantity & Packaging	: 2.0 Liter, Pet Bottle
Test Started on	: 12/08/2020
Test Completed	: 19/08/2020
Method of Sampling	: SOP/B/D-3
Date of Sampling	: 11/08/2020
Sampling Conducted By	: Mr. Manmohan Singh
Place of Sampling	: W-1: ETP Outlet, Inside GGSR

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
1	pH	...	7.84	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	18.0	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	110	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	12.4	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	BDL	5.0	IS:3025 (P-39)
6	Phenolic Compounds (C ₆ H ₅ OH)	mg/L	0.24	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.32	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH ₃)	mg/L	16.8	40	IS:3025 (P-34)
9	Phosphate	mg/L	1.8	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 -23 rd Ed.
12	Lead (Pb)	mg/L	BDL	0.1	APHA-23 rd Ed.
13	Mercury (Hg)	mg/L	BDL	0.01	APHA-23 rd Ed.
14	Zinc (Zn)	mg/L	BDL	5.0	APHA-23 rd Ed.
15	Nickel (Ni)	mg/L	BDL	1.0	APHA-23 rd Ed.



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No.: 202008110121

Test Report Date: 21/08/2020

Sample Particulars:

Sample Quantity & Packaging

: 2.0 Liter, Pet Bottle

Test Started on

: 12/08/2020

Test Completed

: 19/08/2020

Method of Sampling

: SOP/B/D-3

Date of Sampling

: 11/08/2020

Sampling Conducted By

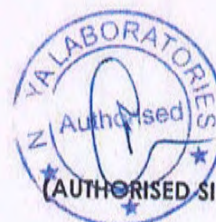
: Mr. Manmohan Singh

Place of Sampling

: W-1: ETP Outlet, Inside GGSR

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
1	Ammonia (N)	mg/L	10.24	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	BDL	0.20	APHA-23 rd Ed.
3	Total Chromium	mg/L	BDL	2.0	IS:3025 (P-52)
4	Vanadium (V)	mg/L	BDL	0.2	APHA-23 rd Ed.
5	Benzene	mg/L	BDL	0.1	APHA-23 rd Ed.
6	Benzo(a)-Pyrene	mg/L	BDL	0.2	APHA-23 rd Ed.



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Test Report

Issued to: HPCL-Mittal Energy Limited

Village Phullokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000591

Test Report Date: 21/08/2020

Sample Particulars:

Nature of the Sample

: ETP Outlet

Sample Quantity & Packaging

: 5.0 Liter, Pet Bottle

Test Started on

: 12/08/2020

Test Completed

: 19/08/2020

Method of Sampling

: SOP/B/D-3

Date of Sampling

: 11/08/2020

Sampling Conducted By

: Mr. Manmohan Singh

Place of Sampling

: W-5: ETP Outlet, Inside GGSR

Sr. No.	Parameters	Unit	Test Result	Protocol
			W5	
1	Bioassay Toxic Test	%	97 % survival of fish after 96 hours in 100 % effluent	IS:6582 (P-1)



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Test Report

Issued to: **HPCL-Mittal Energy Limited**
Village Phullokhar, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

URL No.: TC636620000000592

Test Report Date: 21/08/2020

Sample Particulars:

Nature of the Sample	: STP Outlet Refinery
Sample Quantity & Packaging	: 2.0 Liter, Pet Bottle
Test Started on	: 12/08/2020
Test Completed	: 19/08/2020
Method of Sampling	: SOP/B/D-3
Date of Sampling	: 11/08/2020
Sampling Conducted By	: Mr. Manmohan Singh
Place of Sampling	: W-2: STP Outlet, Inside GGSR

Analysis Report

Sr. No.	Parameters	Unit	Test Results	Standards	Protocol
			W2		
1	pH	-	7.62	6.5 to 9.0	IS:3025 (P-11)
2	Temperature	°C	26.4	-	IS:3025 (P-9)
3	TSS	mg/l	8.2	≤10mg/l	IS:3025 (P-17)
4	COD	mg/l	40	≤50mg/l	IS:3025 (P-58)
5	BOD	mg/l	6	≤10mg/l	IS:3025 (P-44)
6	O & G	mg/l	BDL	≤5mg/l	IS:3025 (P-39)
7	Ammonical Nitrogen as N*	mg/l	2.4	≤5mg/l	IS:3025 (P-34)
8	PO4-P*	mg/l	1.2	≤2mg/l	IS:3025 (P-31)



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Test Report

Issued to: HPCL-Mittal Energy Limited
Village Phulokhari, Taluka Talwandi Sabo
Distt. Bhatinda, Punjab, India

Report No.: 202008110122

Test Report Date: 21/08/2020

Sample Particulars:

Nature of the Sample	: STP Outlet Refinery
Sample Quantity & Packaging	: 2.0 Liter, Pet Bottle
Test Started on	: 12/08/2020
Test Completed	: 19/08/2020
Method of Sampling	: SOP/B/D-3
Date of Sampling	: 11/08/2020
Sampling Conducted By	: Mr. Manmohan Singh
Place of Sampling	: W-2: STP Outlet, Inside GGSR

Analysis Report

Sr. No.	Parameters	Unit	Test Results	Standards	Protocol
			W2		
1	N-total*	mg/l	6.98	≤10mg/l	IS:3025 (P-34)



(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ambient Air Quality	AAQ-121020-16	12/10/2020

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 : 07/09/2020 to 28/09/2020
Sample Description : Ambient Air Quality Monitoring Station (AAQMS-1)
Sampling Plan & Procedure : SOP-AAQ/08
Analysis Duration : 12/09/2020 TO 05/10/2020
Ambient Average Temperature (°C) : 35
Average Flow Rate of SPM (m³/min.) : 1.12
Average Flow Rate of Gases (lpm) : 1.0
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
07/09/2020	10:45	1.11	3.001	BDL	BDL	BDL
11/09/2020	11:00	1.12	3.156	BDL	BDL	BDL
14/09/2020	11:20	1.10	3.456	BDL	BDL	BDL
17/09/2020	11:55	1.12	2.010	BDL	BDL	BDL
21/09/2020	11:25	1.12	4.025	BDL	BDL	BDL
24/09/2020	10:55	1.11	2.147	BDL	BDL	BDL
26/09/2020	11:45	1.12	2.653	BDL	BDL	BDL
28/09/2020	10:10	1.11	3.658	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:

- The results given above are related to the tested sample, as received & mentioned parameters. The customer asked for the above tests only.
- Responsibility of the Laboratory is limited to the invoiced amount only.
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- This test report will not be used for any publicity/legal purpose.
- 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-121020-17	12/10/2020

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 : 07/09/2020 to 28/09/2020
Sample Description : Ambient Air Quality Monitoring Station (AAQMS-2)
Sampling Plan & Procedure : SOP-AAQ/08
Analysis Duration : 12/09/2020 TO 05/10/2020
Ambient Average Temperature (°C) : 35
Average Flow Rate of SPM (m³/min.) : 1.12
Average Flow Rate of Gases (lpm) : 1.0
Weather Condition : Normal

Date of Sampling	Time	AFR of RDS (m ³ /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
07/09/2020	11:20	1.12	2.358	BDL	BDL	BDL
11/09/2020	11:35	1.12	3.144	BDL	BDL	BDL
14/09/2020	12:25	1.11	2.875	BDL	BDL	BDL
17/09/2020	01:20	1.13	2.104	BDL	BDL	BDL
21/09/2020	01:55	1.12	3.265	BDL	BDL	BDL
24/09/2020	02:25	1.11	3.014	BDL	BDL	BDL
26/09/2020	03:20	1.12	2.785	BDL	BDL	BDL
28/09/2020	03:50	1.12	2.889	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-121020-18	12/10/2020

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 : 07/09/2020 to 28/09/2020
Sample Description : Ambient Air Quality Monitoring Station (AAQMS-3)
Sampling Plan & Procedure : SOP-AAQ/08
Analysis Duration : 12/09/2020 TO 05/10/2020
Ambient Average Temperature (°C) : 35
Average Flow Rate of SPM (m³/min.) : 1.11
Average Flow Rate of Gases (lpm) : 1.0
Weather Condition : Normal

Date of Sampling	Time	AFR of RDS (m ³ /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
07/09/2020	11:40	1.11	2.365	BDL	BDL	BDL
11/09/2020	11:55	1.12	2.874	BDL	BDL	BDL
14/09/2020	12:45	1.11	3.112	BDL	BDL	BDL
17/09/2020	01:50	1.13	2.457	BDL	BDL	BDL
21/09/2020	02:15	1.13	2.639	BDL	BDL	BDL
24/09/2020	02:40	1.11	3.124	BDL	BDL	BDL
26/09/2020	03:50	1.12	3.365	BDL	BDL	BDL
28/09/2020	04:05	1.11	2.078	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-121020-19	12/10/2020

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 : 07/09/2020 to 28/09/2020
Sample Description : Ambient Air Quality Monitoring Station (AAQMS-4)
Sampling Plan & Procedure : SOP-AAQ/08
Analysis Duration : 12/09/2020 TO 05/10/2020
Ambient Average Temperature (°C) : 35
Average Flow Rate of SPM (m³/min.) : 1.12
Average Flow Rate of Gases (lpm) : 1.0
Weather Condition : Normal

Date of Sampling	Time	AFR of RDS (m ³ /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
07/09/2020	12:05	1.11	2.348	BDL	BDL	BDL
11/09/2020	12:15	1.12	2.048	BDL	BDL	BDL
14/09/2020	01:10	1.00	2.986	BDL	BDL	BDL
17/09/2020	02:15	1.12	3.012	BDL	BDL	BDL
21/09/2020	02:40	1.11	3.125	BDL	BDL	BDL
24/09/2020	03:00	1.12	2.876	BDL	BDL	BDL
26/09/2020	03:15	1.13	3.254	BDL	BDL	BDL
28/09/2020	04:30	1.11	2.977	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-121020-20	12/10/2020

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 : 07/09/2020 to 28/09/2020
Sample Description : Ambient Air Quality Monitoring Station (AAQMS-5)
Sampling Plan & Procedure : SOP-AAQ/08
Analysis Duration : 12/09/2020 TO 05/10/2020
Ambient Average Temperature (°C) : 35
Average Flow Rate of SPM (m³/min.) : 1.11
Average Flow Rate of Gases (lpm) : 1.0
Weather Condition : Normal

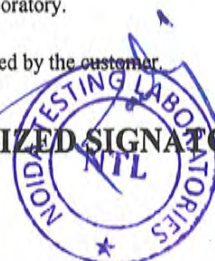
Date of Sampling	Time	AFR of RDS (m3/min)	Parameter			
			Nickel (as Ni), ng/m ³	Arsenic (as As), ng/m ³	Benzo(a)pyrene (as BAP*), ng/m ³	Lead (as Pb), µg/ m ³
07/09/2020	12:30	1.12	2.658	BDL	BDL	BDL
11/09/2020	12:40	1.11	3.124	BDL	BDL	BDL
14/09/2020	01:55	1.13	2.487	BDL	BDL	BDL
17/09/2020	02:35	1.12	3.102	BDL	BDL	BDL
21/09/2020	02:55	1.11	3.481	BDL	BDL	BDL
24/09/2020	03:25	1.11	2.154	BDL	BDL	BDL
26/09/2020	03:55	1.12	3.254	BDL	BDL	BDL
28/09/2020	04:50	1.13	2.987	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-121020-21	12/10/2020

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 : 07/09/2020 to 28/09/2020
Sample Description : Ambient Air Quality Monitoring Station (AAQMS-6)
Sampling Plan & Procedure : SOP-AAQ/08
Analysis Duration : 12/09/2020 TO 05/10/2020
Ambient Average Temperature (°C) : 35
Average Flow Rate of SPM (m³/min.) : 1.12
Average Flow Rate of Gases (lpm) : 1.0
Weather Condition : Normal

Date of Sampling	Time	AFR of RDS (m3/min)	AFR of FPS (m3/hr)	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
07/09/2020	01:00	1.10	0.98	1.658	BDL	BDL	BDL	63.21	112.3	22.3	40.3	0.555
11/09/2020	02:10	1.11	1.10	2.112	BDL	BDL	BDL	76.25	121.7	20.7	39.7	0.762
14/09/2020	02:45	1.12	1.10	3.125	BDL	BDL	BDL	61.47	94.6	30.6	40.1	0.352
17/09/2020	03:10	1.12	0.99	3.245	BDL	BDL	BDL	70.65	109.7	27.1	42.3	0.654
21/09/2020	03:45	1.12	1.12	3.224	BDL	BDL	BDL	62.78	117.8	22.3	39.8	0.465
24/09/2020	04:15	1.13	1.10	2.064	BDL	BDL	BDL	59.87	98.6	19.9	30.1	0.963
26/09/2020	04:55	1.11	1.10	2.326	BDL	BDL	BDL	60.33	107.4	27.5	24.7	0.645
28/09/2020	05:30	1.10	0.97	3.326	BDL	BDL	BDL	68.97	100.5	22.6	28.5	0.553
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)	Gravi metric	IS:5182 (P-23)	IS:5182 (P-2)	IS:5182 (P-6)	IS:5182 (P-10)

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TEST CERTIFICATE

Test Report of Ambient Noise	Report Code AN-121020-14	Date of Issue 12/10/2020
Issued to	HPCL-Mittal Energy Limited , Village-Phullokhari , Taluka -Talwandi Saboo, Distt. Bhatinda (Punjab) India	
Date of Sampling & Time	15/09/2020 to 16/09/2020	
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	72.3	65.7
2	Near Fire Water Reservoir	63.0	59.7
3	Near Road Crude Oil Tanks	72.4	60.8
4	Near ETP and Flare	70.1	60.8
5	Near Storm Water Pond East Side	65.9	57.8
6	Near Sulphur Yard South East Side	66.7	58.7
7	Near Rail Loading Dispatch South East Side	70.3	53.3
8	Near CPP North East Side	70.9	63.7
9	Near Poly Propylene Dispatch Area	70.1	64.2
10	Near Ecological Pond Area	66.6	61.2
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
Stack Emission	ST-121020-11	12/10/2020

SAMPLING & ANALYSIS DATA

Description	- Stack Emission Monitoring conducted by our team.
Date of Sampling	- 29/09/2020
Name & Address of the Industry	- M/s HPCL-Mittal Energy Limited, Village-Phullokhar, 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)	- 30
Parameters Monitored	- NO _x , SO ₂ , CO, H ₂ S
Purpose of Monitoring	- Assessment of Pollution load
General Sensory Observations	- Normal
Fugitive Emission (if any)	- Nil
Stack Temperature (°C)	- 170
Ambient Temperature (°C)	- 35
Average Stack Velocity (m/s)	- 12.85
Quantity of Emission (Nm ³ /hr)	- 2195.0

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm ³)	Limits for 100 % Fuel Gas(mg/Nm ³)
1.	Oxide of Nitrogen (as NO _x)	IS-11255(P-7)	91.2	250
2.	Carbon Monoxide (as CO)	IS-13270	60.3	100
3.	Oxides of Sulphur (as SO _x)	IS-11255 (P-2)	145.6	N.A.
4.	Hydrogen Sulphide (as H ₂ S)	IS:11255 (P-4)	2.1	10

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Stack Emission	ST-121020-12	12/10/2020

SAMPLING & ANALYSIS DATA

Description	-	Stack Emission Monitoring conducted by our team.
Date of Sampling	-	29/09/2020
Name & Address of the Industry	-	M/s HPCL-Mittal Energy Limited, Village-Phullokhar, Taluka - Talwandi Saboo, Distt. Bhatinda (Punjab) India
Emission Source Monitored	-	SRU 524
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)	-	30
Parameters Monitored	-	NO _x , SO ₂ , CO, H ₂ S
Purpose of Monitoring	-	Assessment of Pollution load
General Sensory Observations	-	Normal
Fugitive Emission (if any)	-	Nil
Stack Temperature (°C)	-	159
Ambient Temperature (°C)	-	35
Average Stack Velocity (m/s)	-	11.35
Quantity of Emission (Nm ³ /hr)	-	1993.2

TEST RESULT

S.N.	Parameter	Test Method	Results (mg/Nm ³)	Limits for 100 % Fuel Gas(mg/Nm ³)
1.	Oxide of Nitrogen (as NO _x)	IS-11255(P-7)	41.56	250
2.	Carbon Monoxide (as CO)	IS-13270	33.74	100
3.	Oxides of Sulphur (as SO _x)	IS-11255 (P-2)	159.7	N.A.
4.	Hydrogen Sulphide (as H ₂ S)	IS:11255 (P-4)	3.1	10

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ground Water	GW-121020-1	12/10/2020

ISSUED TO: HPCL- Mittal Energy Limited, Village – Phullokhar, Taluka – Talwandi Saboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On : 23/09/2020
 Sample Collected By : Laboratory
 Sample Description : Ground Water
 Sample Quantity/Packing detail : 2.0 lt/Plastic Cane
 Weather Conditions : Normal
 Analysis Duration : 25/09/2020 to 29/09/2020

Parameter	pH	Odour	Color	Taste	Temp.	Turbidity	TDS	Alkalinity as (CaCO ₃)	Total Hardness as (CaCO ₃)	Chlorides	Fluorides
Location											
GW1	7.32	Agreeable	<5	Agreeable	26.3	<1	630	174	265	185.1	0.80
GW2	7.34	Agreeable	<5	Agreeable	25.5	<1	602	201	255	214.3	0.79
GW3	7.22	Agreeable	<5	Agreeable	26.0	<1	574	286	287	195.4	0.82
GW4	7.29	Agreeable	<5	Agreeable	26.0	<1	655	264	264	235.6	0.88
GW5	7.36	Agreeable	<5	Agreeable	25.9	<1	600	231	298	154.7	0.76
GW6	7.31	Agreeable	<5	Agreeable	26.7	<1	564	267	301	140.3	0.64
GW7	7.29	Agreeable	<5	Agreeable	26.8	<1	521	225	265	168.9	0.81
GW8	7.22	Agreeable	<5	Agreeable	25.7	<1	485	217	242	192.1	0.78
GW9	7.21	Agreeable	<5	Agreeable	27.0	<1	523	189	258	171.5	0.83
GW10	7.11	Agreeable	<5	Agreeable	26.9	<1	545	224	304	201.6	0.54
GW11	7.21	Agreeable	<5	Agreeable	26.5	<1	545	271	333	169.8	0.74
Desirable	6.5-8.5	Agreeable	5	Agreeable	-	1.0	500	200	200	250	1.0



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Permissible	6.5-8.5	Agreeable	15	Agreeable	-	5.0	2000	600	600	1000	1.5
Protocol	IS: 3025 (P-11)	IS:3025 (P-5)	IS: 3025 (P-4)	IS:3025 (P-7)	IS: 3025 (P-9)	APHA 23 rd Ed.	IS: 3025 (P-16)	IS:3025 (P-23)	IS: 3025 (P-21)	IS: 3025 (P-21)	APHA 23 rd Ed.

Parameter	Calcium as Ca	Magnesium as Mg	Sulphate	Nitrates	Phenolic Compounds	Iron (as Fe)	Mercury (as Hg)	Zinc (as Zn)	Cadmium (as Cd)	Chromium (as Cr)	Arsenic (as As)
GW1	52.31	32.65	152.3	16.5	BDL	0.37	BDL	BDL	BDL	BDL	BDL
GW2	45.65	19.12	135.4	17.4	BDL	0.31	BDL	BDL	BDL	BDL	BDL
GW3	50.64	30.21	126.7	18.6	BDL	0.43	BDL	BDL	BDL	BDL	BDL
GW4	49.78	31.72	141.5	15.6	BDL	0.51	BDL	BDL	BDL	BDL	BDL
GW5	39.58	28.65	132.3	20.3	BDL	0.46	BDL	BDL	BDL	BDL	BDL
GW6	48.78	30.24	129.7	18.4	BDL	0.37	BDL	BDL	BDL	BDL	BDL
GW7	50.36	29.54	128.4	22.3	BDL	0.36	BDL	BDL	BDL	BDL	BDL
GW8	42.15	31.25	123.4	20.1	BDL	0.42	BDL	BDL	BDL	BDL	BDL
GW9	50.36	30.26	114.5	19.8	BDL	0.31	BDL	BDL	BDL	BDL	BDL
GW10	56.87	35.78	145.0	21.7	BDL	0.39	BDL	BDL	BDL	BDL	BDL
GW11	49.87	33.24	132.6	18.5	BDL	0.34	BDL	BDL	BDL	BDL	BDL
Desirable	75	30	200	45	0.001	1	0.001	5	0.003	0.05	0.01
Permissible	200	100	400	No Relaxation	0.002	No Relaxation	No Relaxation	15	No Relaxation	No Relaxation	0.05
Protocol	IS: 3025 (P-40)	IS: 3025 (P-46)	APHA 23 rd Ed.	IS: 3025 (P-34)	IS:3025 (P-43)	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.

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Parameter	Lead (as Pb)	Boron (as B)	Selenium (as Se*)	RFC	Polycyclic Aromatic Hydrocarbons (PAH*)	Anionic Detergent*	Aluminum (as Al)	Total Coliform
GW1	BDL	0.40	BDL	BDL	BDL	BDL	BDL	Absent
GW2	BDL	0.32	BDL	BDL	BDL	BDL	BDL	Absent
GW3	BDL	0.30	BDL	BDL	BDL	BDL	BDL	Absent
GW4	BDL	0.27	BDL	BDL	BDL	BDL	BDL	Absent
GW5	BDL	0.30	BDL	BDL	BDL	BDL	BDL	Absent
GW6	BDL	0.41	BDL	BDL	BDL	BDL	BDL	Absent
GW7	BDL	0.29	BDL	BDL	BDL	BDL	BDL	Absent
GW8	BDL	0.30	BDL	BDL	BDL	BDL	BDL	Absent
GW9	BDL	0.32	BDL	BDL	BDL	BDL	BDL	Absent
GW10	BDL	0.30	BDL	BDL	BDL	BDL	BDL	Absent
GW11	BDL	0.29	BDL	BDL	BDL	BDL	BDL	Absent
Desirable	0.01	0.5	0.01	0.2	0.0001	0.2	0.03	Absent
	No Relaxation	1.0	No	1.0	No	1.0	0.2	Absent
Permissible								
Protocol	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	APHA 23 rd Ed.	IS: 1622

Remarks: Test parameters coming in under limit, Prescribe limits are given by MoEF/Central Pollution Control Board.

Notes:

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Ground Water	GW-121020-2	12/10/2020

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

SAMPLING & ANALYSIS DATA

Sample Collected On : 23/09/2020
Sample Collected By : Laboratory
Sample Description : Ground Water
Sample Quantity/Packing detail : 2.0 lt/Plastic Cane
Weather Conditions : Normal
Analysis Duration : 25/09/2020 to 29/09/2020

Parameters	Cyanide (as CN*)	Mineral Oil*
GW1	BDL	BDL
GW2	BDL	BDL
GW3	BDL	BDL
GW4	BDL	BDL
GW5	BDL	BDL
GW6	BDL	BDL
GW7	BDL	BDL
GW8	BDL	BDL
GW9	BDL	BDL
GW10	BDL	BDL
GW11	BDL	BDL
IS 10500	Desirable	0.05
	Permissible	No
Protocol		APHA 23rd Ed.

Remark:

GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond – North East Side, GW3: Near Ecological Pond West Side,
GW4: Near Ecological Pond South East Side
GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water Block Area,
GW7: Near RO/DM Plant East Side Area, GW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side,
GW10: Secured Landfill Area South Side

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TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
VOC Emission	VOC-121020-13	12/10/2020

SAMPLING & ANALYSIS DATA

Description	- Volatile Organic Carbon Monitoring
Date of Sampling	- 24/09/2020
Name & Address of the Industry	- M/s HPCL-Mittal Energy Limited, Village-Phullokhar, Taluka – Talwandi Saboo, Distt. Bhatinda (Punjab) India
Normal Operating Schedule	- As per requirement
Parameters Monitored	- VOC
Purpose of Monitoring	- Assessment of Pollution load

Sr. No.	Locations	Test Results (PPM)
1	Near ETP	0.3
2	Near Rail Gantry	BDL
3	Near Road Gantry	BDL
4	Battery limits of CDU/VDU	BDL
5	Battery limits of FCCU	BDL
6	Battery limits of DHDT	BDL
7	Battery limits of VGO-HDT	BDL
8	Battery limits of MS Block	BDL
9	Battery limits of DCU	BDL
10	Product Intermediate Storage Tanks Down Wind Direction	BDL
11	Product Intermediate Storage Tank UP Wind Direction	BDL
12	Near HPCL Product Dispatch Pumps	0.2
13	Battery limits of PPU	BDL
14	Near Crude Oil storage Tanks	0.4
15	Battery Limits of SRU Block	BDL

Remark:

BDL-Below Detection Limit (LOQ-0.1)

CHECKED BY

AUTHORIZED SIGNATORY



Laboratory : GT-20, Sector-117, Noida, Gautam Budh Nagar - 201301

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



Analyzing for an Assured
Future

NOIDA TESTING LABORATORIES

(An ISO : 9001 : 2015, ISO 14001:2015 & ISO 45001:2018 & NABL Accredited Laboratory)
MoEF & CC (Ministry of Environment, Forest & Climate Change), UPPCB & HSPCB Recognized Laboratory
+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-121020-3	12/10/2020

ISSUED TO: HPCL- Mittal Energy Limited, Village – Phullokhar, Taluka – Talwandi Saboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On : 23/09/2020
Sample Collected By : Laboratory
Sample Description : Waste Water (W-1: ETP Outlet, Inside GGSR)
Sample Quantity/Packing detail : 2.0 lt/Plastic Cane
Weather Conditions : Normal
Analysis Duration : 25/09/2020 to 29/09/2020

Sr.N	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
1	pH	...	7.66	6.0-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	19.0	20.0	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	90.11	125.0	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	12.47	15.0	IS:3025 (P-44)
5	Oil & Grease (O&G)	mg/L	BDL	5.0	IS:3025 (P-39)
6	Phenolic Compounds(C ₆ H ₅ OH)	mg/L	0.30	0.35	IS:3025 (P-43)
7	Sulphide (S)	mg/L	0.38	0.5	IS:3025 (P-29)
8	Total Kjeldahl Nitrogen (NH ₃)	mg/L	19.8	40	IS:3025 (P-34)
9	Phosphate	mg/L	1.3	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.

Remark:GW1: Near Storm Water Pond-South East Side, GW2: Near Storm Water Pond – North East Side, GW3: Near Ecological Pond West Side, GW4: Near Ecological Pond South East Side

GW5: Near Solar Pond South East Side- East Side of Water Block Area, GW6: Near Solar Pond South East Side- North East Side of Water Block Area, GW7: Near RO/DM Plant East Side Area, GW8: Near Secured Landfill Area North Side, GW9: Secured Landfill Area West Side, GW10: Secured Landfill Area South Side

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+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-121020-4	12/10/2020

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

SAMPLING & ANALYSIS DATA

Sample Collected On : 23/09/2020
Sample Collected By : Laboratory
Sample Description : Waste Water (W-1: ETP Outlet, Inside GGSR)
Sample Quantity/Packing detail : 2.0 lt/Plastic Cane
Weather Conditions : Normal
Analysis Duration : 25/09/2020 to 29/09/2020

Sr.No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
1	Ammonia (N)	mg/L	8.11	15.0	IS:3025 (P-34)
2	Cyanide (CN)	mg/L	BDL	0.20	APHA-23rd Ed.
3	Total Chromium	mg/L	BDL	2.0	IS:3025 (P-52)
4	Vanadium (V)	mg/L	BDL	0.2	APHA-23rd Ed.
5	Benzene	mg/L	BDL	0.1	APHA-23rd Ed.
6	Benzo(a)-Pyrene	mg/L	BDL	0.2	APHA-23rd Ed.

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+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-121020-10	12/10/2020

ISSUED TO: HPCL- Mittal Energy Limited, Village – Phullokhar, Taluka – Talwandi Saboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On : 23/09/2020
Sample Collected By : Laboratory
Sample Description : Waste Water (W-2: STP Outlet, Inside GGSR)
Sample Quantity/Packing detail : 2.0 lt/Plastic Cane
Weather Conditions : Normal
Analysis Duration : 25/09/2020 to 29/09/2020

Sr. No.	Parameters	Unit	Test Result	Protocol
			W2	
1	Bioassay Toxic Test	%	98 % survival of fish after 96 hours in 100 % effluent	IS:6582 (P-1)

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Laboratory : GT-20, Sector-117, Noida, Gautam Budh Nagar - 201301

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+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-121020-5	12/10/2020

ISSUED TO: HPCL- Mittal Energy Limited, Village – Phullokhar, Taluka – Talwandi Saboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On : 23/09/2020
Sample Collected By : Laboratory
Sample Description : Waste Water (W-2: STP Outlet, Inside GGSR)
Sample Quantity/Packing detail : 2.0 lt/Plastic Cane
Weather Conditions : Normal
Analysis Duration : 25/09/2020 to 29/09/2020

Sr. No.	Parameters	Unit	Test Results	Standards	Protocol
			W2		
1	pH	-	7.74	6.5 to 9.0	IS:3025 (P-11)
2	Temperature	0C	25.6	-	IS:3025 (P-9)
3	TSS	mg/l	8.1	≤10mg/l	IS:3025 (P-17)
4	COD	mg/l	39.5	≤50mg/l	IS:3025 (P-58)
5	BOD	mg/l	7.7	≤10mg/l	IS:3025 (P-44)
6	O & G	mg/l	BDL	≤5mg/l	IS:3025 (P-39)
7	Ammonical Nitrogen as N*	mg/l	4.88	≤5mg/l	IS:3025 (P-34)
8	PO4-P*	mg/l	1.87	≤2mg/l	IS:3025 (P-31)

CHECKED BY

AUTHORIZED SIGNATORY



Laboratory : GT-20, Sector-117, Noida, Gautam Budh Nagar - 201301
E : noida_laboratory@gmail.com, info@noidalabs.com, W : www.noidalabs.com



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

+91-9313611642, 8510081921, 7503031145, 8527870572, 7503031146, 9999794369

TEST CERTIFICATE

Test Report of	Report Code	Date of Issue
Waste Water	WW-121020-6	12/10/2020

ISSUED TO: HPCL- Mittal Energy Limited, Village – Phullokhar, Taluka – Talwandi Saboo, Distt.- Bhatinda (Punjab) India

SAMPLING & ANALYSIS DATA

Sample Collected On : 23/09/2020
Sample Collected By : Laboratory
Sample Description : Waste Water (W-2: STP Outlet, Inside GGSR)
Sample Quantity/Packing detail : 2.0 lt/Plastic Cane
Weather Conditions : Normal
Analysis Duration : 25/09/2020 to 29/09/2020

Sr. No.	Parameters	Unit	Test Results	Standards	Protocol
			W2		
1	N-total*	mg/l	7.44	≤10mg/l	IS:3025 (P-34)

CHECKED BY

AUTHORIZED SIGNATORY



Annexure-II

Online Ambient Air Quality Data from									
Monthly Average Values from Apr'2020 to Sept'2020									
Parameter		SO ₂	NO ₂	CO	O ₃	PM ₁₀	PM _{2.5}	NH ₃	BENZENE
Station No.	Month	µg/m3	µg/m3	mg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3
AAQMS 1	Apr-20	8.19	19.34	0.79	41.84	65.43	23.07	23.02	1.93
AAQMS 2		8.86	14.58	1.03	27.06	44.78	27.44	19.57	1.06
AAQMS 3		9.26	19.98	0.99	42.93	51.63	17.08	26.36	1.91
AAQMS 4		9.48	20.02	0.68	31.36	50.92	28.96	22.15	1.60
AAQMS 5		6.23	19.80	0.86	30.78	77.97	35.53	26.07	0.87
Min		6.23	14.58	0.68	27.06	44.78	17.08	19.57	0.87
Max		9.48	20.02	1.03	42.93	77.97	35.53	26.36	1.93
Avg		8.41	18.74	0.87	34.79	58.15	26.42	23.43	1.47
CPCB limit		80	80	2	100	100	60	400	5
AAQMS 1	May-20	8.40	19.22	0.84	35.29	84.04	34.86	20.50	1.77
AAQMS 2		8.30	12.98	0.97	34.74	64.47	34.99	22.23	1.13
AAQMS 3		7.44	17.87	0.87	29.75	73.77	34.10	26.70	1.35
AAQMS 4		7.79	18.18	0.74	33.70	72.85	35.76	18.19	1.43
AAQMS 5		4.63	21.14	0.66	27.50	99.58	46.61	34.48	0.61
Min		4.63	12.98	0.66	27.50	64.47	34.10	18.19	0.61
Max		8.40	21.14	0.97	35.29	99.58	46.61	34.48	1.77
Avg		7.31	17.88	0.82	32.20	78.94	37.26	24.42	1.26
CPCB limit		80	80	2	100	100	60	400	5
AAQMS 1	Jun-20	9.12	20.85	0.87	33.77	61.78	31.77	21.16	1.37
AAQMS 2		7.93	13.92	0.93	49.33	60.24	35.21	22.31	1.05
AAQMS 3		6.89	20.62	0.88	31.13	57.95	20.82	27.21	1.27
AAQMS 4		7.76	19.87	0.72	29.65	57.68	21.72	23.31	1.42
AAQMS 5		5.67	20.06	0.68	30.03	75.86	40.96	28.57	1.90
Min		5.67	13.92	0.68	29.65	57.68	20.82	21.16	1.05
Max		9.12	20.85	0.93	49.33	75.86	40.96	28.57	1.90
Avg		7.48	19.06	0.82	34.78	62.70	30.10	24.51	1.40
CPCB limit		80	80	2	100	100	60	400	5
AAQMS 1	Jul-20	8.21	17.85	0.79	38.26	61.32	28.27	20.12	1.34
AAQMS 2		8.15	12.92	0.78	37.06	33.18	20.73	20.34	1.20
AAQMS 3		8.22	18.87	0.67	38.46	35.21	14.28	28.72	1.50
AAQMS 4		7.40	20.83	0.49	34.69	42.12	20.06	25.25	1.53
AAQMS 5		5.82	18.18	0.61	29.37	51.47	22.05	25.08	1.61
Min		5.82	12.92	0.49	29.37	33.18	14.28	20.12	1.20
Max		8.22	20.83	0.79	38.46	61.32	28.27	28.72	1.61
Avg		7.56	17.73	0.67	35.57	44.66	21.08	23.90	1.43
CPCB limit		80	80	2	100	100	60	400	5
AAQMS 1	Aug-20	7.05	16.45	0.72	42.27	43.91	20.74	20.40	1.52
AAQMS 2		8.03	14.85	0.75	26.50	27.57	12.14	21.51	1.20
AAQMS 3		6.72	20.96	0.68	38.91	26.12	12.56	25.98	1.66
AAQMS 4		7.13	21.42	0.87	34.68	40.52	18.92	25.62	1.61
AAQMS 5		4.11	17.67	0.65	29.07	44.93	16.44	23.88	2.05
Min		4.11	14.85	0.65	26.50	26.12	12.14	20.40	1.20
Max		8.03	21.42	0.87	42.27	44.93	20.74	25.98	2.05
Avg		6.61	18.27	0.73	34.29	36.61	16.16	23.48	1.61
CPCB limit		80	80	2	100	100	60	400	5
AAQMS 1	Sep-20	7.48	12.20	0.84	38.22	52.52	23.86	19.44	1.48
AAQMS 2		8.21	17.94	0.94	32.91	57.47	15.68	21.93	1.02
AAQMS 3		8.51	23.24	0.84	30.88	37.80	14.62	28.16	1.47
AAQMS 4		7.67	19.15	0.70	34.67	45.02	19.51	23.53	1.61
AAQMS 5		3.97	16.78	0.69	27.70	68.29	18.33	23.80	2.08
Min		3.97	12.20	0.69	27.70	37.80	14.62	19.44	1.02
Max		8.51	23.24	0.94	38.22	68.29	23.86	28.16	2.08
Avg		7.17	17.86	0.80	32.88	52.22	18.40	23.37	1.53
CPCB limit		80	80	2	100	100	60	400	5

NOTE :

Particulate Matter (PM₁₀) is already higher in ambient air quality baseline data even before the start of the
 Particulate Matter (PM_{2.5}) is already higher in ambient air quality baseline data even before the start of the

Activities undertaken for improving socio-economic condition in the surrounding areas from Apr'20 to Sep'2020		
CSR Pillars	Beneficiaries	Remarks
Skill Development	646	Skill Training programs- Sewing Machine Operator; Beauty Therapist; Stitcher (Goods & Garments); Hand Embroiderer; Small Poultry Farmer; Goat Farmer; Hatchery Production Worker; Piggery Farmer; Maize Cultivator; Animal Health Worker; Domestic Data Entry Operator
Community Healthcare & Hygiene	11794 families of 27 vicinity villages	Installation of Pre-Fabricated toilets under Swatchh Bharat mission; Drinking water arrangement by installation of RO Plant; Fogging & Spraying in vicinity villages; Support to Drugs De-Addiction and Rehabilitation center, Sirsa <u>Support under COVID 19</u> Distribute Food Packets to needy people; Distribution of Mask; Support of Medical Equipments to Govt. Hospitals & other Health institute; Support to District administration under COVID-19
Livelihood and Sustainable Development	283	Women Entrepreneurship Development; Women Empowerment initiatives through HIH;
Total	53697	From 27 vicinity villages

Photographs for activities undertaken for improving socio-economic condition in the surrounding areas from Apr'20 to Sep'2020

**Livelihood and Sustainable Development
(Women Entrepreneurship Development)**



**Skill Development
(Skill Training Programs)**



**Livelihood and Sustainable Development
(Women Entrepreneurship Development)2**



**Community Healthcare & Hygiene
(Installation of Pre-Fabricated toilets under
Swatchh Bharat mission)**



**Community Healthcare & Hygiene
(Distribution of Food Packets)**



**Community Healthcare & Hygiene
(Fogging & Sanitization)**



**Community Healthcare & Hygiene
(Distribution of Mask)**



**Community Healthcare & Hygiene
(RO Plant)**



Annexure-IV

Activities undertaken for community welfare including eco-developmental measures in the surrounding areas from Apr'2020' to Sep'2020		
CSR Pillars	Beneficiaries	Remarks
Community infrastructure & Environment	-	Distribution of Agriculture Equipment; Support to District administration for repair of road, Support to municipal Corporation Patiala to manage legacy waste under Swachh Bharat Initiative; Support to Vanaprastha Ashram under water harvesting initiative
Education Development	5057	Construction, Repair and Maintenance of School Building and Toilets for Schools; Support of Furniture to Govt. Schools; Distribution of stationary items to school students during pandemic situation;
Total	5057	

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

**Education Development
(Construction, Repair and Maintenance of
School Building and Toilets for Schools)**



**Education Development
(Support of Furniture to Govt. Schools)**



**Education Development
(Distribution of stationary items)**



**Education Development
(Distribution of stationary items)**



The Tribune

BATHINDA | THURSDAY | 9 AUGUST 2018

HPCL-Mittal Energy Limited (H MEL)

(A JV between HPCL and MEI Pte. Ltd.)

Village Phullokari, Taluka - Talwandi Sabo

District - Bathinda - 151301, PUNJAB

Website : www.hmel.in



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 ਐਲ ਪੀ ਟੀ ਈ ਲਿਮਟਿਡ ਦਰਮਿਆਨ ਇਕ ਜੋ ਵੀ)

ਪਿੰਡ ਫੁੱਲੋਕਾਰੀ, ਤਾਲੁਕਾ-ਤਲਵੰਡੀ ਸਾਬੋ

ਜ਼ਿਲ੍ਹਾ ਬਠਿੰਡਾ-151301, ਪੰਜਾਬ

ਵੈਬਸਾਈਟ : www.hmel.in



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 ਐਫ ਐਚ ਪੀ ਸੀ), ਨਵੀਂ ਦਿੱਲੀ ਨੇ ਪੱਤਰ ਨੰਬਰ : ਜੇ-11011/386/2016-1 ਏ-11 (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 ਵੈਬਸਾਈਟ <http://moef.nic.in> 'ਤੇ ਦੇਖੀਆਂ ਜਾ ਸਕਦੀਆਂ ਹਨ।

— ਅਧਿਕਾਰਤ ਸਿਗਨੇਟਰੀ

ਐਚ ਪੀ ਸੀ ਐਲ-ਮਿੱਤਲ ਐਨਰਜੀ ਲਿਮਟਿਡ

Annexure-VI

Copy of mail to MoEF&CC for action plan of CER

Jatinder Kumar1

Annexure -VI

From: Satish Kumar Kalra
Sent: Thursday, May 16, 2019 2:56 PM
To: Sanket Thapar
Cc: Ravi Deshwal; Jatinder Kumar1; Mainak Ray
Subject: FW: BS-VI Fuel Quality Upgradation Project at Guru Gobind Singh Refinery, Village Phulo Khari, Tehsil Talwandi Sabo, District Bhathinda (Punjab) by M/s HPCL-Mittal Energy Limited (HMEL) - Environmental Clearance- reg.
Attachments: CER plan BSVI project.docx

From: Satish Kumar Kalra
Sent: 06 July 2018 17:07
To: nobi.ep@nic.in
Cc: srivastava <sk.smree66@nic.in>; KS Sitaraman <ks.sitaraman@hmel.in>; Tapash Pramanik (tapash.pramanik@hmel.in) <tapash.pramanik@hmel.in>
Subject: RE: BS-VI Fuel Quality Upgradation Project at Guru Gobind Singh Refinery, Village Phulo Khari, Tehsil Talwandi Sabo, District Bhathinda (Punjab) by M/s HPCL-Mittal Energy Limited (HMEL) - Environmental Clearance-reg.

Dear sir,
Please refer trailing mail. As desired please find enclosed year wise Corporate Environment Responsibility (CER) plan for BS-VI Fuel Quality Up gradation Project at Guru Gobind Singh Refinery by M/s HPCL-Mittal Energy Limited (HMEL) .

With regards

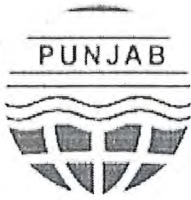


Satish Kumar Kalra
DGM - Technical Services
HPCL-Mittal Energy Ltd.
Village- Phullokhari | Taluka- Talwandi Saboo
Bathinda - 151301, Punjab (India)
Phone: +91 1655 272905
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Email: satish.kalra@hmel.in

From: nobi.ep@nic.in [<mailto:nobi.ep@nic.in>]
Sent: Thursday, July 5, 2018 2:53 PM
To: Satish Kumar Kalra; Tapash Pramanik; KS Sitaraman
Cc: srivastava
Subject: BS-VI Fuel Quality Upgradation Project at Guru Gobind Singh Refinery, Village Phulo Khari, Tehsil Talwandi Sabo, District Bhathinda (Punjab) by M/s HPCL-Mittal Energy Limited (HMEL) - Environmental Clearance- reg.

Sir,

This has reference to your proposal No. IA/PB/IND2/61343/2016 dated 2nd February, 2018 for environmental clearance to the BS-VI Fuel Quality upgradation project at Guru Gobind Singh



PUNJAB POLLUTION CONTROL BOARD

Zonal Office, Power House Road, Street No. 12, Bathinda.

Website:- www.ppcb.gov.in

Office Dispatch No : 3488

Registered/Speed Post

Date: 2-11-2020

Industry Registration ID: R12BTI44706

Application No : 12564518

To,

Krishan Tuteja
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/2020/12564518
Date of issue :	30/10/2020
Date of expiry :	31/03/2021
Certificate Type :	Varied
Previous CTO No. & Validity :	CTOA/Renewal/BTI/2019/9511030 From: 29/07/2020 To: 31/03/2022

2. Particulars of the Industry

Name & Designation of the Applicant	Krishan Tuteja, (Vice President- Operation)
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	1334411.8 lakhs
Category of Industry	Red
Type of Industry	Oil Refinery
Scale of the Industry	Large
Office District	Bathinda
Consent Fee Details	Rs. 88,38,635/- vide UTR No. SBINR52019030700120533 dt. 07.03.2019.
Raw Materials (Name with Quantity per day)	Crude Oil @ 33750 MT/day (11.25 MMTPA).

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Products (Name with Quantity per day)	<i>Production of products in BS-VI configuration @ 11.25 MTPA.</i> <ul style="list-style-type: none"> • LPG @ 2889 TPD. • Naptha @ 1107 TPD • Gasoline (Bharat VI) @ 4620 TPD • ATF @ 750 TPD • Kerosene @ 600 TPD • Diesel (Bharat VI) @ 15054 TPD • Sulphur @ 736.5 TPD • Coke @ 2830.5 TPD • Hexane @ 15 TPD • Poly Propylene @ 1500 TPD • Bitumen @ 1560 TPD • Motor Turpentine Oil @ 75 TPD
By-products, if any, (Name with Quantity per day)	--
Details of the machinery and process	<i>Crude Oil – Distillation – Refining - Products.</i>
Quantity of fuel required (in TPD) and capacity of boilers/ Furnace/Thermo heater etc.	<ul style="list-style-type: none"> • 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. • Fuel Oil /Gas for furnaces / Units.
Type of Air Pollution Control Devices to be installed	<ul style="list-style-type: none"> • 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. • Low Nox burners have been installed as APCDs with all the furnaces / units.
Stack height provided with each boiler/thermo heater/Furnace etc.	<ul style="list-style-type: none"> • Stack of 100 meters height above GL with 4 no. boilers of capacity 240 TPH each. • Stack of 130 meters height above GL with 2 no. boilers of capacity 300 TPH each. • Stack of 37 meters height above GL with DG sets of capacity 8250 KVA, 3520 KVA & 1010 KVA each. • Stacks of adequate height above GL provided with furnaces / Units
Sources of emissions and type of pollutants	<ul style="list-style-type: none"> • 4 no. boilers of capacity 240 TPH each. • 2 no. boilers of capacity 300 TPH each. • 3 no. DG sets of capacity 8250 KVA, 3520 KVA & 1010 KVA. • Furnaces / Units
Standards to be achieved under Air(Prevention & Control of Pollution) Act, 1981	<i>As prescribed by the PPCB/CPCB/MOEF.</i>



30/10/2020

(Ruby Sidhu)
Asstt Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

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Endst. No.:

Dated:

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

Environmental Engineer, Punjab Pollution Control Board, Regional Office, Bathinda.



30/10/2020

(Ruby Sidhu)
Asstt Environmental Engineer
For & on behalf
of
(Punjab Pollution Control Board)

9 31 2020

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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 (D_e) shall be calculated from the following equation to determine upstream, downstream distance:-
$$D_e = 2 LW / (L+W)$$

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 $H = 14 Q_g^{0.3}$ or $H = 74 (Q_p)^{0.24}$ Where Q_g = Quantity of SO ₂ in Kg/hr. Q_p = 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:-
It shall be in 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.
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 'A' class Other than the periphery of I and Class-II town		
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 the Hazardous 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;

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- (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 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.

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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.

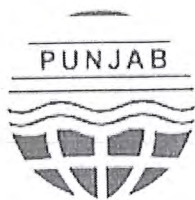
B. SPECIAL CONDITIONS

1. The industry will develop 33 % of the total project area under plantation as per the condition of Environmental Clearances granted to it from time to time, within 2 years in phase wise manner and shall submit the quarterly report in the matter to the Board.
2. The industry shall comply with all the conditions of the Environmental Clearance granted to it vide MOEF & CC letter dated 16.07.2007 (for configuration of 9 MMTPA refinery), 22.06.2015 (for expansion of 9 MMTPA refinery to 11.25 MMTPA), 12.12.2017 (for polymer addition project) and 07.08.2018 (for upgradation of the fuel from BS-IV to BS-VI).
3. The bulk waste generator shall ensure segregation of solid waste at source, facilitate collection of segregated waste in separate streams, handover re-cycleable material to either the authorized waste pickers or the authorized recyclers as prescribed in the Solid Waste Management Rules, 2016. The bio-degradable waste shall be processed, treated and disposed of through composting or bio-methanation within the premises as far as possible. The residual waste shall be given to the waste collectors or agency as directed by the local body.
4. The industry shall install/operate online continuous 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 industry will ensure the implementation of dynamic emission limit for dual fuel stacks.
6. The industry will get carry out a social audit of the surrounding villages regarding the odour problem from a reputed institute and shall submit the report in the matter to the Board. Also, industry shall prepare a odour management plan based upon the various recommendations & get it approved from the Board, within 3 months & get it implemented, within next 3 months with specific timelines.
7. The consent to operate under the provisions of Air Act, 1981 is granted in super session to the previous consent granted under the said Act vide no. CTOA/Renewal/BTI/2019/9511030 dt. 29.07.2019, which was valid upto 31.03.2022.



30/10/2020

(Ruby Sidhu)
Asstt Environmental Engineer
For & on behalf
of
(Punjab Pollution Control Board)



PUNJAB POLLUTION CONTROL BOARD

Zonal Office, Power House Road, Street No. 12, Bathinda.

Website:- www.ppcb.gov.in

Office Dispatch No : 2333

Registered/Speed Post

Date: 4/8/2020

Industry Registration ID: R12BTI44706

Application No : 12564784

To,

Prabh Das
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 $\frac{1}{2}$ Consent to Operate $\frac{1}{2}$ 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 for discharge 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/2020/12564784
Date of issue :	30/07/2020
Date of expiry :	31/03/2021
Certificate Type :	Varied
Previous CTO No. & Validity :	CTOW/Renewal/BTI/2019/9511579 From: 29/07/2019 To: 31/03/2022

2. Particulars of the Industry

Name & Designation of the Applicant	Krishan Tuteja, (Vice President- Operation)
Address of Industrial premises	Hpcl-mittal Energy Limited (guru Gobind Singh Refinery), Village Phullokari, taluka Talwandi Saboo., Talwandi Saboo, Bathinda-151301
Capital Investment of the Industry	1334411.8 lakhs
Category of Industry	Red
Type of Industry	Oil Refinery
Scale of the Industry	Large
Office District	Bathinda
Consent Fee Details	Rs. 88,38,635/- vide UTR No. SBINR52018011000065383 dated 07.03.2019.
Raw Materials (Name with quantity per day)	Crude Oil @ 33750 MT/day (11.25 MMTPA)

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Products (Name with quantity per day)	<i>Production of products in BS-VI configuration @ 11.25 MMTPA</i> <i>LPG @ 2889 TPD</i> <i>Naptha @ 1107 TPD</i> <i>Gasoline (Bharat VI) @ 4620 TPD</i> <i>ATF @ 750 TPD</i> <i>Kerosene @ 600 TPD</i> <i>Diesel (Bharat VI) @ 15054 TPD</i> <i>Sulphur @ 736.5 TPD</i> <i>Coke @ 2830.5 TPD</i> <i>Hexane @ 15 TPD</i> <i>Poly Propylene @ 1500 TPD</i> <i>Bitumen @ 1560 TPD</i> <i>Motor Turpentine Oil @ 75 TPD</i>
By-Products, if any,(Name with quantity per day)	--
Details of the machinery and processes	<i>Crude Oil – Distillation – Refining - Products.</i>
Details of the Effluent Treatment Plant	<i>The industry has installed ETP of capacity @ 500 KL / hr for treatment of effluent. The ETP consists of -</i> <i>Primary Treatment Section :</i> <ul style="list-style-type: none"> • <i>American Petroleum institute (API) separators,</i> • <i>Tilted Plate interceptor (TPI) separator,</i> • <i>Diffused / Dissolved Air Floatation (DAF) system (having flash mixing tank, Flocculation tank, DAF tank and associated facilities).</i> <i>Secondary treatment section :</i> <ul style="list-style-type: none"> • <i>Sequential Batch Reactor (SBR)</i> • <i>Membrane Bio Reactor (MBR)</i>
Mode of Disposal	<i>Trade Effluent @ 480 Kl/hr - discharged onto land for plantation after treatment in ETP.</i> <i>Domestic Effluent @ 600 KLD - discharged in the SBR section of the ETP.</i>
Standards to be achieved under Water(Prevention & Control of Pollution) Act, 1974	<i>As prescribed by the PPCB/CPCB/MOEF.</i>



03/08/2020

(Ruby Sidhu)
Asstt 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:
Environmental Engineer, Punjab Pollution Control Board, Regional Office, Bathinda.

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03/08/2020

(Ruby Sidhu)
Asstt 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 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 equipment $\frac{1}{2}$ s 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 dated 14/9/06, 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.

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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 industry will develop 33% of the total project area under plantation as per the condition of Environmental Clearances granted to it from time to time, within 2 years in phase wise manner and shall submit the quarterly report in the matter to the Board.
2. The industry shall comply with all the conditions of the Environmental Clearance granted to it vide MOEF & CC letter dated 16.07.2007 (for configuration of 9 MMTPA refinery), 22.06.2015 (for expansion of 9 MMTPA refinery to 11.25 MMTPA), 12.12.2017 (for polymer addition project) and 07.08.2018 (for upgradation of the fuel from BS-IV to BS-VI).
3. The bulk waste generator shall ensure segregation of solid waste at source, facilitate collection of segregated waste in separate streams, handover recyclable material to either the authorized waste pickers or the authorized recyclers as prescribed in the Solid Waste Management Rules, 2016. The bio-degradable waste shall be processed, treated and disposed of through composting or bio-methanation within the premises as far as possible. The residual waste shall be given to the waste collectors or agency as directed by the local body.
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 industry will maintain its green belt as per the Karnal technology and shall provide proper pipeline network for scientific distribution of its treated effluent.
6. 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.
7. The industry shall install separate energy meter for running of effluent treatment plant / re-circulation system and monthly report be sent to the Board by the fifth of the following month.
8. The industry shall obtain permission from the Central Ground Water Authority for the abstraction of ground water, if any.
9. The industry will ensure the implementation of dynamic emission limit for dual fuel stacks.
10. Ground water monitoring be conducted both from inside the industry (specifically from the secured landfill area) and outside the industrial premises (in radius of 5 KM), within 3 months.
11. The industry has inherent responsibility to get the compliances from the pre-construction stage from its contractors as per the condition of the Environmental Clearance granted to it and it will ensure the compliance of the same specifically w.r.t. the treatment / disposal of the effluent generated from the labour colonies constructed around the industry for its expansion.



03/08/2020

(Ruby Sidhu)
Asstt Environmental Engineer

For & on behalf

of

(Punjab Pollution Control Board)

"This is computer generated document from OCMMS by PPCB"

Hpcl-mittal Energy Limited (guru Gobind Singh Refinery), Village Phullokari, taluka Talwandi Saboo, Talwandi Sabo, Bathinda, 151301

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Date: 19th June, 2020
Ref: HMEL-TS-40-ENV 744

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 Compliance Report (From Oct'2019 to Mar'2020) for Guru Gobind Singh Refinery at Phullokhar, Bathinda District, Punjab.

Ref: 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'2019 to Mar'2020) of Guru Gobind Singh Refinery (along with Annexures) on the environmental conditions stipulated by MoEF&CC.

Thanking you,

Very Truly Yours,

Satish Kumar Kalra
(DGM-Technical Services)

Cc: Central Pollution Control Board, New Delhi and Punjab Pollution Control Board, Bathinda Punjab.
Cc: Punjab Pollution Control Board, 3rd Floor, Room No: 406E, Regional Office, Bathinda.

Enclosures:

- Annexure-I : Soft copy of original test reports of manual monitoring in CD.
Annexure-II : Ambient Air Quality Data (from Oct'2019 to Mar'2020).
Annexure-III: CSR activities carried out for improving socio-economic conditions (from Oct'2019 to Mar'2020).
Annexure-IV: CSR activities carried out for community welfare including eco-developmental measures in the surrounding areas (from Oct'2019 to Mar'2020).
Annexure- V : Copy of the advertisement publishing the accordance of Environmental Clearance by MoEF&CC.
Annexure- VI: Copy of mail to MoEF&CC for action plan of Corporate Environment Responsibility (CER).
Annexure-VII: Copy of Air & Water Consent to Operate.
Annexure-VIII: Acknowledgement copy of last submitted Six Monthly Compliance Report to MoEF&CC, Northern Regional Office, Chandigarh.

भारत सरकार / Govt. of India
पर्यावरण, वन एवं जलवायु परिवर्तन विभाग
Min. of Environment, Forests & Climate Change
बेज नं. 24-25, सेक्टर 31-ए
Bays No.24-25, Sec-31 A
चण्डीगढ़/Chandigarh