

EDS ANNEXURE

For

Setting up of additional 450 KTA of Polypropylene Production Plant within the Existing Naphtha Cracker Complex

At

**IOCL Panipat Naphtha Cracker Complex, Panipat
Village: Bal Jattan
Taluk: Panipat
District: Panipat
State: Haryana**

[Project termed under Schedule 5(c) Category ‘A’ – Petro-chemical complexes (industries based on processing of petroleum fractions & natural gas and/or reforming to aromatics” as per EIA Notification 2006 and its Amendments]

Submitted by:



**M/s. INDIAN OIL CORPORATION LIMITED, PANIPAT REFINERY &
PETROCHEMICAL COMPLEX**

EIA CONSULTANT:



M/s. HUBERT ENVIRO CARE SYSTEMS (P) LTD, CHENNAI

August 2021

LIST OF ANNEXURE

SNO	Description	Annexure No	Page No.
1.	Letter sent to monitoring cell- MoEF&CC	E1	3
2.	Authorization letter	E2	4
3.	EC conditions uploaded in Parivesh Portal	E3	5
4.	EC certification report, ATR & all earlier EC Copies	E4	6
5.	Greenbelt layout	E5	52
6.	Verdict of case which got disposed on 09.04.2021	E6	54

ANNEXURE E1



इंडियन ऑयल कॉर्पोरेशन लिमिटेड

पानीपत रिफ़ाइनरी एवं पेट्रोकेमिकल कॉम्प्लेक्स

पानीपत, हरियाणा - 132140

Indian Oil Corporation Limited

Panipat Refinery & Petrochemical Complex

Panipat, Haryana - 132140

वेबसाइट: www.iocl.com; ई-मेल: prpc_hse@indianoil.in

दूरभाष : 0180-252 4001/0180-2578833



रिफ़ाइनरीज़ प्रभाग
Refineries Division

Ref No: HSE/PRPC/4

Date: 15.06.2021

To
Monitoring Cell,
Environment Clearance Division,
Indira Paryawaran Bhawan,
Jor Bagh Road,
New Delhi -110003

Subject: Change in registered e-mail ID of Applicant in "PARIVESH" portal for Panipat Refinery & Petrochemical Complex, IOCL

Sir/Madam,

Panipat Refinery & Petrochemical Complex (PRPC) of Indian Oil Corporation Limited (IOCL) is registered at <http://parivesh.nic.in/loginnew.aspx> as an "Applicant" in matters related to Environment Clearance for new/expansion/modernization projects.

Presently e-mail id of Shri. A B Phand, SM (H, S&E) phandab@indianoil.in is registered on the portal. The concerned person has been transferred to a new location in recent transfers and postings.

In view of this, the name of registered user/e-mail may kindly be changed to prpc_hse@indianoil.in.

Submitted for your kind consideration and implementation.

Thanking You,

Yours faithfully,

Ashish Bhushan
15/6/2021

(Ashish Bhushan)

General Manager (HSE)

For and on behalf of

Executive Director & Refinery Head

Panipat Refinery and Petrochemical Complex

आशीष भूषण

Ashish Bhushan

महाप्रबंधक (स्वास्थ्य, सुरक्षा एवं पर्यावरण)

General Manager (Health, Safety & Environment)

पानीपत रिफ़ाइनरी एवं पेट्रोकेमिकल कॉम्प्लेक्स (आई.ओ.सी.एल.)

Panipat Refinery & Petrochemical Complex (IOCL)

पानीपत, Panipat-132140



ANNEXURE E2 इंडियन ऑयल कॉर्पोरेशन लिमिटेड

पानीपत रिफाइनरी एवं पेट्रोकेमिकल कॉम्प्लेक्स

पानीपत, हरियाणा - 132140

Indian Oil Corporation Limited

Panipat Refinery & Petrochemical Complex

Panipat, Haryana - 132140

वेबसाइट: www.iocl.com; ई-मेल: prpc_hse@indianoil.in

दूरभाष : 0180-252 4001/0180-2578833



रिफाइनरी प्रभाग
Refineries Division

Ref: IOCL/PRPC/HSE/EC/2021-22/4

30.07.2021

To
Member Secretary, Industrial Projects - 2,
Vayu Wing, 3rd Floor, MoEFCC,
Jor Bagh Road,
New Delhi - 110003

Sub: Authority letter for Submission of documents along with Form-2 to get environment clearance for Project "Setting up of additional 450 KTA of Polypropylene Production Plant within the Naphtha Cracker Complex"

Sir,

Undersigned is authorized by Panipat Refinery and Petrochemical Complex, of Indian Oil Corporation Limited, as per the enclosed Power of Attorney to submit documents along with Form-2 to get Environmental Clearance for the proposed Project "Setting up of additional 450 KTA of Polypropylene Production Plant within the Naphtha Cracker Complex".

The Environment Impact Assessment (EIA) study has been conducted by the accredited agency of MOEFCC.

Thanking You,

Yours faithfully,

(Hitesh R Shah)

Chief General Manager (TS)

For and on behalf of

Executive Director & Refinery Head

Panipat Refinery and Petrochemical Complex

हितेश आर. शाह

Hitesh R. Shah

मुख्य महाप्रबंधक (तकनीकी सेवाएं)

Chief General Manager (Technical Services)

पानीपत रिफाइनरी (आई.ओ.सी.एल.)-132140

Panipat Refinery (I.O.C.L.)-132140

EC conditions for all earlier ECs pertained to Panipat Naphtha Cracker Complex have been uploaded on Parivesh portal. Detail is mentioned below and can be seen in the below mentioned screenshot (SN 1, 2, 5, 7).

1. File Name: J-11011/153/2004-IA II (I), Naphtha Cracker Complex at Panipat Refinery
2. File Name: J-11011/106/2012-IA II (I), Butene-1 Project at Panipat Refinery & Petrochemical Complex
3. File Name: J-11011/268/2014-IA II (I), Recovery of Styrene at Indian Oil Panipat Refinery & Petrochemical Complex
4. File Name: J-11011/106/2012-IA II (I), Expansion of the Production Capacities for NCU, MEG, HDPE and PP unit and setting up Catalytic Manufacturing Unit

 PARIVESH परिवेश "Pro Active and Responsive facilitation by Interactive, Virtuous and Environmental Singlewindow Hub"						Ministry of Environment, Forest and Climate Change Government of India 	
phandab@indianoil.in						E-KYC EC Condition Upload Raise Complaint My Proposal(s) Dashboard Approvals My Account Logout	
List of EC Granted Proposals for uploading condition							
ID	Proposal_no	Type Of Proposal	Type of Application	Project Details	Upload EC Condition		
1	IA/HR/IND2/12345/2004	EC	Category A	File Name : J-11011/153/2004-IA II (I) Project Name : Naphtha Cracker Complex at Panipat Refinery State Name : Haryana	View Condition Uploaded Report		
2	IA/HR/IND2/12345/2012	EC	Category A	File Name : J-11011/106/2012-IA-II (I) Project Name : Butene-1 Project at Panipat Refinery & Petrochemical Complex State Name : Haryana	View Condition Uploaded Report		
3	IA/HR/IND2/73149/2018	EC	Category A	File Name : IA-J-11011/78/2018-IA-II(I) Project Name : Installation of Ethanol Plant from PSA Off Gases ex HGU 76 & 77 using Gas Fermentation Technology State Name : Haryana	UPLOAD EC CONDITION		
4	IA/HR/IND2/72123/2018	EC	Category A	File Name : IA-J-11011/43/2018-IA-II(I) Project Name : Installation of 100 KLPD Lingo-Cellulosic 2G Ethanol Plant at Gram Panchayat Baholi, Block Madlauda, Panipat Refinery Road, Panipat-132140, District Panipat, Haryana State Name : Haryana	UPLOAD EC CONDITION		
5	IA/HR/IND2/73327/2016	EC	Category A	File Name : J-11011/106/2012-IA-II (I) Project Name : Expansion of the Production Capacities for Naphtha Cracker Unit (NCU), Mono Ethylene Glycol (MEG), High Density Polyethylene (HDPE) and Polypropylene (PP) Unit and Setting up Catalyst Manufacturing Unit State Name : Haryana	View Condition Uploaded Report		
6	IA/HR/IND2/56442/2016	EC	Category A	File Name : J-11011/177/2016- IA II(I) Project Name : BS-VI Fuel Quality Up-gradation, Capacity Expansion of PX/PTA, NCU, MEG, HDPE, PP Units & New Catalyst Manufacturing Unit at Panipat Refinery & Petro-Chemical Complex (PRPC) State Name : Haryana	UPLOAD EC CONDITION		
7	IA/IND/HR/23749/2014	EC	Category A	File Name : J/11011/268/2014 IA II (I) Project Name : Recovery of Styrene at Indian Oil Panipat Refinery & Petrochemical Complex. State Name :	View Condition Uploaded Report		



भारत सरकार
GOVERNMENT OF INDIA

पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
एकीकृत क्षेत्रीय कार्यालय, चंडीगढ़ / Integrated Regional Office, Chandigarh



F. No.: 05-01/2018-IRO/

334-335

Dated: 10.05.2021

सेवा में

अतिरिक्त निदेशक (IA- Monitoring Cell),
पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय,
इंदिरा पर्यावरण भवन, जोर बाग रोड, नई दिल्ली
(Email: shruti.rao@nic.in).

Sub.: Capacity expansion of Naphtha Cracker, Mono Ethylene Glycol, HDPE & Polypropylene units and setting up catalyst manufacturing unit by M/s IOCL at Panipat Refinery & Petrochemical Complex, Panipat (Haryana) - Certified compliance monitoring report reg.

Ref: ई.सी. पत्र संख्या i. J-11011/106/2012-IA.II(I) dated 16.08.2018. ii. J-11011/268/2014-IA.II(I) dated 22.02.2017.
iii. J-11011/106/2012-IA-II(I) dated 23.05.2014. iv. J-11011/153/2004-IA.II(I) dated 04.01.2005

महोदय/महोदया,

उपरोक्त वर्णित पत्र के सन्दर्भ में आपके संज्ञान में लाया जाता है कि उपरोक्त परियोजना का निरीक्षण अधोहस्ताक्षरी द्वारा दिनांक 13.04.2021 को किया गया था। उक्त परियोजना की विस्तृत मानीटरिंग रिपोर्ट (संलग्नक-A) निम्नलिखित गैर-अनुपालना (non-compliance) बिन्दुओं सहित अग्रिम कार्रवाई हेतु संलग्न है:-

- PP has not submitted the details of HW and solid waste generated at different sections of PNC unit. (Sp. Condi. - iii)
- PP has not submitted the copy of permission to utilize Western Yamuna Canal from concern regulatory authority. (Sp. Condi. - vi)
- PP has not submitted the details of process organic residue & spent carbon and boiler ash sent to the cement industries. (Sp. Condi. - ix)
- PP has not submitted the details of ETP sludge and process inorganic & evaporation salt disposed of to TSDF. (Sp. Condi. - ix)
- No continuous VOC emission monitoring facility and VOC emission monitoring data provided by PP. (Sp. Condi. - xi, vi (EC-2014, 2015))
- PP has not submitted the copy water audit report and PP has not submitted the year wise details of fund earmarked (capital & recurring cost) and utilized for environment management plan and CER activities. (Sp. Condi. - xiii, xvii and Gen. Condi. - xii)
- PP has not submitted the copy of odour management plan and its mitigation measures adopted at project site. (Sp. Condi. - EC-2017 - xi)
- PP has not submitted the sulphur balance data having information of sulphur input & output and by products. (Sp. Condi. - viii (EC-2014))
- PP has not submitted the latest noise quality level monitoring data of project area. (Gen. Condi. - v)
- PP has not provided link of company website where copy of EC and six monthly compliance reports has been uploaded for public awareness. (Gen. Condi. - xiv)
- PP has not submitted copy of environmental statement of form-V and news paper advertisements of EC. (Gen. Condi. - xv & xvi)

P.T.O.



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पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
एकीकृत क्षेत्रीय कार्यालय, चंडीगढ़ / Integrated Regional Office, Chandigarh



F. No.: 05-01/2018-IRO/ **334-335**

Dated: 10.05.2021

To

Additional Director(S) (Monitoring Cell),
MoEF&CC, Indira Paryavaran Bhawan,
Jor Bagh Road, New Delhi – 110 003
(Email: shruti.rao@nic.in).

Sub.: Capacity expansion of Naphtha Cracker, Mono Ethylene Glycol, HDPE & Polypropylene units and setting up catalyst manufacturing unit by M/s IOCL at Panipat Refinery & Petrochemical Complex, Panipat (Haryana) - Certified compliance monitoring report reg.

Ref: ECs no. i. J-11011/106/2012-IA-II(I) dated 16.08.2018, ii. J-11011/268/2014-IA-II(I) dated 22.02.2017, iii. J-11011/106/2012-IA-II(I) dated 23.05.2014, iv. J-11011/153/2004-IA II(I) dated 04.01.2005

Sir/Madam,

Your kind attention is drawn to the above mentioned subject & letter under reference. The said unit was visited on **13.04.2021** by the undersigned and the monitoring report (**Annexure-A**) was prepared with following observations:

- PP has not submitted the details of HW and solid waste generated at different sections of PNC unit. (*Sp. Condi. – iii*)
- PP has not submitted the copy of permission to utilize Western Yamuna Canal from concern regulatory authority. (*Sp. Condi. – vi*)
- PP has not submitted the details of process organic residue & spent carbon and boiler ash sent to the cement industries. (*Sp. Condi. – ix*)
- PP has not submitted the details of ETP sludge and process inorganic & evaporation salt disposed of to TSDF. (*Sp. Condi. – ix*)
- No continuous VOC emission monitoring facility and VOC emission monitoring data provided by PP. (*Sp. Condi. – xi, vi (EC-2014, 2015)*)
- PP has not submitted NOC from department of chief controller of explosive for storage of HW, water audit report, latest development details of green belt and year wise fund earmarked (capital & recurring cost)/ utilized for implementation of environment management plan & CER activities. (*Sp. Condi. – viii, xiii, xvi, xvii and Gen. Condi. – xii*)
- PP has not submitted the copy of odour management plan and its mitigation measures adopted at project site. (*Sp. Condi. – EC-2017 – xi*)
- PP has not submitted the sulphur balance data having information of sulphur input & output and by products. (*Sp. Condi. – viii (EC-2014)*)
- PP has not submitted the latest noise quality level monitoring data of project area. (*Gen. Condi. – v*)
- PP has not provided link of company website where copy of EC and six monthly compliance reports has been uploaded for public awareness. (*Gen. Condi. – xiv*)
- PP has not submitted copy of environmental statement of form-V and news paper advertisements of EC. (*Gen. Condi. – xv & xvi*)

P.F.O.

उपरोक्त गैर-अनुपालना की जानकारी PP को दिनांक 28.04.2021 के पत्र द्वारा Action Taken Report (ATR) प्रस्तुत करने हेतु दी जा चुकी है ताकि वह विस्तृत मानीटरिंग रिपोर्ट को SEIAA, Haryana को अग्रेषित करने से पहले गैर-अनुपालना (non-compliance) बिंदुओं पर अपनी टिप्पणी प्रस्तुत कर सके (संलग्नक-B)।

PP ने सभी गैर-अनुपालना (non-compliance) बिंदुओं पर अपनी प्रतिक्रिया दिनांक 07.05.2021 के ईमेल से प्रस्तुत किया है, जो मूल स्वरूप में अग्रेषित है (संलग्नक-C)।

संलग्नक: उपरोक्तानुसार।

भक्तिय,
 10/05/2021

(डॉ. के. के. गर्ग)

उप निदेशक / वैज्ञानिक-सी

Copy to:

श्री आशीष भूषण (जी.एम.) (HSE), मैसर्स इंडियन ऑयल कॉर्पोरेशन लि., प्रोजेक्ट बिल्डिंग पानीपत रिफाइनरी, पानीपत-132140, हरियाणा. ईमेल: panipatrefinery@indianoil.in; tiwariak2@indianoil.in; prpc_hse@indianoil.in

These observations were communicated to the PP vide a letter dated 28.04.2021 (Annexure-B) to provide him an opportunity for submitting their comments on the partially complied/non-complied points prior to forwarding this report to SEIAA, Haryana.

The PP has submitted their response against the partially complied/non-complied points vide email dated 07.05.2021, which is being forwarded in original without further evaluation. (Annexure-C)

Encl: As stated.

Sincerely,



(Dr. K. K. Garg)
Deputy Director/Scientist 'C'

Copy to:

Shri Ashish Bhushan, GM (HSE), M/s Indian Oil Corporation Ltd., Project Building Panipat Refinery, Panipat - 132140, Haryana. E-mail: panipatrefinery@indianoil.in; tiwariak2@indianoil.in; prpc_hse@indianoil.in

Ministry of Environment, Forest and Climate Change
Integrated Regional Office, Chandigarh
Monitoring the Implementation of Environmental Safeguards
Monitoring Report
PART – I: DATA SHEET

1.	Project Type	5-C: Industry (petrochemical complexes)						
2.	Name of the Project	Naphtha Cracker Complex at Panipat Refinery by M/s IOCL						
3.	Clearance letter (s)/ O.M No. & dates	i. J-11011/153/2004-IA-II(I) dated 04.01.2005 ii. J-11011/106/2012-IA-II(I) dated 23.05.2014 iii. J-11011/268/2014-IA-II(I) dated 22.02.2017 iv. J-11011/106/2012-IA-II(I) dated 16.08.2018						
4.	Location a. District (s) b. State (s) c. Latitudes/Longitudes	Panipat Haryana 29°26' 50.95"N / 76°52' 3.00"E						
5.	Address for correspondence a. Address of Concerned Project CE (with Pin Code/ Tel No./ Telex/Fax/E-mail address)	Shri Ashish Bhushan, GM (HSE) M/s Indian Oil Corporation Ltd., Project Building Panipat Refinery, Panipat - 132140, Haryana E-mail: panipatrefinery@indianoil.in; tiwariak2@indianoil.in prpc_hse@indianoil.in						
6.	Salient features a. Of the project b. Of the EMP	Expansion of production of polypropylene <table border="1"> <thead> <tr> <th>Product</th><th>Production as per EC dated 16.08.2018</th><th>Proposed expansion</th></tr> </thead> <tbody> <tr> <td>Polypropylene (PP)</td><td>780 KTA</td><td>Additional 450 KTA</td></tr> </tbody> </table> Air quality monitoring, water quality monitoring, ETP, Noise level monitoring, occupational health and safety etc.	Product	Production as per EC dated 16.08.2018	Proposed expansion	Polypropylene (PP)	780 KTA	Additional 450 KTA
Product	Production as per EC dated 16.08.2018	Proposed expansion						
Polypropylene (PP)	780 KTA	Additional 450 KTA						
7.	Break-up of the project area a. Submergence area: Forest and Non forest b. Others	The project set up in Baljatan village in 756 acres land. Additional 254 acres has been acquired to the East of the project site, for truck parking area, collection of rain-water, administrative building etc. Balance area is being used as temporary fabrication yard for Naphtha Crackers Project. Another 187 acres land has been acquired to the North West of the project site, which would be used primarily for shifting of the existing Petcoke yard from the Naphtha Cracker project site, strengthening of the green belt etc. About 306 ha. land is required for NCU.						

8.	Breakup of the project affected population with enumeration of those losing houses/dwelling units only agricultural land only both dwelling units & agricultural land & landless laborers/artisans: a. SC, ST/Adivasi b. Others (Please indicate whether these figures are based on any scientific and systematic survey carried out or only provisional figures, if a survey is carried out give details & year of survey)	NA
9.	Financial details: a. Project cost as originally planned and subsequent revised estimates and the year of price reference b. Allocation made for EMP with item wise and year wise break-up c. BC ratio/IRR and the year of assessment d. Whether © includes the cost of EM as shown in the above e. Actual expend. incurred on project so far f. Actual expenditure incurred on EMP so far	Original: Rs. 6,300 Crs (Oct' 03 basis) Revised: Rs. 14,439 Crs (Nov' 06) Over Rs. 225 Crs was provided 23.3% (Original) (Revised based on Nov' 06 estimate 20.2%) Yes Rs. 13,332.18 Crs Not latest details submitted by PP
10.	Forest land requirement a. The status of approval for diversion of forest land for non-forestry use b. The status of clearing felling c. The status of CA, if any d. Comments on the viability & sustainability of CA program in the light of actual field experience so far	NA
11.	The status of clear felling in the non forest areas	NA
12.	Status of construction: (actual and/or planned) a. Date of commencement b. Date of completion	No details submitted by PP
13.	Reasons for the delay, if project is yet to start	NA
14.	Dates of site visits a. Date of previous site visit: b. Date of present site visit:	23.12.2017 13.04.2021
15.	Details of correspondence with project Authorities for obtaining act on plans/information on status of compliance to safeguards other than the routine letters for logistic support for site visits). (The first monitoring report may contain the details of all the letters issued so far, but the later reports may cover only the letter issued subsequently)	Submitted June & Dec-2020 SMCR with analytical monitoring data Submitted June-2019 SMCR with analytical monitoring data Submitted Dec-2018 SMCR without analytical data

PART – II & III
DESCRIPTIVE REPORT ON STATUS OF COMPLIANCE TO
CONDITIONS OF ENVIRONMENTAL CLEARANCE AND ENVIRONMENTAL MANAGEMENT
EC. No. J-11011/153/2004-IA II(I) dated 04.01.2005; J-11011/106/2012-IA-II(I) dated 23.05.2014; J-11011/268/2014-IA.II(I) dated 22.02.2017; J-11011/106/2012-IA.II(I) dated 16.08.2018

SPECIFIC CONDITIONS: Compliance status of latest EC obtained on 16.08.2018 is given below:		
i.	Consent to Establish/Operate for the project shall be obtained from the SPCB as required under the Air (Prevention and Control of Pollution), Act, 1981 and Water (Prevention and Control of Pollution) Act, 1974.	Being complied with. (EC:2018 & 2017) PP has obtained Consent to Operate from HSPCB vide letter no. HSPCB/Consent/: 313105817PITCTO3530699 dated 14.05.2017 and valid up to 30.09.2021.
ii.	As already committed by the PP, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.	Being complied with. (EC: 2018 & 2005) - No illegal discharge of waste/treated water was observed outside the boundary of the project. - PP has installed 01 ETP for treatment of effluent stream generated at PNC plant. - PP has also established Sampling panel for analyzer filtration unit. (Photo 3)
iii.	Necessary authorization required under the Hazardous and Other wastes (management and trans-boundary movement) rules, 2016 and SWM rules, 2016 shall be obtained and the provisions contained in the rules shall be strictly adhere to.	Partially complied with. (EC: 2018, 2014 & 2005) - PP has obtained authorization under Hazardous and Other Wastes (Management & Trans-boundry Movement) Rules, 2016 from HSPCB vide letter no. HWM/PIT/2021/8487309 dated 19.04.2021 for generation, collection, storage, treatment, disposal on the premises situated at village Baljatan Tehsil Matlauda, Panipat Haryana. - Disposal of solid waste has been observed on secure landfill site located within project area. PP has informed that landfill site is still 60% empty. Same has been observed during site visit. PP has also not submitted the details of hazardous wastes and solid wastes generating at PNC unit from various sections.
iv.	National emission standards for organic chemicals manufacturing industry issued by the ministry vide G.S.R. 608(e) dated 21.07.2010 and amended from time to time shall be followed.	Being complied with. (EC: 2018 & 2014) - PP has installed AAQM stations at different locations of project site for online monitoring. - PP has also submitted AAQM data at different locations of project site along with Dec-2020 SMCR and reported the data within permissible limit.
v.	To control source and the fugitive emissions, suitable pollution control devices	Being complied with. (EC: 2018, 2017, 2014 & 2005)

	shall be installed with different stacks to meet the prescribed norms and/or the NAAQS. The gaseous emissions shall be dispersed through stacks of adequate height as per CPCB/SPCB guide lines.	- PP has informed that they have provided storage tanks as per the approved safety rules. Adequate measures like vapor recovery system, regular maintenance etc. have been taken. - PP has installed AAQM stations at different locations of project site for online monitoring. The concentration of the various emissions could be verified online by CPCB. - PP has also submitted AAQM data at different locations of project site along with Dec-2020 SMCR and reported the data within permissible limit.
vi.	Total fresh water requirement shall not exceed 47955 cum/d to be met from Western Yamuna Canal. Necessary permission in this regard shall be obtained from the concern regulatory authority.	Partially complied with. (EC: 2018, 2017 & 2014) PP has informed that they are using Western Yamuna Canal water at project site. Same has been observed during site visit. However, PP has not submitted the copy of permission concern regulatory authority to utilize the same. (Photo 1)
vii.	Process effluent/any waste water shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.	Assured to comply. PP has assured for not to mix any process effluent/waste water stream with storm water and also assured to pass storm water drain through guard pond.
viii.	Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm, and solvent transfer to be done through pumps.	Partially complied with. (EC: 2018, 2017, 2014 & 2005) - PP has provided closed storage tanks for storages of hazardous chemicals. - PP has informed that they have provided flame arresters on tank farm and pump facility for transfer of solvents. - PP has obtained authorization under Hazardous and Other Wastes (Management & Trans-boundry Movement) Rules, 2016 from HSPCB vide letter no. HWM/PIT/2021/8487309 dated 19.04.2021 for generation, collection, storage, treatment, disposal on the premises situated at village Baljatan Tehsil Matlauda, Panipat Haryana. PP has not submitted copy of NOC from chief controller of explosive to store hazardous waste at project site.
ix.	Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt	Not complied with. PP has not submitted the details of process organic residue, spent carbon

	shall be disposed off to the TSDF. The ash from boiler shall be sold to brick manufacturers/cement industry.	and boiler ash sent to the cement industries. • PP has not submitted the details of ETP sludge, process inorganic & evaporation salt disposed of to TSDF.
x.	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.	Assured to comply. (EC: 2018 & 2017) • PP has assured to follow the all guidelines of Hazardous chemicals (MSIHC) Rules, 1989 made for manufacture, storage and import of Hazardous chemicals. • PP has also assured to follow Motor Vehicle Act (MVA), 1989 for transportation of HW. • PP has obtained authorization under Hazardous and Other Wastes (Management & Trans-boundary Movement) Rules, 2016 from HSPCB vide letter no. HWM/PIT/2021/8487309 dated 19.04.2021 for generation, collection, storage, treatment, disposal on the premises situated at village Baljatan Tehsil Matlauda, Panipat Haryana.
xi.	Regular VOC monitoring to be done at vulnerable points.	Not complied with. (EC: 2018, 2017, 2014 & 2005) • No VOC emission monitoring facility was observed at project site during the visit. • PP has also not submitted the VOC emission monitoring data at PNC project area.
xii.	The oily sludge shall be subjected to melting pit for oil recovery and the residue shall be bio-remediated. The sludge shall be stored in HDPE lined pit with proper leachate collection system.	Noted. (EC: 2018 & 2017) • PP has submitted in Dec-2020 SMCR that condition is not applicable for them. However, not submitted any explanation for the same.
xiii.	Comprehensive water audit to be conducted on annual basis and report to the concerned Regional Office of MEF&CC Outcome from the report to be implemented for conservation scheme.	Partially complied with. (EC: 2018 & 2017) • PP has submitted 1998 m ³ /hr water requirement in water balance sheet submitted for PNC along with vide email dated 31.03.2021. However, PP has not submitted the copy water audit report of PNC unit.
xiv.	Oil catchers/oil traps shall be provided at all possible locations in rain/ storm water drainage system inside the factory premises.	Assured to comply. (EC: 2018, 2017 & 2014) • PP has assured to provide rain/ storm water drainage system at all possible locations of inside the factory premises.
xv.	The company shall undertake waste minimization measures as below.	Assured to comply. (EC: 2018 & 2014) • PP has assured to control of quantities of

	a) Metering and control of quantities of active ingredients to minimize waste. b) Reuse of by-products from the process material 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 vapour recovery system. f) Use of high pressure hoses for equipment clearing to reduce waste water generation.	active ingredients to minimize waste, reuse of by-products from the process material, use of automated filling to minimize spillage, use of close feed system into batch reactors, venting equipment through vapour recovery system and use of high pressure hoses for equipment clearing to reduce waste water generation.
xvi.	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 guidelines in consultation with the State Forest Department.	Partially complied with. (EC: 2018, 2017, 2014 & 2005) Adequate area of green belt has been observed around the project boundary. PP was informed during last visit that they have covered around 574 ha area of project through green cover. However, not provided latest details of green belt development. (Photo 2)
xvii.	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.	Partially complied with. (EC: 2018, 2017 & 2014) PP has submitted expenditure of 461.02 lacks during year 2017-18 in vide email dated 31.03.2021. However, PP has not submitted the year wise fund allotted for CER activities and item wise expenditure details.
xviii.	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.	Being complied with. (EC: 2018, 2017 & 2014) PP has informed that they have provided the stacks of DG sets at adequate height.
xix.	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.	Assured to comply. (EC: 2018, 2017 & 2014) PP has assured to provide arrangement for protection of possible fire hazards during manufacturing process in material handling firefighting system.
xx.	Continuous online (24x7) 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	Being complied with. (EC: 2018, 2017 & 2014) PP has installed online (24x7) monitoring system for stack emissions at project site.

	in the channel/drain carrying effluent within the premises. In case of the treated effluent to be utilized for irrigation/gardening, real time monitoring system shall be installed at the ETP outlet.	
xxi.	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.	Being complied with. (EC: 2018, 2017 & 2005) PP has informed that they are regularly conducting Occupational health surveillance for all workers working at project site.
EC: 2017		
i.	The ministry vide G.S.R 608(E) dated 21.07.2010 and amended time to time has prescribed effluent and emission standards that shall be complied by the unit.	Being complied with. - PP has submitted ETP outlet water quality monitoring data along with Dec-2020 SMCR and reported the data within permissible limit. - PP has also established Sampling panel for analyzer filtration unit. (Photo 3)
iv.	SO ₂ emissions after expansion from the plant shall not exceed 138 kg/hr and further efforts 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.	Being complied with. (EC: 2017, 2014 & 2005) PP has submitted SO₂ emission monitoring data along with Dec-2020 SMCR and reported the data within prescribed limit.
ix.	The marginal waste water from SRU & ERU plants shall be sent to ETP/RO plant. Effluent stream shall be treated in the ETP comprising primary, secondary and tertiary treatment facility. As proposed RO plant shall be employed to treat 140 m ³ /hr.	Being complied with. PP has provided ETP to treat SRU and ERU plant waste water. PP has also provided RO treatment facility for treatment of waste water in desired quantity.
xi.	Adequate odour management plan and its mitigation measure to be implemented on priority.	Not complied with. PP has not submitted the details of odour management plan and its mitigation measures adopted at project site.
EC: 2014		
i	All the specific conditions and general conditions specified in the earlier environmental clearance letters accorded vide. Ministry's letter nos. J-11011/27 /91-IA-II (I) dated 16.07.1992, J-11011/60/2000-IA-II(I) dated 09.04.2001, J-11011/52/2000-IA-II dated 30.01.2001, J-11011/9/2001-IA-II (I) dated 06.12.2001, J-11011/153/2004-IA-II dated 04.01.2005 and J-11011/7/2004-IA-II (I) dated 9.08.2004 shall be complied with.	Assured to comply. PP has assured for compliance of environment clearance conditions obtained by them.
vi	Continuous monitoring of VOCs at all	Not complied with. (EC: 2014 & 2005)

	important places/areas shall be ensured. When monitoring results indicate above the permissible limits, effective measures shall be taken immediately.	- No continuous monitoring of VOCs emissions was observed at project site during the visit. - PP has also not submitted the latest VOCs emission monitoring data of plant area.
viii	Record of sulphur balance shall be maintained in the refinery as part of environmental data on regular basis. The basis component of sulphur balance include sulphur input through feed (sulphur content in crude oil), sulphur output from refinery through products, by products (elemental sulphur), atmospheric emission etc.	Not complied with. PP has not submitted the sulphur balance data having information of sulphur input & output and by products.
EC: 2005		
v	M/s IOCL shall adopt Leak Detection And Repair (LDAR) programme for quantification and control of fugitive emissions.	Being Complied: PP has informed that they have adopted LDAR system at project site.
viii	The waste water effluent from the PNC should not exceed 750 m ³ /hr. The waste water shall be segregated in different streams at the source. The treated effluent should comply with the standards stipulated by HSPCB/CPCB for discharge on land for irrigation. The treated effluent should be used for cooling service, greenbelt, dust suppression and firewater. As per the commitment given, there should be zero effluent discharge due to the proposed project. The company should ensure that there will be no discharge of treated effluent into Thirana drain.	Being Complied: PA has submitted that treated effluent of stipulated quality was being recycled in DMRO and reused for cooling service, greenbelt, dust suppression and firewater. It was noted that normally less than 1813 m³/hr raw water from WJC canal was being consumed in PNC.
GENERAL CONDITIONS: EC: 2018		
i.	The PA must strictly adhere to the stipulations made by HSPCB and State Government.	Being complied with. (EC: 2018, 2017, 2014 & 2005) PP has obtained Consent to Operate from HSPCB vide letter no. HSPCB/Consent/: 313105817PITCTO3530699 dated 14.05.2017 and valid up to 30.09.2021.
ii.	No further expansion or modification of the plant should be carried out without prior approval of MOEF. 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.	Being complied with. (EC: 2018, 2017, 2014 & 2005) No further expansion or modification of plant was observed during the site visit. Same has been informed by PP during site visit.

iii.	The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one station each is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	Being complied with. (EC: 2018, 2017, 2014 & 2005) • PP has provided AAQM stations at different locations of project site. • PP has informed that they have installed AAQM stations in consultation with CPCB.
iv.	The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16 November 2009 shall be followed.	Being complied with. (EC: 2018, 2017, 2014 & 2005) • PP has provided AAQM stations at different locations of project site. • PP has informed that they have installed AAQM stations in consultation with CPCB.
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 levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz 75 dBA (day time) and 70 dBA (night time).	Not complied with. (EC: 2018, 2017, 2014 & 2005) • PP has not submitted the latest noise level monitoring data of plant area.
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.	Being complied with. (EC: 2018 & 2017) • PP has provided RWH pits to harvest rain water at project site.
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.	Being complied with. (EC: 2018 & 2017) • PP has informed that they are providing training for employees on safety and health aspects of chemicals handling on regular basis and also conducting periodical medical examinations for all employees.
viii.	The company shall also comply with all the environmental 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.	Assured to comply. (EC: 2018, 2017, 2014 & 2005) • PP has assured to provide all environmental protection measures and safeguards proposed in the documents submitted to the Ministry.
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	Assured to comply. (EC: 2018 & 2017) • PP has assured to undertake all relevant measures for improving the socio-economic conditions of the surrounding

	local villages and administration.	area by involving local villages and administration.
x.	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.	Assured to comply. (EC: 2018 & 2017) PP has assured to undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.
xi.	A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	Being complied with. (EC: 2018, 2017 & 2014) PP has established separate Environmental Management Cell equipped with full-fledged laboratory at project site for compliance of the same.
xii.	The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/pollution control measures shall not be diverted for any other purpose.	Not complied with. (EC: 2018, 2017, 2014 & 2005) PP has not submitted the year wise details of fund earmarked towards capital cost & recurring cost and year wise fund utilized to implement the conditions stipulated by the MoEF.
xiii.	A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, ZilaParishad/ Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal.	Noted. (EC: 2018 & 2017) PP has informed that they have sent the same to concern local authorities for information.
xiv.	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 Environmental Clearance and six monthly compliance status reports shall be posted on the website of the company.	Partially complied with. (EC: 2018, 2017, 2014 & 2005) - PP has submitted six month compliance reports of the project regularly to this office. - PP has not provided the link of company website where copy of six monthly compliance reports and EC letter has been uploaded for public awareness.
xv.	The environmental 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	Not complied with. (EC: 2018, 2017 & 2014) PP has not submitted copy of environmental statement of form-V.

	website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of MoEF&CC by e-mail.	
xvi.	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://envfor.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 the concerned Regional Office of the Ministry.	Not complied with. (EC: 2018, 2017, 2014 & 2005) • PP has not provided the copy of news paper advertisements regarding news of receiving EC.
xvii.	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.	Being complied with. (EC: 2018, 2017, 2014 & 2005) • Final approval of the project has been accorded by IOCL board of directors in their meeting on 22.12.2006.

Concluding Remarks:

M/s Indian oil corporation limited has obtained environment clearance from Ministry vide letters no. and dated J-11011/153/2004-IA II(I) dated 04.01.2005, J-11011/106/2012-IA-II(I) dated 23.05.2014, J-11011/268/2014-IA.II(I) dated 22.02.2017, J-11011/106/2012-IA.II(I) dated 16.08.2018 for production of mono-ethylene glycol, HDPE & Polypropylene unit. at Panipat, Haryana.

PP has submitted proposed expansion of production of Polypropylene (PP) of additional 450 KTA to the present capacity. (Photo 4)

1. Chronology of events: PP has requested to Regional Office of the Ministry for issuance of certification vide letter dated 08.03.2021. The Regional Office has requested to submit information w.r.t. issuance of certification in vide letter dated 12.03.2021. Requisite information was submitted by PP vide letter received dated 31.03.2021.

2. Implementation of Conditions:

- PP has not submitted the details of HW and solid waste generated at different sections of PNC unit. (*Sp. Condi. – iii*)
- PP has not submitted the copy of permission to utilize Western Yamuna Canal from concern regulatory authority. (*Sp. Condi. – vi*)
- PP has not submitted the details of process organic residue & spent carbon and boiler ash sent to the cement industries. (*Sp. Condi. – ix*)
- PP has not submitted the details of ETP sludge and process inorganic & evaporation salt disposed of to TSDF. (*Sp. Condi. – ix*)

- v. No continuous VOC emission monitoring facility and VOC emission monitoring data provided by PP. (*Sp. Condi. – xi, vi (EC-2014, 2015)*)
- vi. PP has not submitted NOC from department of chief controller of explosive for storage of HW, water audit report, latest development details of green belt and year wise fund earmarked (capital & recurring cost)/ utilized for implementation of environment management plan & CER activities. (*Sp. Condi. – viii, xiii, xvi, xvii and Gen. Condi. – xii*)
- vii. PP has not submitted the copy of odour management plan and its mitigation measures adopted at project site. (*Sp. Condi. – EC-2017 – xi*)
- viii. PP has not submitted the sulphur balance data having information of sulphur input & output and by products. (*Sp. Condi. – viii (EC-2014)*)
- ix. PP has not submitted the latest noise quality level monitoring data of project area. (*Gen. Condi. – v*)
- x. PP has not provided link of company website where copy of EC and six monthly compliance reports has been uploaded for public awareness. (*Gen. Condi. – xiv*)
- xi. PP has not submitted copy of environmental statement of form-V and news paper advertisements of EC. (*Gen. Condi. – xv & xvi*)
3. **Housekeeping:** Overall it was found satisfactory.
4. **Review w.r.t. MOEF's letter dated 16.08.2012:** The report was prepared after site visit on 13.04.2021.
5. **Uploading of compliance on web site:** Not provided By PP.
6. **With regards to issuance of show cause/closure notices:**

Case no.	Details	Present status
OA no. 67-2020 dtd. Registered On 12.03.2020 (NGT)	Alleging unscientific disposal of spent catalyst (oxide) which is under the category of hazardous waste within the range of item no. 1.1 to 4.5 of the Schedule I of the Hazardous and other Waste Rules, 2016 by Panipat Refinery. The violation takes place in selling, handling, storing and transporting the said waste illegally.	Disposed of on 09.04.2021 as per status reflecting on NGT website and information provided by PP

K. K. Garg
10/05/2021

Dr. K. K. Garg
(Deputy Director/Scientist 'C')

Photos of project site



Photo 4: Part of proposed expansion site of Polypropylene plant



Photo 2: Part of green belt area developed at project area

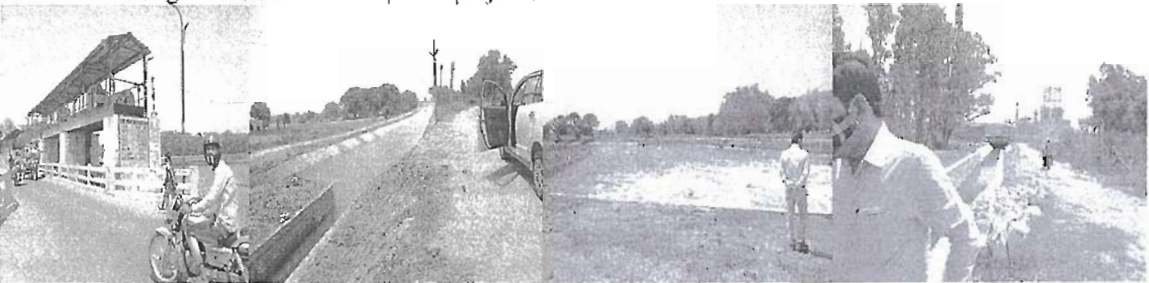


Photo 1: Utilization of Canal water for the plant activities

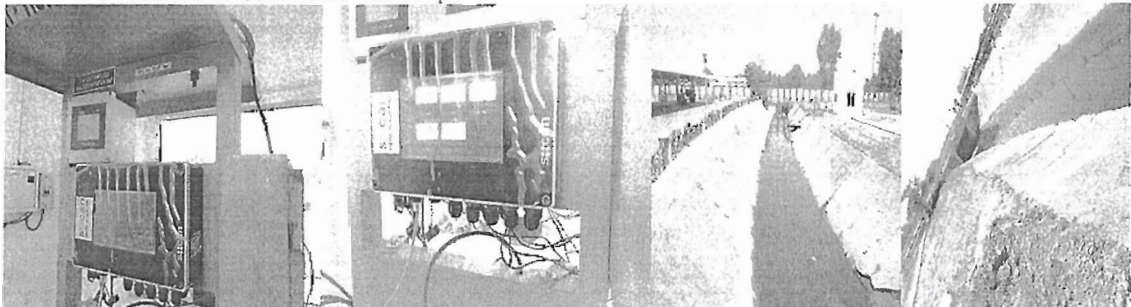


Photo 3: Sampling panel for analyzer filtration unit ETP discharge water.



भारत सरकार
GOVERNMENT OF INDIA

पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय

MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
एकीकृत क्षेत्रीय कार्यालय, चंडीगढ़ / Integrated Regional Office, Chandigarh



F. No.: 05-01/2018-IRO/ 317

Dated: 28.04.2021

To

Shri Ashish Bhushan, GM (HSE)
M/s Indian Oil Corporation Ltd.,
Project Building Panipat Refinery, Panipat - 132140, Haryana
E-mail: panipatrefinery@indianoil.in; tiwariak2@indianoil.in; prpc_hse@indianoil.in

Sub.: Capacity expansion of Naphtha Cracker, Mono Ethylene Glycol, HDPE & Polypropylene units and setting up catalyst manufacturing unit by M/s IOCL at Panipat Refinery & Petrochemical Complex, Panipat (Haryana) - Certified compliance monitoring report reg.

Ref: 1. ECs no. i. J-11011/106/2012-IA.II(I) dated 16.08.2018, ii. J-11011/268/2014-IA.II(I) dated 22.02.2017, iii. J-11011/106/2012-IA-II(I) dated 23.05.2014, iv. J-11011/153/2004-IA II(I) dated 04.01.2005
2. Your letter dated 08.03.2021.

Sir,

The undersigned has visited the above project located at Panipat, Haryana on 13.04.2021 and prepared the monitoring report to be submitted to the Ministry with following non-compliances:

- PP has not submitted the details of HW and solid waste generated at different sections of PNC unit. (Sp. Condi. - iii)
- PP has not submitted the copy of permission to utilize Western Yamuna Canal from concern regulatory authority. (Sp. Condi. - vi)
- PP has not submitted the details of process organic residue & spent carbon and boiler ash sent to the cement industries. (Sp. Condi. - ix)
- PP has not submitted the details of ETP sludge and process inorganic & evaporation salt disposed of to TSDF. (Sp. Condi. - ix)
- No continuous VOC emission monitoring facility and VOC emission monitoring data provided by PP. (Sp. Condi. - xi, vi (EC-2014, 2015))
- PP has not submitted NOC from department of chief controller of explosive for storage of HW, water audit report, latest development details of green belt and year wise fund earmarked (capital & recurring cost)/ utilized for implementation of environment management plan & CER activities. (Sp. Condi. - viii, xiii, xvi, xvii and Gen. Condi. - xii)
- PP has not submitted the copy of odour management plan and its mitigation measures adopted at project site. (Sp. Condi. - EC-2017 - xi)
- PP has not submitted the sulphur balance data having information of sulphur input & output and by products. (Sp. Condi. - viii (EC-2014))
- PP has not submitted the latest noise quality level monitoring data of project area. (Gen. Condi. - v)
- PP has not provided link of company website where copy of EC and six monthly compliance reports has been uploaded for public awareness. (Gen. Condi. - xiv)
- PP has not submitted copy of environmental statement of form-V and news paper advertisements of EC. (Gen. Condi. - xv & xvi)

In view of above, you are, hereby, being given an opportunity to submit Action Taken Report of observed partial-compliances / non-compliances at earliest, preferably within two week from the date of issue of this letter, failing which the Monitoring Report of the project with above partial-compliances / non-compliances will be submitted to competent authority for further necessary action.

Sincerely,

(Signature)
28/04/2021

(Dr. K.K. Garg)

Deputy Director/Scientist-C



भारत सरकार
GOVERNMENT OF INDIA

पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
एकीकृत क्षेत्रीय कार्यालय, चंडीगढ़ / Integrated Regional Office, Chandigarh



F. No.: 05-01/2018-IRO/

317

Dated: 28.04.2021

सेवा में

श्री आशीष भूषण (जी.एम.) (HSE)

मैसर्स इंडियन ऑयल कॉर्पोरेशन लि.

प्रोजेक्ट बिल्डिंग पानीपत रिफाइनरी, पानीपत - 132140, हरियाणा

ईमेल: panipatrefinery@indianoil.in; tiwariak2@indianoil.in; prpc_hsc@indianoil.in

Sub.: Capacity expansion of Naphtha Cracker, Mono Ethylene Glycol, HDPE & Polypropylene units and setting up catalyst manufacturing unit by M/s IOCL at Panipat Refinery & Petrochemical Complex, Panipat (Haryana) - Certified compliance monitoring report reg.

Ref: 1. ई.सी. पत्र i. J-11011/106/2012-IA.II(I) dated 16.08.2018, ii. J-11011/268/2014-IA.II(I) dated 22.02.2017.

iii. J-11011/106/2012-IA-II(I) dated 23.05.2014, iv. J-11011/153/2004-IA II(I) dated 04.01.2005

2. आपका पत्र दिनांक 08.03.2021.

श्रीमान,

आपके उपरोक्त (2) पर वर्णित पत्र के सन्दर्भ में आपके संज्ञान में लाया जाता है कि उपरोक्त परियोजना का निरीक्षण जो कि पानीपत, हरियाणा में स्थित है, अधोहस्ताक्षरी द्वारा दिनांक 13.04.2021 को किया गया था। परियोजना की मातृद्वारा रिपोर्ट निम्नलिखित गैर-अनुपालना (non-compliance) बिन्दुओं के साथ तैयार की जा चुकी है:

- PP has not submitted the details of HW and solid waste generated at different sections of PNC unit. (Sp. Condi. - iii)
- PP has not submitted the copy of permission to utilize Western Yamuna Canal from concern regulatory authority. (Sp. Condi. - vi)
- PP has not submitted the details of process organic residue & spent carbon and boiler ash sent to the cement industries. (Sp. Condi. - ix)
- PP has not submitted the details of ETP sludge and process inorganic & evaporation salt disposed of to TSDF. (Sp. Condi. - ix)
- No continuous VOC emission monitoring facility and VOC emission monitoring data provided by PP. (Sp. Condi. - xi, vi (EC-2014, 2015))
- PP has not submitted NOC from department of chief controller of explosive for storage of HW, water audit report, latest development details of green belt and year wise fund earmarked (capital & recurring cost) utilized for implementation of environment management plan & CER activities. (Sp. Condi. - viii, xiii, xvi, xvii and Gen. Condi. - xii)
- PP has not submitted the copy of odour management plan and its mitigation measures adopted at project site. (Sp. Condi. - EC-2017 - xi)
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- PP has not submitted the latest noise quality level monitoring data of project area. (Gen. Condi. - v)
- PP has not provided link of company website where copy of EC and six monthly compliance reports has been uploaded for public awareness. (Gen. Condi. - xiv)
- PP has not submitted copy of environmental statement of form-V and news paper advertisements of EC. (Gen. Condi. - xv & xvi)

अतः आपको इस पत्र के जारी होने की तारीख के अधिकतम दो सप्ताह के भीतर उपरोक्त गैर-अनुपालनों (non-compliances) की Action Taken Report जमा करने का अवसर दिया जा रहा है। दिए गए समय में कार्रवाई रिपोर्ट जमा न करने के स्थिति में परियोजना की रिपोर्ट उपरोक्त आंशिक-अनुपालनों / गैर-अनुपालनों के साथ अग्रिम आवश्यक कार्रवाई हेतु सक्षम प्राधिकारी को प्रस्तुत कर दी जाएगी।

(अवधीय,
28/04/2021
(डॉ. के. के. गर्ग)
उप निदेशक / वैज्ञानिक-सी

बेज नं.24-25, सेक्टर-31ए, चंडीगढ़-160030 / Bays No.24-25, Sector-31A, Chandigarh-160030 दूरभाष/Tel
No: 0172-2638994 Fax No: 0172-2638135 Email: ecompliance-nro@gov.in; ronz.chd-mel@nic.in



इंडियन ऑयल कार्पोरेशन लिमिटेड

पानीपत रिफ़ाइनरी एवं पेट्रोकेमिकल कॉम्प्लेक्स

पानीपत, हरियाणा - 132140

Indian Oil Corporation Limited

Panipat Refinery & Petrochemical Complex

Panipat, Haryana - 132140

वेबसाइट: www.iocl.com; ई-मेल: prpc_hse@indianoil.in

दूरभाष : 0180-252 4001/0180-2578833



रिफ़ाइनरीज़ प्रभाग
Refineries Division

IOCL/PR/HSE/EC/PP

06.05.2021

To,
Integrated Regional Office,
Ministry of Environment Forest and Climate Change
Bays No. 24-25, Dakshin Marg
Sector 31-A, Chandigarh

Attention : Dr. K. K. Garg, Deputy Director/Scientist 'C'

Subject: Action Taken Report of Observations during Inspection visit on 13.04.2021 for Certification of EC Compliances in Context of Projects at Panipat Naphtha Cracker

Reference: 1. Your letter no. 5-01/2018-IRO/ 317 dated 28.04.2021
2. J-11011/106/2012-IA-II (I) dated 16.08.2018,
3. J-11011/106/2014-IA-II (I) dated 22.02.2017
4. J-11011/106/2012-IA-II(I) dated 23.05.2014
5. J-11011/153/2004-IA-II(I) dated 04.01.2005
6. Our letter no. IOCL/PR/HSE/EC/PP dated 08.03.2021

Sir,

This is in context to your letter referenced above.

The 'Action Taken Report' with compliances against each observation is enclosed along with the supporting documents for your kind perusal.

Thanking You,

Yours faithfully,

Ashish Bhushan
06/5/2021

(Ashish Bhushan)

General Manager (HSE)

For and on behalf of

Executive Director & Refinery Head,

PRPC

आशीष भूषण

Ashish Bhushan

महानिर्देशक (स्वास्थ्य, सुरक्षा एवं पर्यावरण)

General Manager (Health, Safety & Environment)

पानीपत रिफ़ाइनरी एवं पेट्रोकेमिकल कॉम्प्लेक्स (आई.ओ.सी.एल.)

Panipat Refinery & Petrochemical Complex (IOCL)

पानीपत, Panipat-132140

Enclosures:

As above

पंजीकृत कार्यालय : जी९- अली यावर जंग मार्ग, बांद्रा (पूर्व), मुंबई 400051, महाराष्ट्र (भारत)

Regd. Office: G-9, Ali Yavar Jung Marg, Bandra (East), Mumbai-400051, Maharashtra (India)

CIN - 23201 MH 1959 GOI 011388

Conditions to be Complied for Certified Compliance Monitoring Report from MoEFCC

SN.	Conditions to be complied as per MoEFCC	Reply
i.	Details of HZ waste and solid waste generated at different sections of PNC (Sp. iii, NCU Expansion EC-2018)	NCU Expansion, for which EC-2018 was granted, is under construction. Nevertheless, the HW authorization for the complex and latest submitted Form-4 are enclosed for kind information as <i>Annexure-1 & 2</i> .
ii.	Copy of permission to utilize Western Yamuna Canal from concern regulatory authority (Sp. vi, NCU Expansion EC-2018)	Permission is attached as <i>Annexure-3</i> .
iii.	Details of process organic residue & spent carbon and boiler ash sent to the cement industries. (Sp. ix, NCU expansion EC-2018)	NCU Expansion, for which EC-2018 was granted, is under construction. Regarding the PNC complex, Organic residue is processed in organic-waste convertor which produces the biogas utilized in canteen. Till date, there is no stock of spent carbon and boiler ash (only gas/liquid fuel is utilized).
iv.	Details of ETP sludge and process inorganic & evaporation salt disposed of to TSDF (Sp. ix, NCU expansion EC-2018)	NCU Expansion, for which EC-2018 was granted, is under construction. Nevertheless, the ETP sludge generated and bio-remediated from the existing running plants in FY20-21 was 847 MT. The sludge, after bioremediation, has been disposed in the captive secured land fill (SLF). Further, agreement has been signed with CHWTSDF operator of Haryana (M/s GEPIIL) (<i>Annexure-4</i>) for disposal of Hazardous Wastes, if any, that cannot be disposed as per the hierarchy of waste disposal methods.
v.	No continuous VOC emission monitoring facility and VOC emission monitoring data provided by PP (Sp. vi(Butene-1 EC-2014) Sp. xi, NCU Expansion EC-2018)	VOC recovery system is available in the Effluent treatment plant (PFD attached as <i>Annexure-5</i>). Leak Detection and Repair program is conducted by MoEFCC accredited external agency quarterly for VOC measurement as per statute (report attached as <i>Annexure-6</i>). Sensors for detection of HC leak are provided at strategic locations (Detectors list available in units is attached as <i>Annexure-7</i>).
vi.	NOC from department of chief controller of explosive for storage of HW, water audit report, latest development details of green belt and year wise fund earmarked (capital and recurring cost)	Construction approval/NOC from Chief Controller of Explosives (CCoE) for NCU expansion and ERU is enclosed as (<i>Annexure-8</i>). Licenses from to store CL2, CO, CO2, N2, Butadiene, Ethylene/C4 mix, Butene-1,

	utilized for implementation of environment management plan & CER activities (<i>Sp. viii, xiii, xvi, xvii and Gen.-xii, NCU Expansion EC-2018</i> <i>Gen.-xii, ERU EC 2017</i>)	Propylene and hydrocarbon are enclosed (<i>Annexure-9 a to i</i>). Detail of green belt is enclosed (<i>Annexure-10</i>). Detail of EMP utilized fund is enclosed (<i>Annexure-11</i>). Under CER, a school for especially-abled children is being constructed at an estimated cost of Rs. 3.48 Crores Water monitoring is being carried out and various conservation measures have been undertaken as attached in <i>Annexure-12</i> .
vii.	Copy of odour management plan and it mitigation measures adopted at project site (<i>Sp. xi, ERU EC 2017</i>)	Odour Management Plan with mitigation measures is enclosed. (<i>Annexure-13</i>)
viii.	Sulphur balance data having information of sulphur input & output and by products (<i>Sp. viii, Butene-1 EC 2014</i>)	The concerned project does not have any raw material having 'Sulphur'. The point pertains to Oil Refinery.
ix.	Latest noise quality level monitoring data of project area (<i>Gen. v, ERU EC 2017</i> <i>Gen. v, NCU Expansion 2018</i>)	The data for complex is already submitted vide the EC compliance report. The same is enclosed again for convenience. (<i>Annexure-14</i>)
x.	Link of company website where of copy EC and six-monthly compliance reports has been uploaded for public awareness (<i>Gen. xiv, ERU EC 2017</i> <i>Gen. xiv, NCU Expansion 2018</i>)	Website link is: https://iocl.com/Talktous/SNotices.aspx
xi.	Copy of environmental statement of form-V and news paper advertisement of EC. (<i>Gen. xv-xvi, ERU EC 2017</i> <i>Gen. xv-xvi, NCU Expansion 2018</i>)	Environment statement of Form-V is enclosed(<i>Annexure-15</i>) NCU Expansion EC advertisement is enclosed(<i>Annexure-16</i>)

F. No. J-11011/106/2012-IA-II(I)
Government of India
Ministry of Environment, Forest and Climate Change
(IA- II Section)

Indira Paryavaran Bhawan
Jorbagh Road, New Delhi - 3

Dated: 16th August, 2018

To

M/s Indian Oil Corporation Limited
Panipat Refinery & Petrochemical Complex
Panipat (Haryana)

Sub: Capacity expansion of Naphtha Cracker, Mono Ethylene Glycol, HDPE & Polypropylene units and setting up Catalyst Manufacturing Unit by M/s Indian Oil Corporation Limited at Panipat Refinery & Petrochemical Complex, Panipat (Haryana) - Environmental Clearance - reg.

Sir,

This has reference to your proposal No. IA/HR/IND2/73327/2016 dated 28th May 2018, submitting the EIA/EMP report on the above subject matter.

2. The Ministry of Environment, Forest and Climate Change has examined the proposal for environmental clearance to the project for capacity expansion of Naphtha Cracker, Mono Ethylene Glycol (MEG), High Density Polyethylene (HDPE) & Polypropylene (PP) units and setting up Catalyst Manufacturing Unit of capacity 1500 MTPA (500 MTPA FCC additives and 1000 MTPA DHDS/DHDT catalyst) by M/s Indian Oil Corporation Limited at the existing Panipat Refinery & Petrochemical Complex, Panipat (Haryana). The project involves expansion of lower hydrocarbons, mainly Ethylene from 800 KTA to 947 KTA, Mono Ethylene Glycol from 300 to 425 KTA, HDPE from 300 KTA to 351 KTA and Polypropylene from 600 to 780 KTA.

3. Total land area is 800 ha. Green belt has been developed in an area of 273 ha i.e. covering 34% of total area of the project. The estimated project cost is Rs.1500 crore. Additional manpower required for the project is 15 nos.

4. There are no National parks, Wildlife sanctuaries, Biosphere reserves, Tiger/Elephant reserves, Wildlife corridors, rivers etc. within 10 km from the project site.

5. The details of existing and proposed facilities are as under:-

S.No	Facilities	Existing	Total after expansion	Remarks
1	NCU (In terms of Ethylene)	800 KTA	947 KTA	Revamp
2	MEG (In terms of product)	300 KTA	425 KTA	Revamp
3	HDPE (In terms of product)	300 KTA	351 KTA	Revamp
4	PP (In terms of product)	600 KTA	780 KTA	Revamp
5	Catalyst Manufacturing	-	1500 KTA	New



6. Total water requirement will be increased from 43512 cum/day to 47955 cum/day, proposed to be met from Western Yamuna Canal. The project proponent has obtained permission from the concerned regulatory authority (Irrigation Department, Government of Haryana) for drawl of 5199 cum/hr of canal water (for Petro-chemical complex), which will cater to the increased water demand of nearly 185 cum/hr due to the proposed expansion project.

Effluent generation of 180 cum/hr shall be increased to 188.3 cum/hr, which will be sent for treatment to the existing ETP of capacity 200 cum/hr. There will be no discharge of treated/untreated waste water from the unit, and thus ensuring Zero Liquid Discharge.

Power requirement will be 7.6 MW, which will be met through existing captive power plant having capacity 235 MW (current use@ 140MW). No additional boiler will be installed.

For the present, SO₂ emission load is restricted to 138 kg/hr as mentioned in the environmental clearance dated 22nd February, 2017 for the project at Petro-chemical Complex. There will be marginal increase due to the proposed expansion.

7. The project/activity is covered under category A of item 5 (c) 'Petro-chemical complexes (industries based on processing of petroleum fractions & natural gas and/or reforming to aromatics' of the Schedule to the Environment Impact Assessment Notification, 2006 and requires appraisal at central level by the sectoral Expert Appraisal Committee (EAC) in the Ministry.

8. The terms of reference (ToR) for the project was granted on 15th March, 2017. Public hearing was exempted as per the provisions contained in para 7(ii) of the EIA, Notification 2006.

9. The proposal for environmental clearance was placed before the EAC (Industry-2) in its meeting held on 25-27 June, 2018 in the Ministry. The project proponent and their consultant M/s ABC Techno Labs India Private Limited presented the EIA/EMP report as per the ToR. The Committee found the EIA/EMP report satisfactory and in consonance with the ToR, and recommended the proposal for environmental clearance with certain conditions.

10. Based on the proposal submitted by the project proponent and recommendations of the EAC (Industry-2), the Ministry of Environment, Forest and Climate Change hereby accords environmental clearance to the project for **capacity expansion of Naphtha Cracker, Mono Ethylene Glycol, HDPE & Polypropylene Units and setting up Catalyst Manufacturing Unit of capacity 1500 MTPA (500 MTPA FCC additives and 1000 MTPA DHDS/DHDT catalyst)** by M/s Indian Oil Corporation Limited at Panipat Refinery & Petrochemical Complex, Panipat (Haryana), under the provisions of the EIA Notification, 2006, read with subsequent amendments therein, subject to compliance of the terms and conditions as environmental safeguards, as per Annexure.



11. The Ministry reserves the right to stipulate additional conditions, if found necessary at subsequent stages and the project proponent shall implement all the said conditions in a time bound manner. The Ministry may revoke or suspend the environmental clearance, if implementation of any of the above conditions is not found satisfactory.


16/8/2018
(S. K. Srivastava)
Scientist E

Copy to:-

1. The Additional PCCF(C), MoEF&CC, Regional Office (NZ), Bays No. 24-25, Sector 31 A, Dakshin Marg, Chandigarh - 30
2. The Secretary, Department of Environment, Government of Haryana, SCO 1-2-3, Sector 17 (D), 2nd Floor, Chandigarh
3. The Member Secretary, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 32
4. The Member Secretary, Haryana State Pollution Control Board, C-11, Sector-6, Panchkula - 9 (Haryana)
5. Guard File/Monitoring File/Website/Record File


16/8/2018
(S. K. Srivastava)
Scientist E

Annexure

Environmental Clearance to the project for capacity expansion of Naphtha Cracker, Mono Ethylene Glycol, HDPE & Polypropylene units and setting up Catalyst Manufacturing Unit by M/s Indian Oil Corporation Limited at Panipat Refinery & Petrochemical Complex, Panipat (Haryana)

[F. No. J-11011/106/2012-IA-II(I); Proposal No. IA/HR/IND2/73327/2016 dated 28th May 2018]

TERMS AND CONDITIONS

- (i) 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.
- (ii) As already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.
- (iii) 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 the Rules shall be strictly adhered to.
- (iv) National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G.S.R. 608(E) dated 21st July, 2010 and amended from time to time shall be followed.
- (v) To control source and the fugitive emissions, suitable pollution control devices shall be installed with different stacks to meet the prescribed norms and/or the NAAQS. The gaseous emissions shall be dispersed through stacks of adequate height as per CPCB/SPCB guidelines.
- (vi) Total fresh water requirement shall not exceed 47955 cum/day to be met from Western Yamuna Canal. Necessary permission in this regard shall be obtained from the concerned regulatory authority.
- (vii) Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.
- (viii) Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm, and solvent transfer to be done through pumps.
- (ix) Process organic residue and spent carbon, if any, 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.
- (x) 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.

- (xi) Regular VOC monitoring to be done at vulnerable points.
- (xii) The oily sludge shall be subjected to melting pit for oil recovery and the residue shall be bio-remediated. The sludge shall be stored in HDPE lined pit with proper leachate collection system.
- (xiii) Comprehensive water audit to be conducted on annual basis and report to the concerned Regional Office of MEF&CC. Outcome from the report to be implemented for conservation scheme.
- (xiv) Oil catchers/oil traps shall be provided at all possible locations in rain/storm water drainage system inside the factory premises.
- (xv) The company shall undertake waste minimization measures as below:-
 - (a) Metering and control of quantities of active ingredients to minimize waste.
 - (b) Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.
 - (c) Use of automated filling to minimize spillage.
 - (d) Use of Close Feed system into batch reactors.
 - (e) Venting equipment through vapour recovery system.
 - (f) Use of high pressure hoses for equipment clearing to reduce wastewater generation.
- (xvi) 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 guidelines in consultation with the State Forest Department.
- (xvii) 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.
- (xviii) 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.
- (xix) The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Fire fighting system shall be as per the norms.
- (xx) Continuous online (24x7) 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 the premises. In case of the treated effluent to be utilized for irrigation/gardening, real time monitoring system shall be installed at the ETP outlet.

- (xxi) Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.

GENERAL CONDITIONS

- (i) The project authorities shall adhere to the stipulations made by the State Pollution Control Board, Central Pollution Control Board, State Government and any other statutory authority.
- (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.
- (iii) The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one station each is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.
- (iv) The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be followed.
- (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 levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).
- (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.
- (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.
- (viii) The company shall also comply with all the environmental 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.
- (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.

- (x) The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.
- (xi) A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.
- (xii) The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.
- (xiii) A copy of the 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.
- (xiv) 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 Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.
- (xv) The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of MoEF&CC by e-mail.
- (xvi) 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://envfor.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 the concerned Regional Office of the Ministry.
- (xvii) 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.



सत्यमेव जयते

Government of India
Ministry of Environment and Forests

F. No. J-11011/106/2012-IA-II (I)

Paryavaran Bhawan
CGO Complex, Lodhi Road
New Delhi - 110 003

E-mail : tchand2003@yahoo.co.uk
Telefax : 011: 24363963

To

Dated: 23rd May 2014

Shri P. Kulshreshtha (DGM, HS&E)
M/s Indian Oil Corporation Limited
Panipat Refinery & Petrochem Complex
P.O. Panipat Refinery -1321 140,
Haryana.

Email.: kulshreshthap@iocl.co.in kulshreshthap@indianoil.in & Fax.: 01802541110

Subject: Butene-1 Project at Panipat Refinery & Petrochem Complex of M/s Indian Oil Corporation Limited (IOCL) at village Balijathan Tehsil Matlauda - Environmental Clearance - Regarding.

Sir,

This has reference to this Ministry's letter of even no. dated 13.08.2012 according Terms of Reference to the aforesaid project and your letter no. HSE/EP/WU-5/EC-APPL/18 dated 21st October, 2013 along with project documents including EIA-EMP report, Public Hearing report and letters dated 19.03.2013, 11.11.2013 seeking environmental clearance on the above mentioned subject.

All Petro-chemical complexes are listed at S.N. 5(c) under category 'A' and appraised at Central level.

2. The Ministry of Environment & Forests has examined your application. It is noted that the proposal is for production of Butene-1 (20,000 MTPA) at Panipat Refinery & Petrochemical Complex of IOCL, Village Baljatan, Tehsil Matlauda, District Panipat, Haryana. The proposed unit will be installed in the existing Panipat Naphtha Cracker Complex. Total plot area of existing Panipat Naphtha Cracker Complex is 6300 m². No additional land will be required as the proposed Butene-1 facilities will be installed in vacant plot (90 m x 70 m) available near the swing unit within the existing Panipat Naphtha Cracker Complex. Total cost of project is Rs. 190 crores. It is noted that as per action plan prepared by HSPCB and CPCB, oil refinery and naphtha cracker unit are located outside critically polluted area notified by the CPCB. Public hearing/consultation was conducted by the Haryana State Pollution Control Board on 23rd August, 2013.

3. The utility requirement for the proposed butene-1 project will be fulfilled by the existing facilities. In the existing Panipat Naphtha Cracker, the major portion of the fuel used is RLNG. Based on the fuel consumption, additional SO₂ emissions will be 3.53 Kg/hr from proposed Butene-1 plant. Fresh water requirement from Munak Regulator on the Western Yamuna Canal will be increased from 1808 m³/hr to 1813 m³/hr after implementation of Butene project. Additional water will be used as cooling tower make up water. Industrial effluent will be treated in the effluent treatment plant (ETP). Treated effluent will be recycled/reused in the existing cooling tower. Chemical/inorganic sludge will be sent to Treatment Storage and Disposal Facility (TSDF) for hazardous waste. Spent catalyst and spent/waste oil will be sent to authorized recyclers/re-processors.

4. The proposal was considered by the Expert Appraisal Committee (Industry) in its 34th meeting held during 13th -14th April 2012 and 14th reconstituted EAC (Industry) meeting held during 19th to 20th December, 2013 respectively. Based on the documents furnished and presentation made by the Project Proponent and

the EIA Consultant namely Envirotech East (P) Ltd., and additional information provided, the EAC(I) recommended the proposal for environmental clearance.

5. The Ministry of Environment and Forests hereby accords environmental clearance to the above project under the provisions of EIA Notification dated 14th September, 2006 subject to strict compliance of the following specific and general conditions:

A. SPECIFIC CONDITIONS :

- i. All the specific conditions and general conditions specified in the earlier environmental clearance letters accorded vide Ministry's letter nos. J-11011/27/91-IA-II (I) dated 16th July, 1992, J-11011/60/2000-IA-II (I) dated 9th April, 2001, J-11011/52/2000-IA-II (I) dated 30th April, 2001, J-11011/9/2001-IA-II (I) dated 6th December, 2001, J-11011/153/2004-IA-II (I) dated 4th January, 2005 and J-11011/7/2004-IA-II (I) dated 9th August, 2004 shall be complied with.
- ii. M/s Indian Oil Corporation Limited shall comply with new standards/norms for Oil Refinery Industry and petrochemical industry notified under the Environment (Protection) Rules, 1986.
- iii. Continuous on-line stack monitoring for SO₂, NO_x and CO of all the stacks shall be carried out. Low NO_x burners shall be installed.
- iv. The emission standards prescribed by the MoEF under Environment (Protection) Act for petrochemical industry shall be strictly followed. At no time, the emission levels shall go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency. Stack emissions shall be monitored regularly.
- v. Leak Detection and Repair programme shall be prepared and implemented to control HC/VOC emissions. Focus shall be given to prevent fugitive emissions for which preventive maintenance of pumps, valves, pipelines are required. Proper maintenance of mechanical seals of pumps and valves shall be given. A preventive maintenance schedule for each unit shall be prepared and adhered to. Fugitive emissions of HC from product storage tank yards etc. must be regularly monitored. Sensors for detecting HC leakage shall be provided at strategic locations.
- vi. Continuous monitoring system for VOCs at all important places/areas shall be ensured. When monitoring results indicate above the permissible limits, effective measures shall be taken immediately.
- vii. SO₂ emissions after implementation of Butene-1 shall not exceed 138 Kg/hr.
- viii. 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 input through feed (sulphur content in crude oil), sulphur output from Refinery through products, byproduct (elemental sulphur), atmospheric emissions etc.
- ix. Ambient air quality monitoring stations, [PM₁₀, PM_{2.5}, SO₂, NO_x, H₂S, mercaptan, non-methane-HC and Benzene] shall be set up in the complex in consultation with Haryana 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.
- x. Ambient air quality data shall be collected as per NAAQES standards notified by the Ministry on 16th November, 2009 and 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.

- 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 noise levels exceed the limit.
- xii. Total fresh water requirement from Yamuna Canal shall not exceed 1813 m³/hr and prior permission shall be obtained from the concerned agency. No ground water shall be used.
- xiii. Industrial effluent shall be treated in the effluent treatment plant. Treated effluent shall be recycled/reused in the existing cooling tower. Water quality of treated effluent shall be monitored regularly.
- xiv. Oil catchers/oil traps shall be provided at all possible locations in rain/ storm water drainage system inside the factory premises.
- xv. 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 and Trans-boundary Movement) Rules, 2008 and amended time to time.
- xvi. Proper oil spillage prevention management plan shall be prepared to avoid spillage/leakage of oil/petroleum products and ensure regular monitoring.
- xvii. The company shall strictly follow all the recommendation mentioned in the Charter on Corporate Responsibility for Environmental Protection (CREP).
- xviii. To prevent fire and explosion at oil and gas facility, potential ignition sources shall be kept to a minimum and adequate separation distance between potential ignition sources and flammable materials shall be in place.
- xix. Additional 25000 trees shall be planted to increase the greenbelt coverage. Thick greenbelt with suitable plant species shall be developed around unit. Selection of plant species shall be as per the CPCB guidelines.
- xx. All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.
- xxi. All the issues raised and commitment made during the public hearing/consultation meeting held on 23rd August, 2013 shall be satisfactorily implemented. Accordingly, provision of budget to be kept.
- xxii. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities 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 the completion of the project.

B. GENERAL CONDITIONS:

- i. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board (SPCB), State Government and any other statutory authority.
- ii. No further expansion or modification in the project shall be carried out without prior approval of the Ministry of Environment & Forests. 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.
- iii. The project authorities must strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 2000 as amended subsequently. Prior approvals

from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate etc. must be obtained, wherever applicable.

- iv. 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 levels shall conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).
- v. A separate Environmental Management Cell equipped with full fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.
- vi. Adequate funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures and shall be used to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government alongwith the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purposes.
- vii. The Regional Office of this Ministry/Central Pollution Control Board/State Pollution Control Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.
- viii. A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad / Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions / representations, if any, were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.
- ix. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MOEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM₁₀, PM_{2.5}, SO₂, NO_x, HC (Methane & Non-methane), VOCs (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.
- x. The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB. The Regional Office of this Ministry / CPCB / SPCB shall monitor the stipulated conditions.
- xi. The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company alongwith the status of compliance of environmental conditions and shall also be sent to the respective Regional Offices of the MOEF by e-mail.
- xii. 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 and may also be seen at Website of the Ministry of Environment and Forests 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 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 the Regional office.
- xiii. 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 commencing the land development work.

8.0 The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

9.0 The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

10.0 The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Water Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and the Public Liability Insurance Act, 1991 along with their amendments and rules.

(Dr. T.Chandini)
Director

Copy to :

1. The Principal Secretary, Environment Department, Government of Haryana, SCO 1-2-3, Sector 17-D (2nd Floor), Chandigarh.
2. The Chief Conservator of Forests (Central), Regional Office (Northern Zone), Bay No.24-25, Sector 31-A, DakshimMarg, Chandigarh-160030.
3. The Chairman, Central Pollution Control Board PariveshBhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
4. The Chairman, HaryanaState Pollution Control Board, C-11, Sector-6, Panchkula.
5. The Adviser, IA II(I), Ministry of Environment and Forests, ParyavaranBhavan, CGO Complex, New Delhi.
6. Monitoring Cell, Ministry of Environment and Forests, ParyavaranBhavan, CGO Complex, New Delhi.
7. Guard File/Monitoring File/Record File.

(Dr. T.Chandini)
Director

Tel No: 2436 3973
Paryavaran Bhawan,
CGO Complex, Lodi Road,
New Delhi - 110 003

Dated: January 4, 2005

To
The Chairman
M/s Indian Oil Corporation Limited
SCOPE complex, core-2
7, Institutional Area, Lodi Road,
New Delhi- 110003

Sub: Naphtha cracker complex at Panipat Refinery by M/s Indian Oil Corporation Limited at Village Baljatan in district Panipat, Haryana - reg. environmental clearance

Sir,

This has reference to your letter no. EC /APPL dated 31st August, 2004 along with questionnaire, EIA /EMP report and subsequent information furnished by you vide letters dated 20th October, 2004, 9th November, 2004 and 2nd December, 2004 on the above-mentioned project. The Ministry of Environment and Forests has examined your application. It is noted that the proposal envisages setting up of Naphtha Cracker unit (NCU) and down stream polymer units at Panipat in Haryana for utilizing Naphtha from the IOCL refineries. The estimated naphtha requirement will be 2200 TMTPA. The cost of the expansion project is 6300 crores.

The proposed naphtha cracker unit with captive power generation facilities and downstream polymer units envisage following configuration and capacity:

	Process unit	Capacity (TMTPA)
i.	Naphtha cracker unit (NCU)	0.8 TMTPA of ethylene
ii.	Low Density polyethylene (LLDPE)/High density Polyethylene (HDPE) swing unit	0.35
iii.	Dedicated HDPE unit	0.3
iv.	Polypropylene unit (PP)	0.6 TMTPA (2 lines each of 0.3 TMTPA)
v.	MEG unit	0.3 TMTPA

Land area required for the project is 306.0 ha. The project does not involve displacement of people. Water requirement of 3100 M3/hr would be met from the Western Yamuna Canal. The total solid waste generation from the proposed unit will be 6000 TPA. Except for 400 TPA, rest of solid waste will be sold. Out of 400 TPA of solid waste, 200 TPA of catalyst, which will be sent to reclaimer and remaining

considered the proposal in its meeting held on 09.09.04. NOC from the Haryana State Pollution Control Board has been obtained on 21.10. 2004.

3.0. The Ministry of Environment and Forests hereby accords environmental clearance to the above project under the provisions of EIA Notification dated 27th January, 1994 as amended subsequently subject to strict compliance of the following specific and general conditions.

SPECIFIC CONDITIONS:

- i. The gaseous emissions (SO_2 , NO_x and HC, Benzene) from the various process units should conform to the standards prescribed under Environment (Protection) Rules, 1986 or norms stipulated by the SPCB whichever is more stringent. At no time, the emission level should go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency.
- ii. Adequate ambient air quality monitoring stations, [SPM, SO_2 , NO_x and HC, Benzene] should be set up in the Naphtha Cracker Complex in consultation with SPCB, based on occurrence of maximum ground level concentration and down-wind direction of wind i.e. maximum impact zone. The monitoring network must be decided based on modeling exercise to represent short-term GLCs. Continuous on-line stack monitoring equipment should be installed for measurement of SO_2 and NO_x . Data on VOC should be monitored and submitted to the SPCB / Ministry.
- iii. Measures for fugitive emissions control should be taken by installation of internal floating tanks for storage of light liquid HCs and provision of double mechanical seals to all pumps handling high vapour pressure materials, sensors for detecting HC/ toxic gas leakages at strategic locations, regular inspection of floating roof seals, maintenance of valves and other equipments and regular skimming of separators/equalization basin.
- iv. All new standards/norms that are being proposed by the CPCB for petrochemical plants shall be applicable for the proposed naphtha cracker and downstream polymer units. The company shall conform to the proposed process vent standards for organic chemicals including non-VOCs and all possible VOCs i.e. TOCs standard and process vent standards for top priority chemicals. The company shall install online monitors for VOC measurements. Action on the above should be taken during the detailed design stage of the NCC. The project authorities shall take necessary measures to comply with the above proposed emission norms including monitoring facilities and intimate the same to this Ministry.
- v. M/s IOCL shall adopt Leak Detection And Repair (LDAR) programme for quantification and control of fugitive emissions.

- vi. The company shall also ensure that the total SO₂ emissions from the NCC shall not exceed 138 kg/hr during the normal operations.
- vii. To mitigate NOx emission, the company shall install low NOx burners.
- viii. The waste water effluent from the NCC should not exceed 750m³/hr. The wastewater shall be segregated in different streams at the source. The treated effluent should comply with the standards stipulated by HSPC/CPCB for discharge on land for irrigation. The treated effluent should be used for cooling, service, green belt, dust suppression and fire water. As per the commitment given, there should be zero effluent discharge due to the proposed project. The company should ensure that there will be no discharge of treated effluent into Thirana drain.
- ix. The oily sludge generated from the ETP after oil recovery shall be taken to the existing refinery facilities for further treatment and disposal into the secured landfill. The spent catalyst shall be disposed off into the secured landfill facility. The design of the secured landfill site shall be as per the Central Pollution Control Board guidelines. The company shall firm up the plan for construction of hazardous waste facility within the NCC or send the hazardous waste to secured landfill site being developed by the Haryana Environmental Management society. The final plan during detailed design stage of NCC for construction of hazardous waste management facility shall be submitted to the Ministry.
- x. Green belt of should be provided to mitigate the effects of fugitive emissions all around the plant in an area of 40 ha. in addition to 240 ha. of area already afforested in consultation with DFO as per CPCB guidelines. Green belt in the NW direction should be strengthened keeping in view the winds from SE and E direction. The trees should be planted in both sides of the approach roads and truck parking area.
- xi. Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.

GENERAL CONDITIONS:

- i. The project authorities must strictly adhere to the stipulations made by the Haryana State Pollution Control Board and the State Government.
- ii. No further expansion or modernization in the plant should be carried out without prior approval of the Ministry of Environment and Forests.
- iii. At no time, the emissions should go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the units, the

respective unit should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved.

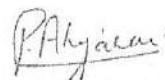
- iv. All the recommendations made in the EIA /EMP report and risk assessment report should be implemented.
- v. The overall noise levels in and around the plant area should be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA.(night time).
- vi. The project authorities must strictly comply with the provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 as amended in 2000 for handling of hazardous chemicals etc. Necessary approvals from Chief Controller of Explosives must be obtained before commission of the project.
- vii. The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management and Handling) Rules,2003. Authorization from the State Pollution Control Board must be obtained for collections/treatment/storage/disposal of hazardous wastes.
- viii. The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.
- ix. The stipulated conditions will be monitored by the Regional of this Ministry at Chandigarh/Central Pollution Control Board/State Pollution Control Board. A six monthly compliance report and the monitored data should be submitted to them regularly.
- x. The Project Proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board/ Committee and may also be seen at Website of the Ministry of Environment and Forests at <http://www.envfor.nic.in>. This should be advertised within seven days from the 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 should be forwarded to the Regional office.
- xi. The Project Authorities should inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.

-5-

3.0. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

4.0. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner will implement these conditions.

5.0. The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Wastes (Management and Handling) Rules, 2003 and the Public Liability Insurance Act, 1991 along with their amendments and rules.



(Dr. P. L. Ahujarai)
Additional Director

Copy to:

1. The Secretary, Ministry of Petroleum and Natural Gas, Shastri Bhavan, New Delhi- 110001.
2. The Secretary (Environment) Haryana Civil Secretariat, Government of Haryana, Secretariat, Chandigarh.
3. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
4. Chairman, Haryana Pollution Control Board, C-11, Sector-6, Panchkula.
5. Chief Conservator of Forests, Regional Office (NZ), Bays No.24-25, Sector 31-A, Dakshin Marg, Chandigarh-160047.
6. JS (CCI), Ministry of Environment and Forests, Parivaran Bhavan, CGO Complex, Lodi Road, New Delhi-110003.
7. Monitoring Cell, Ministry of Environment & Forests, New Delhi.
8. Monitoring file.
9. Guard file.
10. Record file.

(Dr. P. L. Ahujarai)
Additional Director

F. No. J-11011/268/2014-IA.II (I)
Government of India
Ministry of Environment, Forest and Climate Change
(I.A. Division)

Indira Paryavaran Bhawan
Aliganj, Jor Bagh Road
New Delhi - 110 003

E-mail: yogendra78@nic.in
Telefax: 011-24695365

Dated: 22nd February, 2017

To,

The Deputy Manager-HSE
M/s Indian Oil Corporation Limited,
Panipat Naptha Cracker Complex,
Baholi, Panipat, Haryana- 132140

Sub: Recovery of Styrene and Synthetic Olefins Production from RFCC and DCU off gases (from Panipat Refinery) and its integration with Naphtha Cracker Unit and Mounded Bullet Storage for C4 Mix at Indian Oil Panipat Refinery & Petrochemical Complex at Panipat, Haryana by M/s Indian Oil Corporation Limited - Environmental Clearance - reg.

Ref.: Your online proposal no. IA/IND/HR/23749/2014; dated 20th May, 2016.

Sir,p

This has reference to your online proposal no. IA/IND/HR/23749/2014; dated 20th May, 2016 along with project documents including Form I, Terms of References, Pre-feasibility Report, EIA/EMP Report regarding above mentioned project.

2.0 The Ministry of Environment, Forests and Climate Change has examined the application. It is noted that proposal is for Recovery of Styrene and Synthetic Olefins Production from RFCC and DCU off gases (from Panipat Refinery) and its integration with Naphtha Cracker Unit and Mounded Bullet Storage for C4 Mix at Indian Oil Panipat Refinery & Petrochemical Complex at Panipat, Haryana by M/s Indian Oil Corporation Limited. Total Plot area of 14,000 sq. m (9000 sq. m for SRU & 5000 sq. m for ERU). 4 spheres shall be in butadiene service and one mounded bullet shall be constructed for storing C4 mix/ C4 H and C4 raffinate. The new sphere and new mounded bullet shall have a nominal capacity of 2800 m³ each. The sphere shall be located in Tank Farm 7 and mounded bullet shall be put in spent caustic area. The cost of Ethylene and Styrene Recovery Units is ₹ 347 Crore and ₹ 246 Crore respectively.



3.0 There will be no additional emissions of SO₂ due to proposed project. There is no additional fuel combustion. The total SO₂ emissions from the complex shall be less than 138 kg/hr. The Committee suggested them to measure the present SO₂ emissions from the proposed project. The fresh water requirement from the existing unit is 1700 m³/hr. There will be no additional requirement. Reused water (30 m³/hr) shall be utilised for proposed project. Presently about 140 m³/hr of treated waste water is sent to RO plant (Design Capacity 150 m³/hr). The marginal waste water from SRU & ERU plants shall be sent to ETP/RO plant. The existing flare system shall be used for safe disposal of combustible gases which are relieved from the new proposed units during start-up, shut-down, normal operation or in case of an emergency. Spent Catalyst from PA Selective Hydrogenation Reactors after every 5 years will be spent. The precious metal needs to be recovered after sending to manufacturer. Solvent regeneration dump out will be blended with fuel oil or waste and sent for incineration.

4.0 Public hearing is exempted under section 7 (ii) of EIA Notification, 2006.

5.0 All the Petroleum Refinery Plants are listed at S.N. 4(a) under Category 'A' and appraised at the Central level.

6.0 The proposal was considered by the Expert Appraisal Committee (Industry) in its 11th, 15th, and 17th meeting held during 20-21st July, 2016, 10th November, 2016 and 26th-29th December, 2016 respectively. Project Proponent and the EIA Consultant namely M/s Engineers India Ltd., have presented EIA/EMP report as per the TOR. EAC has found the EIA / EMP Report and additional information to be satisfactory and in full consonance with the presented TORs. The Committee recommended the proposal for environmental clearance.

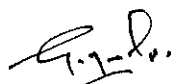
7.0 Based on the information submitted by the project proponent, the Ministry of Environment and Forests hereby accords environmental clearance to above project under the provisions of EIA Notification dated 14th September 2006, subject to the compliance of the following Specific and General Conditions:

A. SPECIFIC CONDITIONS:

- i) The Ministry vide G.S.R. 608(E) dated 21st July, 2010 and amended time to time has prescribed effluent and emission standards that shall be complied by the unit.
- ii) Compliance to all the environmental conditions stipulated in the environmental clearance shall be satisfactorily implemented and compliance reports submitted to the Ministry's Regional Office of MEF&CC.
- iii) All pollution control and monitoring equipments shall be installed, tested and interlocked with the process. SPCB shall grant 'Consent to Operate' after ensuring that all the mentioned pollution control equipments, construction of storm water drain, rain water harvesting structure, Greenbelt, uploading of compliance report on the website etc have been implemented.



- iv) SO₂ emissions after expansion from the plant shall not exceed 138 kg/hr and further efforts shall be made for reduction of SO₂ load through use of low sulphur fuel. Sulphur recovery units shall be installed for control of H₂S emissions.
- v) Ambient air quality data shall be collected as per NAAEQS standards notified by the Ministry vide G.S.R. No. 826(E) dated 16th September, 2009. The levels of PM₁₀, PM_{2.5}, SO₂, NO_x, VOC and CO shall be monitored in the ambient air and emissions from the stacks and displayed at a convenient location near the main gate of the company and at important public places. The company shall upload the results of monitored data on its website and shall update the same periodically. It shall simultaneously be sent to the Regional office of MOEF, the respective Zonal office of CPCB and the state Pollution Control Board (MPCB).
- vi) In plant control measures for checking fugitive emissions from all the vulnerable sources shall be provided. Fugitive emissions shall be controlled by providing closed storage, closed handling & conveyance of chemicals/materials, multi cyclone separator and water sprinkling system. Dust suppression system including water sprinkling system shall be provided at loading and unloading areas to control dust emissions. Fugitive emissions in the work zone environment, product, raw materials storage area etc. shall be regularly monitored. The emissions shall conform to the limits stipulated by the SPCB.
- vii) 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.
- viii) Total fresh water requirement from canal shall not exceed 1700 m³/hr (annual average) and prior permission shall be obtained from the Competent Authority. No ground water shall be used without permission.
- ix) The marginal waste water from SRU & ERU plants shall be sent to ETP/RO plant. Effluent stream shall be treated in the ETP comprising primary, secondary and tertiary treatment facility. As proposed RO plant shall be employed to treat 140 m³/hr.
- x) Automatic /online monitoring system (24 x 7 monitoring devices) for flow measurement and relevant pollutants in the treatment system to be installed. The data to be made available to the respective SPCB and in the Company's website.
- xi) Adequate odour management plan and its mitigation measure to be implemented on priority.
- xii) Regular VOC monitoring to be done at vulnerable points.
- xiii) The oily sludge shall be subjected to melting pit for oil recovery and the residue shall be bio-remediated. The sludge shall be stored in HDPE lined pit with proper leachate collection system.
- xiv) Comprehensive water audit to be conducted on annual basis and report to the concerned Regional Office of MEF&CC. Outcome from the report to be implemented for conservation scheme.
- xv) Oil catchers/oil traps shall be provided at all possible locations in rain/storm water drainage system inside the factory premises.



- xvi) Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm. Solvent transfer shall be by pumps.
- xvii) The Company shall strictly comply with the rules and guidelines under Hazardous and other wastes (Management and Transboundary Movement) Rules, 2016 as amended time to time. All Transportation of Hazardous Chemicals shall be *as per* the Motor Vehicle Act (MVA), 1989.
- xviii) The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Fire fighting system shall be as per the norms.
- xix) Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
- xx) At least 2.5 % of the total cost of the project shall be earmarked towards the Enterprise Social Commitment (ESC) based on local needs and action plan with financial and physical breakup/details shall be prepared and submitted to the Ministry's Regional Office at Bhopal. Implementation of such program shall be ensured accordingly in a time bound manner.
- xxi) As proposed, green belt over 33% shall be developed within plant premises with at least 10 meter wide green belt on all sides along the periphery of the project area, in downward direction, and along road sides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the DFO.

B. GENERAL CONDITIONS:

- i. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board (SPCB), State Government and any other statutory authority.
- ii. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. 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.
- iii. The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one station is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.
- iv. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be followed.
- 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 levels shall conform to the standards



prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).

- 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.
- 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.
- viii. The company shall also comply with all the environmental 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, risk mitigation measures and public hearing relating to the project shall be implemented.
- ix. The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villages and administration.
- x. The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.
- xi. A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.
- xii. The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.
- xiii. A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, ZilaParisad/Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.
- xiv. 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, the respective Zonal Office of CPCB and SPCB. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.
- xv. The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.
- xvi. The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the

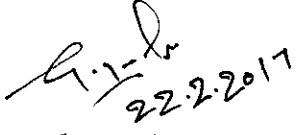
clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at <http://moef.nic.in>. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry.

- xvii. 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.

4.0 The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

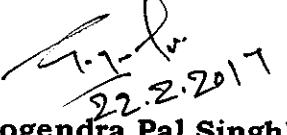
5.0 The Ministry reserves the right to stipulate additional conditions, if found necessary. The company in a time bound manner will implement these conditions.

6.0 The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Water Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and the Public Liability Insurance Act, 1991 along with their amendments and rules.


(Yogendra Pal Singh)
Scientist 'D'

Copy to:-

1. The Principal Secretary, Environment Department, Government of Haryana, SCO 1-2-3, Sector 17-D (2nd Floor), Chandigarh.
2. The Chief Conservator of Forests (Central), Regional Office (Northern Zone), Bay No.24-25, Sector 31-A, Dakshim Marg, Chandigarh-160030.
3. The Chairman, Central Pollution Control Board Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
4. The Member Secretary, Haryana State Pollution Control Board, C-11, Sector-6, Panchkula.
5. Monitoring Cell, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi.
6. Guard File/Monitoring File/Record File/ Notice Board.


(Yogendra Pal Singh)
Scientist 'D'

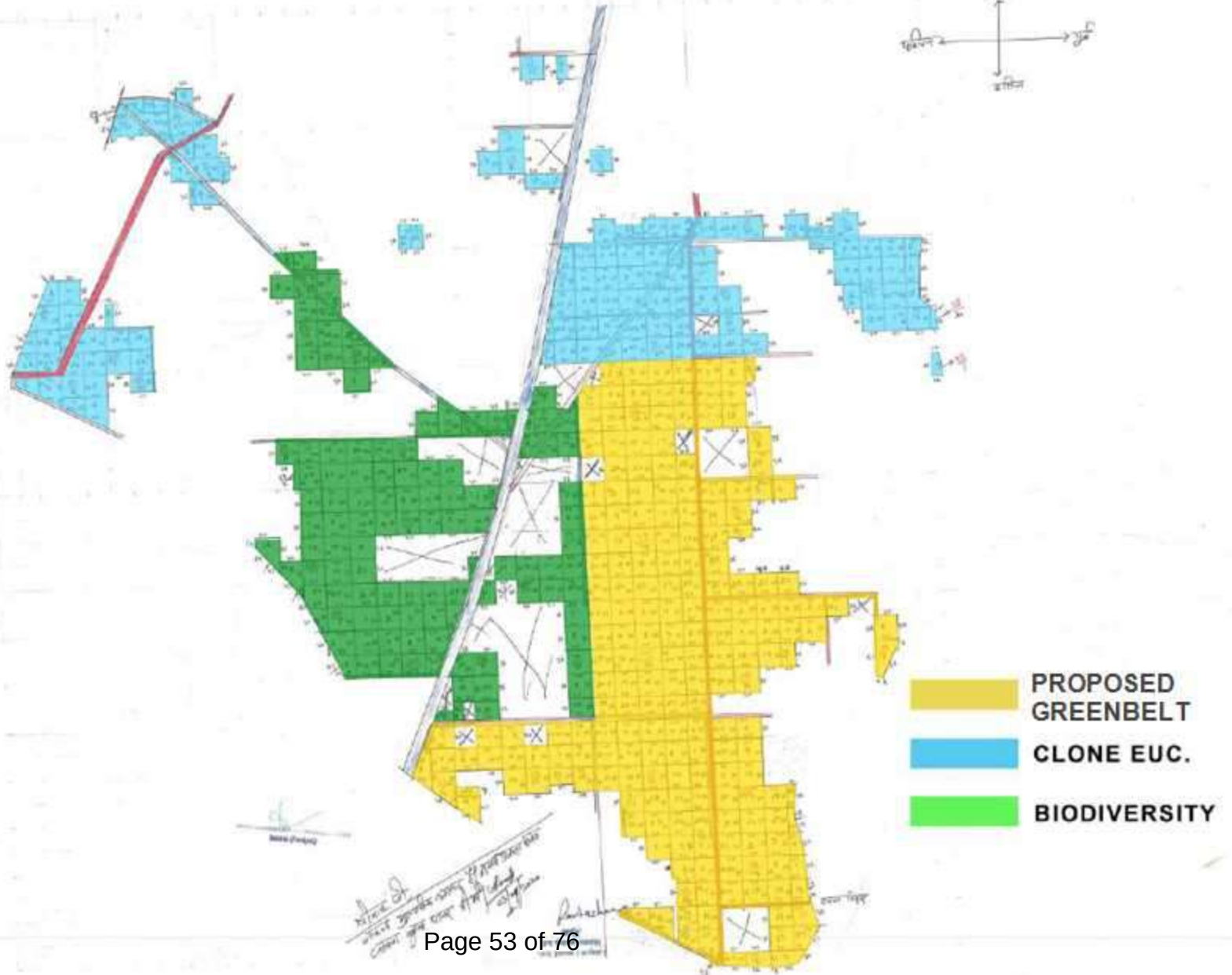
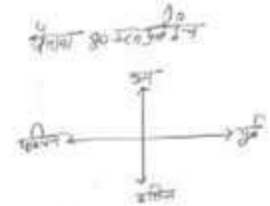
LEGEND:—

GREEN BELT
ECO-PARK
BIO-DRAINAGE



REV.	DATE	DESCRIPTION	CHNG	CHNG	BY	APPROV	BY
			SHEET NO. - 1				
10	1	11	12				

नकल अंग्रेजी और हिंदी में - गणना से उत्तर और दक्षिण



Item No. 03

(Court No. 1)

**BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

(By Video Conferencing)

Original Application No. 67/2020
(I.A. No. 309/2020)

(With report dated 05.03.2021)

Nathan Chaudhary

Applicant

Versus

State of GNCTD & Ors.

Respondent(s)

IOCL

.....

Applicant in I.A.

Date of hearing: 09.04.2021

**CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER
HON'BLE MR. JUSTICE BRIJESH SETHI, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER**

Applicant:	Mr. R.L. Goel, Advocate
Respondent(s):	Mr. Balendu Shekhar, Advocate for CPCB
	Mr. Rahul Khurana, Advocate for HSPCB
	Mr. Gigi C. George, Advocate for MoEF & CC

ORDER

1. Grievance in this application is against unscientific disposal of spent catalysts (Oxide), which is under the category of hazardous waste within the range of item no. 1.1 to 4.5 of the Schedule 1 of the Hazardous and other Waste Rules, 2016, by Panipat and Digboi refineries. The violation takes place in selling, handling, storing and transporting the said waste illegally. The applicant has relied upon an earlier order of the Tribunal dated 02.11.2015 in *Original Application No. 284/2015, Jugal Kishore v. Union of India & Ors.*, directing as follows:

“1. There shall be no transfer/sale of Spent Catalysts (Alumina Containing) to any bidder/persons who plans to dispose of the spent catalyst by using it as a raw material

without having approval from the CPCB as envisaged under Rule 11 of the HW Rules.

2. The respondent no. 3 is restrained from entering into or executing any such deal with the bidder/persons who plans to dispose of the spent catalyst by using it as a raw material without having approval from the CPCB as envisaged under Rule 11 of the HW Rules.”

2. On 20.03.2020, considering the above, a factual and action taken report was sought from the CPCB, Punjab State PCB, Haryana State PCB, West Bengal State PCB, Assam State PCB and the DPCC with reference to compliance of direction of this Tribunal by the concerned entities in the said States. CPCB was to be the nodal agency for the purpose.

3. The matter was last considered on 11.09.2020 in the light of the report of the CPCB dated 08.09.2020 to the effect that all the State PCBs and PCCs were required to give necessary information. Meetings were held and violations were pointed out. The Committee recommended further remedial measures. The Tribunal directed further action in terms of the recommendations of the Committee. The operative part of the order is as follows:-

“1&2...xxx.....xxx.....xxx

3. Accordingly, CPCB has filed its action taken report on 08.09.2020. CPCB asked the concerned State PCBs/PCCs where oil refineries were operational to provide information about generation, storing, handling and selling of spent catalyst in the oil refineries. A six-member Committee was constituted which included CPCB, DPCC, WBPCB, PPCB, HSPCB and ASPCB to conduct inspection for furnishing the factual and action taken report to this Tribunal. The report mentions the data compiled from 19 State PCBs/PCCs and 23 oil refineries. The Committee held three meetings and conducted random inspection of some refineries. The observations and recommendations of the Committee are as follows:

“Observations:

- 1. It was found that category of spent catalyst, quantity and disposal method is not defined clearly in the authorization granted by the concerned SPCB in case of IOCL Panipat and some other oil refineries.***

2. IOCL Panipat, Haryana, IOCL Mathura Refinery, Uttar Pradesh, IOCL Barauni, Bihar, Reliance Jamnagar, Gujarat are generating Spent catalyst 8505.215 MT, 518.82 MT, 5202 MT and 407 MT respectively, **which are exceeding the authorised quantity of spent catalyst given in the authorization by the concerned SPCB during the last 3 years, which is violations of HOWM Rules, 2016.**
3. During the inspection of the committee, it was found that approximately 400 MT of spent catalyst was stored in the storage yard of IOCL Panipat. Upon verification of Form-3 and Form-10, it was found that **IOCL Panipat has stored 1950 MT of spent catalyst more than 90 days which is violation of Rule 8 of HOWM Rules, 2016.**
4. IOCL Digboi, Assam not maintaining the manifest records for assessing the actual quantity of generation and disposal of spent catalyst for last 3 years. But we found one manifest entry that **they have sold 68.332 MT of spent catalyst to unauthorized utilizer namely Ganesh Steel and Alloys Ltd., West Bengal in August 2016. In this case, IOCL Digboi, Assam and Ganesh Steel and Alloys Ltd., West Bengal are violating HOWM Rules, 2016.**
5. Similarly, IOCL Vadodara and IOCL Haldia are generating 1506.2 MT and 4482.37 MT of spent catalyst respectively in last 3 years. **Out of it IOCL Vadodara and IOCL Haldia have sold 28.835 MT and 13 MT respectively to illegal utilizers namely, Ganesh Steel and Alloys Ltd., West Bengal, who is not authorized to process this spent catalyst.**
6. It was also observed the fertilizer industry-**IFFCO, Bareilly, UP. sold their spent catalyst to the unauthorized utilizer namely, Lakhdatta Petrochem, Bhatinda (Punjab), who is not authorized to process this spent catalyst. Therefore, both units violating HOWM Rules, 2016.**
7. **All the 23 oil refineries are not maintaining generation of spent catalyst (Form-3) and manifest (Form-IO) as per HOWM Rules, 2016.** In result of that we are not able to verify actual quantity of generation and disposal of spent catalyst.
8. During the inspection of joint committee, it was found that, the **IOCL Panipat, HPCL Bhatinda and IOCL Digboi, are not maintaining packaging and labelling of hazardous and other waste as per Rule 17 of HOWM Rules, 2016. In addition to that these units (except HPCL-Mittal refinery, Bhatinda Punjab) also not having adequate storage facility for safe and environmentally sound management of hazardous and other wastes as per Rule 4 of HOWM Rules, 2016.**
9. Generally, **oil refineries do not examine the eligibility of recyclers/utilizers of spent catalyst as per HOWM Rules, 2016 before E-auctioning through MSTC.**

10. No information received from Andhra Pollution Control Board regarding generation and utilization of spent catalyst in the state.
11. No information received from Rajasthan Pollution Control Board, Chhattisgarh Environment Conservation Board and Telangana State Pollution Control Board, regarding re-processor/ utilizers of spent catalyst in the state.

Recommendations:

1. **SPCBs/PCCs shall be directed to issue proper authorization for handling and management of hazardous and other waste in accordance of HOWM Rules, 2016 to generators/utilizers/recyclers, clearly mentioning the category, quantity and disposal method.**
2. **All oil refineries generating hazardous waste including spent catalyst shall ensure to dispose off their hazardous and other waste in scientific manner or to the authorized utilizers/recyclers in accordance of HOWM Rules, 2016.**
3. **Recyclers/utilizers shall be directed to ensure that procurement of hazardous and other waste including spent catalyst as per authorization granted to them.**
4. **All oil refineries generating hazardous waste including spent catalyst shall ensure proper packaging and labelling of hazardous and other waste as per Rule 17 of HOWM Rules, 2016 and also ensure adequate storage facility for safe and environmentally sound management of hazardous and other wastes as per Rule 4 of HOWM Rules, 2016.**
5. **All generators/utilizers/recyclers of hazardous waste including spent catalyst shall maintain mandatory records like Form-3, Form-4 and Form-IO as prescribed in HOWM Rules, 2016.**
6. **Financial Penalty shall be imposed on all the defaulting units (generators/utilizers/recyclers) for procedural violations listed in CPCB "Guidelines on Implementing Liabilities for Environmental Damages due to Handling & Disposal of Hazardous Wastes and Penalty" and as per Rule 23 of HOWM Rules, 2016.**
7. **Environmental Compensation shall be imposed on defaulting units (generators/utilizers/recyclers) for violating HOWM Rules, 2016 as per CPCB guideline "Enforcement Framework for Effective Implementation of HOWM Rules, 2016" as listed below:**
 - i. **IOCL Panipat, Haryana for excess quantity of 8505.215 MT of spent catalyst as against authorized quantity in last 3 financial years and**

storing 1950 MT of spent catalyst for more than 90 days within the premises;

- ii. IOCL Mathura Refinery, Uttar Pradesh for excess quantity of 518.82 MT of spent catalyst as against authorized quantity in the year 2018-19;**
- iii. IOCL Barauni, Bihar for excess quantity of 5252 MT of spent catalyst as against authorized quantity in the year 2018-19;**
- iv. Reliance Jamnagar, Gujarat for excess quantity of 407 MT of spent catalyst as against authorized quantity in the year 2018-19;**
- v. IFFCO, Bareilly, UP. for illegal sold of 27.39 MT of spent catalyst to unauthorized recycler/utilizer i.e. Mis Lakhdata Petrochem, Bhatinda, Punjab;**
- vi. IOCL Digboi for illegal sold of 68.332 MT of spent catalyst to unauthorized recycler/utilizer i.e. Ganesh Steel and Alloys Pvt. Ltd. (West Bengal);**
- vii. IOCL Haldia for illegal sold of 13 MT of spent catalyst to unauthorized recycler/utilizer i.e. Ganesh Steel and Alloys Pvt. Ltd. (West Bengal);**
- viii. IOCL Vadodara for illegal sold of 28.835 MT of spent catalyst to unauthorized recycler/utilizer i.e. Ganesh Steel and Alloys Pvt. Ltd. (West Bengal);**
- ix. M/s Lakhdata Petrochem (Bhatinda) for procuring and processing 27.39 MT of spent catalyst of category 18.1 of Schedule-I of HOWM, Rules 2016 without authorization in the year 2019-20;**
- x. M/s Ganesh Steel and Alloys Pvt. Ltd. (West Bengal) for procuring and processing 110.167 MT of spent catalyst without authorization.**

8. All the spent catalyst generator i.e., Oil refineries shall be directed to prepare uniform Standard Operating Procedure (SoP) for E-auctioning of hazardous and other waste including spent catalyst across the country.”

4. We are of the opinion that the recommendations of the Committee need to be followed. There is no objection to the report from any quarters. All concerned entities may take follow up action. The State PCBs/PCCs may take action to stop continuation violation of law and remedial action for the past violations, following due process of law. The compliance of the recommendations may be overseen by the concerned State PCBs/PCCs and CPCB jointly. **CPCB may furnish further action taken report after collecting information from all the concerned oil refineries/State PCBs/PCCs before the next date by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/ OCR Support**

PDF and not in the form of Image PDF. It is not necessary for individual State PCB/PCCs/Oil refinery or other entities to appear unless they are aggrieved by the order of the State PCB/PCC/CPCB in which case, they are at liberty to take remedies in accordance with law.”

4. Accordingly, further report has been filed by the CPCB on 05.03.2021 giving the action taken report in a tabular form as follows:-

“Table – 1: Action Taken Report (ATR) received from PCBs/PCCs

Sr. No.	SPCBs/PCCs	Actions taken/Compliances
1.	Assam Pollution Control Board (APCB) submitted the ATR vide letter dated 28.10.2020	i. The Board had directed all the petroleum refineries located in the State to handle / manage spent catalyst generated by each of the unit in accordance with the HOWM Rules, 2016 and transfer/sale such waste only to agencies having valid authorization for utilization of the same. ii. Records of hazardous waste generation, storage and disposal have been verified and reports submitted to CPCB. iii. As follow up action the Board has subsequently directed all the refineries to submit detailed compliance status in accordance with Hon’ble NGT vide its order dated 11.09.2020. iv. M/s IOCL, Digboi Refinery has been directed to stop activities which do not conform with HOWM Rules, 2016 specifically with respect to sale and transfer of spent catalyst. v. APCB submitted that further follow up action shall be initiated accordingly.
2.	Andhra Pradesh Pollution Control Board (APPCB) submitted ATR vide letter dated 28.10.2020	i. APPCB informed that they have issued proper hazardous waste Authorization under Rule 6 of HOWM Rules, 2016 to M/s. Hindustan Petroleum Corporation Limited: HPCL (Visakhapatnam, for handling and management of spent catalyst clearly mentioning the category (4.2 of Schedule I), quantity (1202 MT/Year) and disposal method (to authorized re-processors, Recyclers & TSDF). ii. In case of recyclers/utilizers of spent catalyst, APPCB informed that no such facilities are existing in the jurisdiction of Andhra Pradesh. iii. It was also informed that another unit namely; M/s Andhra Petrochemicals, Vishakhapatnam is generating spent catalyst and disposing the same to authorized recyclers/utilizers situated outside the State. iv. APPCB has verified the Form 3, Form 4 and Form 10 of the above said spent catalyst generators. APPCB also verified and submitted the authorization granted by concerned State where the spent catalyst is sold or transferred.
3.	Bihar Pollution Control Board (BPCB) submitted ATR vide letter dated 12.11.2020	i. BSPCB issued authorization in accordance with HOWM Rules, 2016 in Form-2. a. The authorization includes category of hazardous waste, quantity and mode of disposal or recycling or utilization or co-processing, etc. b. The previous authorization granted by the Board under the Hazardous Waste (Management, Handling & Trans-boundary Movement) Rules, 2008 vide Board’s letter dated-15.07.2014 was valid for a period of five years and based on unit’s application for quantity of spent catalyst generation 6201 TPA. c. Board has granted/renewed authorization vide letter dated-01.02.2019 (Amended vide ref. no.B-2787, dated-16.06.2020) for the generation of spent catalyst: 1980 TPA (RFCCU & recyclable process spent catalyst). ii. BSPCB informed that they are committed for its compliance/ imposing financial penalty on all the defaulting units (generators/utilizers/recyclers) for procedural violations in

		accordance with the “Guidelines on Implementing Liabilities for Environmental Damages due to Handling & Disposal of Hazardous Wastes and Penalty” and as per Rule 23 of HOWM Rules, 2016”. Presently, there is no observation/record for damage caused to the environment or third party due to improper handling and management of hazardous and other wastes. iii. BSPCB has verified Form-3, Form-4 and Form-10 of the IOCL Barauni Refinery and informed that unit has generated spent catalyst in the range of 969 to 1980 MTA which is within the authorized quantity i.e. spent catalyst generation =<1980 TPA as per authorization granted. Therefore, M/s IOCL Barauni Refinery, Barauni, Begusarai has channelized all generated RFCCU spent catalyst including its backlog quantity within 90 days hence imposition of Environmental Compensation (EC) is not applicable for the period of 2018-19 & 2019-20. However, the unit has stored the hazardous waste (spent catalyst) more than 90 days during 2017-18 and hence may be liable for Environmental Compensation (EC) against the procedural violation in nature and do not cause damage to environment and third party. iv. BSPCB informed that 2513 MT of generated spent catalyst was kept more than 90 days and hence unit is liable to pay financial penalty and EC in accordance of HOWM Rules, 2016.															
4.	Chhattisgarh Environment Conservation Board (CECB) submitted ATR vide letter dated 02.11.2020	i. CECB informed that there are no oil refineries established in Chhattisgarh. ii. Action will be taken if any unauthorized recycler found to procure spent catalyst from oil refineries or fertilizer units. iii. CECB vide letter dated 16.09.2020 provided response of CPCB letter dated 23.07.2020. The information regarding inspection and verification of industries procuring spent catalyst is as below: <table border="1"> <thead> <tr> <th>Name of Industry</th><th>Authorization details, Category and Quantity of HW</th><th>Compliance status during inspection</th></tr> </thead> <tbody> <tr> <td>M/s Refracast Metallurgicals Pvt. Ltd., Unit I, Raipur</td><td>Valid up to 03.10.2024 Spent Catalyst (Schedule IV, Sr. No. 10) 3000 MT/Yr</td><td>During 2019-20 the industry has not procured any spent catalyst from oil refineries.</td></tr> <tr> <td>M/s Refracast Metallurgicals Pvt. Ltd., Unit II, Raipur</td><td>Valid up to 06.04.2025 Spent Catalyst (Schedule IV, Sr. No. 10) 3000 MT/Yr</td><td>During inspection unit was found to procure 419.315 MT of spent catalyst. Out of 419.315, 113.485 MT had been procured from fertilizer industries and remaining 305.83 MT procured from oil refineries.</td></tr> <tr> <td>M/s Refmet Technology Pvt.; Ltd., Raipur</td><td>Valid up to 30.08.2024 Spent Catalyst containing copper, nickel and zinc of 1000 MT, 3000 MT and 500 MT per year respectively (Schedule IV, Sr. no. 10)</td><td>No spent catalyst generated from oil refineries has been procured during year 2019-20.</td></tr> <tr> <td>M/s Arth Metallurgicals Pvt. Ltd., Raipur</td><td>Spent Catalyst containing cobalt and nickel of 900 MT and 1500 MT</td><td>As per inspection of Form 4 and Form 10 469 MT of spent catalyst was found to be procured from oil refineries.</td></tr> </tbody> </table>	Name of Industry	Authorization details, Category and Quantity of HW	Compliance status during inspection	M/s Refracast Metallurgicals Pvt. Ltd., Unit I, Raipur	Valid up to 03.10.2024 Spent Catalyst (Schedule IV, Sr. No. 10) 3000 MT/Yr	During 2019-20 the industry has not procured any spent catalyst from oil refineries.	M/s Refracast Metallurgicals Pvt. Ltd., Unit II, Raipur	Valid up to 06.04.2025 Spent Catalyst (Schedule IV, Sr. No. 10) 3000 MT/Yr	During inspection unit was found to procure 419.315 MT of spent catalyst. Out of 419.315, 113.485 MT had been procured from fertilizer industries and remaining 305.83 MT procured from oil refineries.	M/s Refmet Technology Pvt.; Ltd., Raipur	Valid up to 30.08.2024 Spent Catalyst containing copper, nickel and zinc of 1000 MT, 3000 MT and 500 MT per year respectively (Schedule IV, Sr. no. 10)	No spent catalyst generated from oil refineries has been procured during year 2019-20.	M/s Arth Metallurgicals Pvt. Ltd., Raipur	Spent Catalyst containing cobalt and nickel of 900 MT and 1500 MT	As per inspection of Form 4 and Form 10 469 MT of spent catalyst was found to be procured from oil refineries.
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				<i>per year respectively (Schedule IV, Sr. no. 10)</i>	
			<i>M/s Ashtdhatu Ferro Metals Pvt. Ltd., Raipur</i>	<i>Valid up to 09.12.2023 Spent Catalyst containing cobalt and nickel of 1080 MT and 1500 MT per year respectively (Schedule IV, Sr. no. 10)</i>	<i>No spent catalyst generated from oil refineries has been procured during year 2019-20.</i>
5.	<i>Delhi Pollution Control Committee (DPCC)</i>	<i>DPCC has not provided any response of CPCB letter dated 22.09.2020. However, DPCC already informed that in absence of spent catalyst generating and recycling/re-processing units it shall be considered nil in Delhi vide letter dated 23.06.2020.</i>			
6.	<i>Gujarat Pollution Control Board (GPCB) submitted ATR vide mail dated 03.12.2020</i>	<i>i. GPCB has issued letter dated 19.10.2020 to all Unit Heads and Regional Officers to issue proper authorization to all generator/utilizers/ recyclers and to clearly mention category, quantity and disposal method of waste in authorization.</i> <i>ii. GPCB submitted that Gujarat is having 42 authorized spent catalyst utilizer/recyclers authorized under Schedule-IV of HOWM Rules, 2016. GPCB has issued letter vide no. GPCB/HAZ-GEN-705/ 570366 dated 19/10/2020 to 42 authorized utilizers/ recyclers to ensure management, handling and procurement of hazardous and other waste including spent catalyst as per authorization granted to them.</i> <i>iii. In regards to imposition of Financial Penalty, GPCB has proposed to levy Financial Penalty of Rs. 1 lakh only per violation from each defaulting units. GPCB vide mail dated 02.12.2020 sought approval from CPCB for imposition of Financial Penalty as per provisions of Rule -23(2) of HOWM Rules, 2016. In response CPCB vide letter dated 04.12.2020 granted approval for imposition of the same.</i> <i>iv. GPCB also issued show cause notice under Environment (Protection) Act, 1986 to M/s IOCL, Vadodara and M/s Reliance Industries Limited, Jamnagar based on principle of natural justice prior levying Environmental Compensation vide their letter dated 02.12.2020 and 03.12.2020 respectively.</i>			
7.	<i>Haryana State Pollution Control Board (HSPCB) vide mail dated 11.01.2021</i>	<i>i. As per recommendation of Hon'ble NGT order dated 11.09.2020, Panipat RO, HSPCB issued a show cause notice to IOCL, Panipat Refinery vide letter dated 25.09.2020.</i> <i>ii. Panipat RO, HSPCB calculated Financial Penalty of Rs. 4 lakh and Environmental Compensation of Rs. 58,56,000/- and vide letter dated 20.10.2020 submitted the proposal of imposing a total EC of Rs. 62,56,000/- (Rupees Sixty-two lakh fifty-six thousand only) to HSPCB-Head Office Panchkula for approval of competent authority.</i> <i>iii. HSPCB vide its order dated 18.01.2021 directed M/s IOCL, Panipat Refinery to deposit Rs. 62,56,000/- (Rupees Sixty-two lakh fifty-six thousand only) as Environmental Compensation.</i>			
8.	<i>Jammu Kashmir Pollution Control Board (JKPCB) submitted ATR vide letter dated 28.10.2020</i>	<i>i. JKPCB submitted that there is only one unit i.e. M/s Shree Sita Ram Industries Pvt. Ltd., which is using spent catalyst in the manufacturing process, who has been issued proper authorization and pass book valid up to September, 2024 for handling and management of hazardous and other wastes in accordance of HOWM Rules, 2016.</i> <i>ii. The said unit has been issued authorization with conditions to ensure that procurement of hazardous and other wastes including spent catalyst as per authorization granted to him.</i>			
9.	<i>Karnataka State Pollution Control Board (KSPCB) submitted ATR vide letter dated</i>	<i>i. KSPCB submitted that M/s Mangalore Refineries and Petrochemicals (MRPL) located at Mangalore, Karnataka is the only oil refinery generating spent catalyst of categories 4.1, 4.2 and 4.5. The industry is disposing the spent catalyst for recycling to authorized recyclers and regularly submitting the manifest and Annual reports</i>			

	22.12.2020	to the Board. ii. There are no other spent catalyst recycling/re-processing/recovery facilities in Karnataka State.																											
10.	Kerala State Pollution Control Board (Kerala SPCB) submitted ATR vide letter dated 04.11.2020	i. Kerala SPCB submitted that BPCL, Kochi Refinery is the only oil refinery generating spent catalyst in the State and having valid authorization for generation of spent catalyst. The industry is either disposing the spent catalyst through the secured landfill of common hazardous waste TSDF at Ambalamedu of KEIL which is a facility having authorization from Board or selling the spent catalyst to the recyclers through Metal Scrap Trading Company (MSTC) site only. MSTC ensures that only authorized vendors are taking part in the auction. ii. Kerala SPCB verified the detail of recyclers to which spent catalyst is sold from the manifest and annual reports submitted. The disposal is as per authorization under HOWM Rules, 2016 issued to BPCL, Kochi Refinery. iii. Kerala SPCB also submitted that there are no recyclers/utilizers of spent catalyst existing in the State and if any defaulting unit is found, financial penalty/environmental compensation shall be imposed by the Board.																											
11	Madhya Pradesh Pollution Control Board (MPPCB) submitted ATR vide letter dated 03.11.2020	i. MPPCB submitted that they have issued authorization with duly mentioned category, quantity and disposal method of wastes. ii. Details of spent catalyst generation, procurement and disposal verified by MPPCB is as follows: <table><tr><th rowspan="2">Name of unit</th><th rowspan="2">HW Category</th><th rowspan="2">Auth. Qty. (MTA)</th><th colspan="2">Quantity (MT)</th></tr><tr><th>Procured</th><th>Disposed</th></tr><tr><td>M/s Bharat Oman Refineries Ltd. (generator)</td><td>4.2 (Sch-I)</td><td>1500</td><td>--</td><td>425.37</td></tr><tr><td>M/s Premier Refractories India Pvt. Ltd. (utilizer)</td><td>4.2 (Sch-I)</td><td>15000</td><td>3173</td><td>Nil</td></tr><tr><td>M/s Vyankatesh Metals & Alloys Pvt. Ltd. (utilizer)</td><td>S. No. 10 (Sch-IV)</td><td>2000</td><td>964</td><td>Nil</td></tr><tr><td>M/s Calderys Refractories Ltd. (utilizer)</td><td>4.2 (Sch-I)</td><td>5000</td><td>Nil</td><td>Nil</td></tr></table> iii. MPPCB submitted that no defaulting unit exist in Madhya Pradesh.	Name of unit	HW Category	Auth. Qty. (MTA)	Quantity (MT)		Procured	Disposed	M/s Bharat Oman Refineries Ltd. (generator)	4.2 (Sch-I)	1500	--	425.37	M/s Premier Refractories India Pvt. Ltd. (utilizer)	4.2 (Sch-I)	15000	3173	Nil	M/s Vyankatesh Metals & Alloys Pvt. Ltd. (utilizer)	S. No. 10 (Sch-IV)	2000	964	Nil	M/s Calderys Refractories Ltd. (utilizer)	4.2 (Sch-I)	5000	Nil	Nil
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M/s Calderys Refractories Ltd. (utilizer)	4.2 (Sch-I)	5000	Nil	Nil																									
12.	Maharashtra Pollution Control Board (MPCB) submitted ATR vide letter dated 08.01.2020	i. MPCB has submitted only information regarding generation of spent catalyst in the state of Maharashtra. ii. However, Compliance status have not been received in compliance of Hon'ble NGT order dated 11.09.2020.																											
13.	Odisha State Pollution Control Board (OSPCB)	OSPCB submitted ATR vide mail dated 01.12.2020 and as action taken OSPCB vide letter dated 27.11.2020 directed the IOCL, Paradip Refinery to comply with the directions of Hon'ble NGT order dated 11.09.2020.																											
14.	Punjab Pollution Control Board (PPCB) submitted ATR vide letter dated 06.01.2021	i. PPCB informed that there are 02 units in Punjab, which are involved in generation/recycling/reprocessing/utilization of spent catalyst. ii. Details of action taken report is given as below: <table><tr><th>Name of unit</th><th>Actions taken</th></tr><tr><td>M/s HPCL-Mittal Energy Ltd., Bhatinda (Generator)</td><td> a. PPCB vide letter dated 23.11.2020 imposed an Environmental Compensation of Rs. 3.0 lakhs (Rupees Three Lakhs) only against the industry for various violations mentioned in Hon'ble NGT order dated 11.09.2020. b. PPCB vide letter dated 26.11.2020 issued </td></tr></table>	Name of unit	Actions taken	M/s HPCL-Mittal Energy Ltd., Bhatinda (Generator)	a. PPCB vide letter dated 23.11.2020 imposed an Environmental Compensation of Rs. 3.0 lakhs (Rupees Three Lakhs) only against the industry for various violations mentioned in Hon'ble NGT order dated 11.09.2020. b. PPCB vide letter dated 26.11.2020 issued																							
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				directions to the unit for compliance of Hon'ble NGT order dated 11.09.2020. c. So far, industry has not deposited EC however, filed an appeal on 03.12.2020 against PPCB order dated 23.11.2020 before Competent Authority of Board, which is under consideration of the Board.																													
			M/s Lakhdatta Petrochemicals, Bhatinda (Recycler)	a. PPCB vide letter dated 05.01.2021 imposed an Environmental Compensation of Rs. 6.0 lakhs (Rupees Six Lakhs) only against the industry for various violations mentioned in Hon'ble NGT order dated 11.09.2020. b. Also, PPCB vide letter dated 26.11.2020 directed the unit to ensure procurement of spent catalyst may be done in future as per authorization granted to the industry i.e. category 4.2 only, failing which appropriate action will be taken as per HOWM Rules, 2016.																													
15.	Rajasthan Pollution Control Board (RPCB) submitted ATR vide letter dated 28.12.2020	i.	RSPCB submitted details of units given as below: <table><tr><th rowspan="2">Name of unit</th><th colspan="4">Spent catalyst Authorization</th></tr><tr><th>Operation</th><th>Category</th><th>Qty.</th><th>Validity</th></tr><tr><td>M/s Mittal Pigments Pvt. Ltd., Kota</td><td>Recovery of metal</td><td>1.6, 3.1, 4.2 and 4.5 of Schedule I</td><td>4500 MTA</td><td>29.02.2024</td></tr><tr><td>M/s Ravindra Heraeus Pvt. Ltd., Udaipur</td><td>Recycling/ Processing</td><td>1.6 and 4.2 of Schedule I</td><td>2887.50 MTA</td><td>31.12.2022</td></tr><tr><td>M/s Choksi Heraeus Pvt. Ltd., Udaipur</td><td>Recycling/ Processing</td><td>1.6 of Schedule I</td><td>1800 MTA</td><td>31.08.2023</td></tr><tr><td>M/s Arham Industries, Bharatpur</td><td>Recycling/ Processing</td><td>4.2 of Schedule I</td><td>1800 MTA</td><td>31.08.2025</td></tr></table>		Name of unit	Spent catalyst Authorization				Operation	Category	Qty.	Validity	M/s Mittal Pigments Pvt. Ltd., Kota	Recovery of metal	1.6, 3.1, 4.2 and 4.5 of Schedule I	4500 MTA	29.02.2024	M/s Ravindra Heraeus Pvt. Ltd., Udaipur	Recycling/ Processing	1.6 and 4.2 of Schedule I	2887.50 MTA	31.12.2022	M/s Choksi Heraeus Pvt. Ltd., Udaipur	Recycling/ Processing	1.6 of Schedule I	1800 MTA	31.08.2023	M/s Arham Industries, Bharatpur	Recycling/ Processing	4.2 of Schedule I	1800 MTA	31.08.2025
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		ii.	Along-with letter, RSPCB has submitted inspection report of above mentioned industries and it was observed that these inspection has been carried out for grant of authorization.																														
		iii.	The inspection reports are included with air quality monitoring, process and stack observation, APCD assessment, etc.																														
		iv.	Annual Returns submitted by RSPCB were tabulated as below: <table><tr><th>Unit</th><th>Year</th><th>Procured Quantity (MT)</th><th>Utilized Quantity (MT)</th><th>Stock Stored (MT)</th></tr><tr><td>M/s Mittal Pigments Pvt. Ltd., Kota</td><td>2018-19</td><td>0</td><td>0</td><td>0</td></tr><tr><td>M/s Ravindra Heraeus Pvt. Ltd., Udaipur</td><td>2019-20</td><td>64.20 & 43.04 (previous stock)</td><td>66.86</td><td>40.38</td></tr><tr><td>M/s Choksi Heraeus Pvt. Ltd., Udaipur</td><td>2019-20</td><td>69.08 & 9.25 (previous stock)</td><td>78.33</td><td>00</td></tr><tr><td>M/s Arham Industries, Bharatpur</td><td>2019-20</td><td>647.02 & 406.32 (previous stock)</td><td>780.19</td><td>273.15</td></tr></table>		Unit	Year	Procured Quantity (MT)	Utilized Quantity (MT)	Stock Stored (MT)	M/s Mittal Pigments Pvt. Ltd., Kota	2018-19	0	0	0	M/s Ravindra Heraeus Pvt. Ltd., Udaipur	2019-20	64.20 & 43.04 (previous stock)	66.86	40.38	M/s Choksi Heraeus Pvt. Ltd., Udaipur	2019-20	69.08 & 9.25 (previous stock)	78.33	00	M/s Arham Industries, Bharatpur	2019-20	647.02 & 406.32 (previous stock)	780.19	273.15				
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16.	Tamil Nadu Pollution Control Board (TNPCB)	Compliance status have not been received in compliance of Hon'ble NGT order dated 11.09.2020.														
17.	Telangana State Pollution Control Board (TSPCB) submitted ATR vide letter dated 13.10.2020	i. TSPCB submitted that there are no oil refineries and spent catalyst utilizers/recyclers exist in State of Telangana. ii. TSPCB is issuing hazardous waste authorization along with CFO clearly mentioning the type of waste generated, category of the waste (Schedule no.) as per HOWM Rule, 2016, quantity of waste generated and disposal option for the waste generated. iii. All hazardous waste recyclers are directed that procurement of hazardous and other waste shall be in accordance with the authorization granted to them duly following the manifest copies. iv. As there are no utilizers/recyclers in Telangana which are using spent catalyst and no oil refineries, no such penalty is being imposed.														
18.	Uttar Pradesh Pollution Control Board	Compliance status have not been received in compliance of Hon'ble NGT order dated 11.09.2020														
19.	West Bengal Pollution Control Board (WBPCB) submitted ATR vide letter dated 12.11.2020	i. WBPCB submitted that they have already issued authorization to M/s IOCL, Haldia Refinery and M/s Ganesh Steel & Alloys Ltd. in accordance of HOWM Rules, 2016. ii. Actions have been taken in accordance of recommendation vide Hon'ble NGT order dated 11.09.2020 for imposition of Financial Penalty and Environmental Compensation. Necessary directions issued to both defaulting units and both units have deposited Financial Penalty and Environmental Compensation amount to WBPCB. Details are given below: <table><tr><th rowspan="2">Name of unit</th><th rowspan="2">Direction issued</th><th colspan="2">Amount deposited (in Rs.)</th></tr><tr><th>Fin. Pen.</th><th>EC</th></tr><tr><td>M/s IOCL, Haldia Refinery</td><td>WBPCB letter dated 13.10.2020</td><td>1,00,000/- (One lakh only)</td><td>3,90,000/- (Three lakh ninety thousand only)</td></tr><tr><td>M/s Ganesh Steel & Alloys Ltd.</td><td>WBPCB letter dated 13.10.2020</td><td>3,00,000/- (Three lakh only)</td><td>33,05,010/- (Thirty Three lakh five thousand ten only)</td></tr></table>	Name of unit	Direction issued	Amount deposited (in Rs.)		Fin. Pen.	EC	M/s IOCL, Haldia Refinery	WBPCB letter dated 13.10.2020	1,00,000/- (One lakh only)	3,90,000/- (Three lakh ninety thousand only)	M/s Ganesh Steel & Alloys Ltd.	WBPCB letter dated 13.10.2020	3,00,000/- (Three lakh only)	33,05,010/- (Thirty Three lakh five thousand ten only)
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Table -2: Compliance of recommendations of Hon'ble NGT order dated 11/09/2020 pertaining to oil refineries

Sr. No.	Name & Address Refinery	Recommendation no. and its compliance submitted by the unit
1.	M/s Hindustan Petroleum Corporation Limited (HPCL), Visakha Refinery, Malkapuram, Visakhapatnam,	2. Disposing hazardous wastes including spent catalyst to the authorized utilizers/recyclers in accordance with HOWM Rules, 2016. 4. HPCL-Visakha Refinery is ensuring proper packaging and labeling of hazardous and other waste as per Rule 17 of HOWM Rules, 2016. Further, a dedicated hazardous waste transit storage facility with adequate space for safe storage of hazardous wastes is available at HPCL-Visakha Refinery. 5. Maintaining the records of hazardous wastes in the prescribed formats viz., Form-3, Form-4 and Form10 as per HOWM Rules, 2016. Form-4 & Form-10 are submitted to SPCB in line with HOWM Rules, 2016. 8. With regards to formulating (SOP), HPCL-Visakha Refinery humbly submits that the same shall be done under the guidance and leadership

		<i>of either CPCB or SPCB. HPCL-Visakha Refinery will extend wholehearted support in the process of developing uniform SOP.</i>
2.	<i>M/s Oil & Natural Gas Corporation (ONGC), Tatiphaka Refinery, East Godavari District PIN-533249, Andhra Pradesh</i>	<i>The industry had already informed that there is no use/generation of spent catalyst in the premises. However, in compliance of NGT recommendations, the unit again submitted following:</i> 2.<i>No catalytic process in the refinery and so there is no generation of spent catalyst.</i> 4 &5. <i>Waste oil generated in the Refinery is transported to centralized location at Narsapur and E-auctioned. Spent/Used Batteries are returned to the suppliers under buyback policy. Accordingly, Form-4 has submitted to APPCB every year.</i> 8. <i>Not applicable as we have no generation of spent catalyst.</i>
3.	<i>M/s Indian Oil Corporation Limited, Digboi Refinery, Digboi-786171</i>	2. <i>Shall be complied as recommended.</i> 4. <i>Proper packaging and labeling as per Rule 4 of HOWM Rules, 2016 is being complied.</i> 5. <i>Shall be complied as recommended.</i> 8. <i>A committee has been constituted by IOCL, Refineries Headquarters, New Delhi, for the development of a Uniform Standard Operating Procedure (SoP) for implementation across the refineries of IOCL. Accordingly, the common SoP will be submitted to CPCB in Nov, 2020.</i>
4.	<i>M/s Indian Oil Corporation Limited Guwahati Refinery, Noonmati Guwahati-781020, Assam</i>	2. <i>The spent catalysts generated are disposed to authorized agency through e-auction, facilitated by Metal Scrap Trade Corporation Limited (MSTC), Kolkata.</i> <i>The oily sludge generated is centrifuged for oil recovery and residual cake is bio remediated with microbes supplied by IOCL, R&D.</i> <i>It is ensured that hazardous and other wastes are disposed in scientific manner or to the authorized utilizers/recyclers in accordance of HOWM Rules, 2016.</i> 4.<i>Spent catalysts generated at Guwahati Refinery are packed in sealed CS drums and stored in a designated location.</i> <i>All the drums are labeled to identify the type of spent catalyst stored in the drum. However labeling of the drum shall be ensured in the Form 8 as per Rule 17 of HOWM Rules, 2016 in future.</i> 5. <i>Maintains the records of generation of hazardous wastes including spent catalysts in Form-3 and Form-4 annually and submits to Pollution Control Board, Assam (PCBA) with the Annual Return under HOWM Rules, 2016.</i> <i>Copies of manifest for the spent catalysts disposed are maintained in Form-10 and a copy of the same has submitted to Pollution Control Board, Assam, as and when spent catalysts are disposed</i> 8. <i>A committee has been constituted at Refinery Head Quarters of Indian Oil Corporation Limited, New Delhi to develop a Standard Operating Procedure (SoP) for E-auctioning of Hazardous and other wastes including spent catalysts. The SoP shall be uniformly implemented across all the refineries of IOCL.</i>
5.	<i>M/s Numaligarh Refinery P.O. Numaligarh Refinery Project Dist. Golaghat, Assam</i>	2. <i>Hazardous waste being disposed off to the authorized recycler only by e-auction. Spent catalyst unloaded from reactors during the RTA-2015 was sold to Refracast Metallurgicals (P) Ltd. Raipur, who are authorized recycler/ re-processor approved by State Pollution Control Board of Chhattisgarh.</i> 4. <i>Drums are properly labelled with type of catalyst, drum no. etc. on</i>

		the drum. Labelling shall be done as per Rule 17 of HOWM Rules, 2016 in future. Noted for compliance. 5. Mandatory records of hazardous waste including spent catalyst generation, annual return and disposing are maintained as per Form-3, Form-4 and Form-10. As per guidelines Form-4 is submitted every year to SPCB. 8. Generates mainly oily sludge & spent catalyst as hazardous waste. Bioremediation has been done to oily sludge and spent catalyst sold to authorized recyclers only.
6.	M/s Indian Oil Corporation Limited Bongaigaon refinery, PO Dhaligaon, Dist-Chirang Pin-783385, Assam	2, 4 & 5. Being Complied 8. SOP is presently being prepared by IOCL, Refinery Head Quarter, Delhi for all Indian Oil Refineries. The same will be followed at BGR.
7.	M/s Indian Oil Corporation, Barauni Oil Refinery, Dist-Begusari-85114, Bihar	2. Spent catalyst has disposed off through authorized utilizers/recyclers in accordance of HOWM Rules, 2016. 4. RFCC spent catalyst is stored in water proof jumbo poly bags. Others spent catalysts are stored in closed metallic drums. All spent catalysts are stored at designated covered storage area with proper labeling clearly indicating source of generation, technical name of HW etc. as per Rule 4 of HOWM Rules, 2016. 5. Records of hazardous and other wastes including spent catalyst are being maintained in Form-3, Form-4 and Form-10 already submitted to BSPCB. 8. Barauni refinery is disposing hazardous waste as per Standard Operating Procedure, however for uniformity among all IOCL Refineries, development of uniform SoP w.r.t disposal of hazardous waste is under preparation.
8.	M/s Reliance Industries Ltd., Meghpar, Dist. Jamnagar, Gujarat-361142	Both units of Reliance Industries limited submitted following: 2. All the hazardous wastes generated from the refinery have been approved by GPCB for their collection, storage, transportation and disposal. It has endeavoured to utilize the hazardous waste generated to the maximum extent possible in a scientific manner. Accordingly, procedures have been set for utilizing the wastes for re-refining, metal extraction and alternate fuel & raw material (AFR) as per the potential. Some wastes which do not have potential for reuse/utilization, are disposed in a scientific manner through approved secured landfill or incineration facility. All the HW generated at site is disposed strictly in accordance with HOWM Rules 2016 and necessary records are maintained.
9.	M/s Reliance Industries Limited, "A Unit-Reliance Jamnagar SEZ" P.O. Reliance Greens, Motikhavadi, Jamnagar-361142,	4. The requirements of HOWM Rules 2016 are complied with during collection, storage, transportation and disposal of HW at the refinery site. The HW is stored in dedicated areas with suitable packaging scientifically based on the characteristics of the waste. The wastes generated in the refinery are typically stored in tanks, sealed drums, jumbo bags etc. The storage of the collected HW is done in dedicated storage facilities created for the purpose of storage of those wastes. All the packaging is properly labeled for identification of the wastes. 5. Maintains all the records as per the requirements of HOWM Rules, 2016. The records of the generation of HW and its disposal are maintained on a daily, monthly and annual basis as per the requirements. These records can be made available to the authorities for inspection/scrutiny whenever asked for. As per requirements, the forms are submitted to the GPCB in a timely manner.

		8. For the disposal of HW we have entered in to agreement with authorized TSDF facility which is also a prerequisite for grant of consent by GPCB. The disposal of HW to potential re-users/utilizers is done through an established procedure for E-auctioning. All the procedures implemented at the refinery are robust and sufficiently matured.
10.	M/s Essar Oil Limited, Vadinar Refinery, Po. Khambhaliya, Dist. Jamnagar, Gujarat-361305	2. M/s Nayara Energy Limited is disposing off Spent Catalyst in scientific manner by selling them only to Pollution Control Board authorized actual recyclers. We will continue to follow the same practice in future also in compliance with HOWM Rules, 2016. 4. Refinery has dedicated hazardous waste storage sheds with 11600 m² area with HDPE linear facility at the bottom for storage facility. Spent catalyst is properly packed in MS Drums/Jumbo bags and labelled properly in the units itself and then only shifted to the central storage facility. The same practice will be followed in future strictly in compliance with HOWM Rules, 2016 5. Nayara Energy is maintaining all records as per HOWM Rules, 2016 and timely submitted to the respective regulatory authorities. 8. Nayara Energy has their own SoP for disposal of all types of hazardous and other wastes which is being followed for E-auctioning.
11.	M/s Indian Oil Corporation Limited, Gujarat Refinery, P.O. Jawaharnagar Vadodara-391320, Gujarat	2. It is being ensured by checking HW passbook as well as Authorization/consent copy of each and every vendor participating in E-auction process. 4. Proper packaging and labeling of hazardous wastes as per Rule 17 of HOWM Rules, 2016 is being ensured for all upcoming generating lot of hazardous wastes. Presently, a storage facility for around 5000 drums of spent catalyst at refinery premises which is being maintained as per Rule 4 of HOWM rules, 2016 for safe and environmentally sound management of hazardous and other wastes. 5. All mandatory records like Form-3, Form-4 and Form-10 as prescribed in HOWM Rules, 2016 are being maintained for all categories of hazardous wastes. 8. Presently, SoP for E-auctioning of spent catalyst is available and being followed at Gujarat refinery. However, uniform SoPs for E-auctioning of all hazardous wastes including spent catalyst is under preparation centrally by a committee formed by Refinery Headquarter-HSE.
12.	M/s Indian Oil Corporation Limited, Panipat Refinery, Village Baholi, Refinery Road, Panipat-132410, Haryana	2. Hazardous and other wastes generated from Panipat Refinery and Panipat Naptha Cracker has given to authorized utilizers/ recyclers for disposal in scientific manner in accordance of HOWM Rules, 2016. Only authorized recycles/utilizers having the prequalification documents (Authorization, CTO & Passbook) are allowed to participate for the auction. To ensure the same, all the documents submitted by the bidders towards pre-qualification criteria are checked before placement of the sale order. In addition to above, PRPC also has a Captive Secured land Fill (SLF) facility for disposal of Hazardous Waste wherein the disposal of Hazardous Waste is done in accordance with HOWM Rules, 2016. 4. IOCL, Panipat Refinery is in compliance with Rule 4 of HOWM Rules 2016 and ensures the packaging and labeling of hazardous and other wastes as prescribed. 5. All the required forms are properly maintained and filled by Panipat Refinery and Petrochemical Complex on regular basis without any

		<i>lapse.</i> 8. Standing Operating Procedure (SOP) for e-auctioning of hazardous and other waste, including spent catalyst is available and maintained at Panipat Refinery and Petrochemical Complex on regular basis. Copy of the SOP was also shared with the Joint Committee during their site inspection on 18.08.2020.
13.	M/s Mangalore Refineries and Petroleum Ltd., Kuthethur, Mangalore Taluk, DK District, Karnataka	2. The refinery ensures the disposal of hazardous and other waste in scientific manner to authorized utilizers/ recyclers in accordance of HOWM Rules, 2016. 4. MRPL adheres to Rule 17 for proper packaging and labelling and Rule 4 for safe and environmentally sound management of hazardous and other wastes as per HOWM Rules, 2016. A dedicated hazardous waste shed of adequate storage for storage of hazardous and other wastes has provided. 5. Form-3, Form-4 and Form-10 as prescribed in HOWM Rules-2016 has been maintained and followed at MRPL. 8. MRPL has a well-established procedure for E-auctioning which covers spent catalysts disposal meeting all the requirements of HOWM Rules, 2016.
14.	M/s BPCL Kochi Refinery, PB No. 2, Ambalamugal, Kochi, Ernakulam – 682 302 Kerala	BPCL Kochi has not submitted compliance of recommendation of Hon'ble NGT as directed vide CPCB letter dated 22.09.2019.
15.	M/s Bharat Oman Refineries Limited (BORL), Administrative building Refinery complex, Post BORL Residential complex, BINA, Dist : Sagar - 470124, Madhya Pradesh	2. Disposing hazardous and other waste including spent catalyst to authorized recyclers in accordance with HOWM Rules, 2016. 4. Packing and labelling the hazardous and other wastes including spent catalyst as per the rule 17 of HOWM Rules, 2016. A designated hazardous waste storage facility having adequate storage has already provided for the safe and environmentally sound management of the Hazardous and other wastes as per Rule 4 of HOWM Rules, 2016. 5. Form-3, Form-4 and Form-10 as prescribed in HOWM Rules-2016 has been maintained in the prescribed format in HOWM Rules, 2016. 8. Standard operating Procedure for E- auctioning of Hazardous and Other Waste including spent catalyst has prepared and followed.
16.	M/s Hindustan Petroleum Corporation Ltd., Mahul, Chembur, Mumbai -400074, Maharashtra	2. The spent catalyst is disposed off to the authorized utilizers/recyclers in accordance with HOWM Rules, 2016. 4. Ensures proper packaging and labelling of hazardous and other waste including spent catalyst as provided in HOWM Rules, 2016. Provided storage facility for safe and environmentally sound management of hazardous and other wastes as per HOWM Rules, 2016. 5. Maintained the record of hazardous waste including spent catalyst viz., Form-3, Form-4 and Form-10 as prescribed in HOWM Rules, 2016. Form-4 & Form-10 are filed with SPCB periodically as per HOWM Rules, 2016. 8. Disposes the hazardous waste including spent catalyst to the recyclers/re-processors through MSTC platform by e-auctioning. During the process, the parties who have been registered with CPCB/SPCB as recyclers/re-processors and having valid authorization by SPCBs are only allowed to participate for bidding. Also, ensures verification of SPCB authorization document of recycler/re-processor before lifting the catalyst. Thus, sufficient precaution is taken to ensure that the

		<i>hazardous waste is handed over to authorized recyclers/re-processors only. As regards to formulating Standard Operating Procedure, it is humble submission that the same shall be done under the guidance and leadership of either SPCB or CPCB. HPCL-Mumbai will cooperate in this initiative.</i>
17.	<i>M/s Bharat Petroleum Corporation Limited Mumbai Refinery, Mahul, Mumbai 400074, Maharashtra</i>	2, 4 &5. <i>Complied.</i> 8. <i>BPCL submitted copy of SoP for E-auctioning of hazardous and other waste including spent catalyst.</i>
18.	<i>M/s Indian Oil Corporation, IOCL Paradip Refinery, P.O. Jhimani, Via-Kujang, Jagatsinghpur-754141,</i>	2. <i>All hazardous waste generated at Paradip Refinery are disposed as per the methodology defined in HW authorization granted by the SPCB, Odisha and to the authorised utilisers/ recyclers in accordance of HOWM Rules, 2016.</i> 4. <i>Packaging and labelling of hazardous and other waste as per Rule 17 of HOWM Rules. Packaging of hazardous waste is done in properly (e.g. Drums/ Jumbo bags).Labelling of hazardous waste is done in accordance to Form-8 of HOWM Rules, 2016.</i> <i>Spent catalyst is stored in the intermediate storage facility warehouse (well ventilated shed with impervious floor) before final disposal through co-processor/ recyclers or disposal in captive secured landfill facility.</i> 5. <i>Mandatory records of hazardous waste are maintained in Form-3, Form-4 and Form-10 and submitted annually to SPCB, Odisha along with annual return.</i> 8. <i>A committee has been constituted by HSE IOCL-Refineries Headquarters, New Delhi for the development of the Uniform SOP to implement across all the refineries of IOCL.</i>
19.	<i>M/s HPCL-Mittal Energy Limited, (Guru Gobind Singh Refinery), Village Phullo Khari, Taluka: Talwandsaboo, Distt. Bathinda, PIN-151301 , Punjab</i>	2. <i>Spent catalyst is disposed off only to the authorized recyclers.</i> 4. <i>Stickers have been provided at site for labeling of hazardous waste containers after proper packaging, Adequate storage sheds have been provided in SLF area for storage of hazardous waste.</i> 5. <i>Records of hazardous waste generation was updated in Form-3 whenever hazardous waste was generated, However as advised by CPCB team during site visit on 22/10/2020, Form 3 is updated on daily basis. Annual return is being submitted to PPCB in Form-4 as per frequency mentioned in HOWM Rules, 2016. Record of hazardous waste disposal is updated in Form 10 as per HOWM Rules, 2016.</i> 8. <i>SoP submitted for disposal of hazardous waste by the unit ensuring safe disposal within time frame.</i>
20.	<i>M/s Chennai Petroleum Corporation Ltd, ManaliMaanali village, Madhavaram Taluk, Tiruvallur District, Tiruvallur -600068, Tamil Nadu</i>	2. <i>Spent catalyst generated are disposed either to authorized recyclers through e-auctioning or to Tamil Nadu Waste Management Limited (TNWML), TSDF the only authorized site by SPCB in accordance with HOWM Rules, 2016.</i> 4. <i>After unloading, spent catalyst are kept in sealed containers with proper labelling as per Rule no.17 of HOWM, Rules 2016.</i> <i>CPCL is having dedicated hazardous storage shed for storing disposable spent catalyst before transferring to TNWML site.</i> <i>Recyclable spent catalysts are shifted to warehouse immediately after unloading.</i> 5. <i>Form-3 is being maintained based on the daily stock of spent catalyst and Form-4 has filled & submitted to SPCB before 30thJune of</i>

		every year. Form-10 is maintained as and when the hazardous waste is sent outside in line with HOWM Rules, 2016. 8. A committee has been constituted by CPCL for the development of a Uniform Standard Operating Procedure (SoP) for e-auctioning of hazardous waste and other waste including spent catalyst.
21.	M/s Chennai Petroleum Corporation Ltd, Cauvery Basin Refinery, Panangudi, Nagapattinam District-611002, Tamil Nadu	CPCL, Nagapattinam informed vide mail dated 05.01.2021 that CPCL-CBR production was stopped since 01.04.2019 for the purpose of installing new gross root refinery from 1.0 MMTPA to 9.0 MMTPA. We have disposed 7.83 MT of spent resin on 30.10.2014 to TNWML (TSDF), Gummidipoondi, Chennai during the financial year 2014-15, after that no resin has been generated and disposed. Catalyst was not used for CBR operations. Form 3 and Form 4 submitted also doesn't mention generation or disposal of spent catalyst.
22.	M/s Indian Oil Corporation Limited, P.O. Mathura Refineries, Mathura-281006, Uttar Pradesh	2. Disposes off hazardous waste scientifically in accordance with HOWM Rules 2016. Spent catalyst is disposed off through authorized TSDF/ recyclers and oily sludge is disposed of through bioremediation. We also take this opportunity to clarify that generation of spent catalyst depends on the catalyst life and severity of process. Therefore, life of catalyst and hence generation of spent catalyst varies from year to year depending on process severity. Spent catalyst generation in 2017-18 was nil and in 2015-16 & 2016-17 was also minimum. However, spent catalyst generated in 2018-19 was on higher side. 4. Have adequate and dedicated storage space for hazardous wastes which are stored in properly sealed drums. 5. Maintains all mandatory records. 8. Disposes off hazardous spent catalyst by e-auctioning only through e-auctioning platform of Material & Scrap Trading Corporation, a PSU of Govt. of India as per procedure given in our material manual. In the light of NGT order, a committee has been constituted by HSE, IOCL, Refineries Headquarters, New Delhi, for the development of a uniform Standard Operating Procedure (SoP) for implementation across the refineries of IOCL.
23.	M/s Indian Oil Corporation Limited- P.O. Haldia Refinery, Dist, Medinipore (E). Pin 721606 , West Bengal	2. Hazardous waste such as Spent Catalyst, Spent Adsorbent, Waste or residues containing oil, Spent Ion Exchange resins, Residual oil sludge are disposed from Haldia Refinery through authorized Common Hazardous Waste Treatment, Storage and Disposal Facility (CHWTSDF) in scientific manner. Only Spent Catalyst generated from Hydro processing units is disposed off through SPCB authorized recyclers through e-auctioning. It is being ensured by checking HW passbook as well as Authorization/ consent copy of each and every vendor participating in E-auction process 4. Proper packaging and labelling of drums of hazardous waste is being followed. For all upcoming lots of hazardous spent catalyst, labelling shall be ensured as per Rule-17 of HOWM Rules 2016. Spent catalyst from Hydro-processing units are generated during M&I shutdown of respective units and these materials, in inner lined seal drums, are stored in designated area for their safe disposal within in permissible period. Uniform SoP being finalized to comply disposal within permissible period of 90 days from the date of generation of hazardous waste. 5. All mandatory records such as Form-3 and Form-10 are maintained

		on a regular basis. Form-4 - "Form for filling Annual Returns" is submitted to WBPCB before 30th June of every year 8. SoP for E-auctioning of hazardous and other waste including spent catalyst is in progress centrally by IOCL Refineries Headquarter - Health, Safety & Environment (HSE) and shall be finalized by Nov, 20. This uniform SoP shall be followed uniform across IOCL Refineries.
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5. With regard to individual industries, the status is reported as follows:-

“Table 3: Joint Inspection carried out of spent catalyst recyclers/re-processors/utilizers located in the state of Chhattisgarh

Sr. No.	Name & address of unit	Observations
(1)	M/s Refracast Metallurgical (P.) Ltd. (Unit-I & Unit-II) 22 Industrial Area Bhanpuri, PO: Birgaon, Raipur, Chhattisgarh	The unit was inspected on 17.12.2020 by Anil C. Ranveer (Additional Director, CPCB), Ms. Chandrika Kanwan, (Scientist, CECB, Raipur) and Sanjay Singh (Lab Assistant, CECB, Raipur). i. The unit has obtained CTO and Authorization under HOWM Rules, 2016 from CECB for recycling of spent catalyst. ii. The unit has installed Environmental Data display board but the information regarding hazardous waste generation was not updated. iii. The Unit-I was observed non-operational and under maintenance. Unit-II is operational at the time of inspection. iv. The unit has submitted Form-3 which is maintained on procurement basis of spent catalyst. v. The process of metal recycling through spent catalyst involves roasting and pyro-metallurgical process and finished product in alloy form. vi. The unit has passbook issued by CECB for procurement and recycling of hazardous waste. vii. The unit does not have a dedicated hazardous waste storage area for hazardous waste storage and for finished product. viii. Detail inspection report of M/s Refracast Metallurgical (P.) Ltd. (Unit-I & Unit-II) is attached as Annexure-IV.
(2)	M/s Refmet Technologies (P.) Ltd Village- Pacheda, Arang, District Raipur, Chhattisgarh	The unit was inspected on 17.12.2020 by Anil C. Ranveer (Additional Director, CPCB), Ms. Chandrika Kanwan, (Scientist, CECB, Raipur) and Sanjay Singh (Lab Assistant, CECB, Raipur). i. The unit has obtained CTO and Authorization under HOWM Rules, 2016 from CECB for recycling of spent catalyst. ii. The unit was not in operation at the time of inspection. iii. The unit had installed Environmental Data at entry gate but the information regarding hazardous waste generation was not updated. iv. The unit has not submitted Form-3 and Form-10 as the unit representative inform that they are not procuring spent catalyst since 2014. v. However, the unit is recycling vanadium concentrate for recovery of vanadium penta-oxide without authorization. vi. Form 4 submitted for 2019-20 verified that no procurement of spent catalyst for that year. vii. The process of metal recycling is pyro-metallurgical. viii. The unit does not have a dedicated hazardous waste storage area for hazardous waste storage. ix. Detail inspection report of M/s Refmet Technologies (P.) Ltd. is attached as Annexure-V.
(3)	M/s ArthMetallurgicals Pvt Ltd.	The unit was inspected on 18.12.2020 by Anil C. Ranveer (Additional Director, CPCB), Ms. Chandrika Kanwan, (Scientist, CECB, Raipur) and Sanjay Singh (Lab Assistant, CECB, Raipur).

	Plot No 95/2, Khasra No. 226/1, Village-Lalpur, District Raipur, Chhattisgarh	i. The unit has obtained CTO and Authorization under HOWM Rules, 2016 from CECB for recycling of spent catalyst. ii. The unit has installed Environmental Data display board but the information regarding hazardous waste generation was not updated. iii. The unit was in operation at the time of inspection. iv. The unit has submitted Form-3 which is maintained on procurement basis of spent catalyst. Record was maintained as per Form-3 of HOWM Rules, 2016. v. The spent catalyst (raw material) was found stored in MS Drums during inspection. The storage area was not properly marked. vi. The process of metal reclamation through spent catalyst involves Hydro-metallurgical process. vii. It was observed that there is gap of around 260 MT spent catalyst being reflected in annual return submitted by unit for year 2018-19. viii. The unit has maintained passbook issued by CECB for procurement and recycling of hazardous waste. ix. Detail inspection report of M/s ArthMetallurgicals Pvt Ltd. is attached as Annexure-VI.
(4)	M/s Ashtadhatu Ferro Metals Pvt. Ltd. Village Tarasiw, Gaitra Road, Tehsil-Tilda, District Raipur, Chhattisgarh	The unit was inspected on 18.12.2020 by Anil C. Ranveer (Additional Director, CPCB), Ms. Chandrika Kanwan, (Scientist, CECB, Raipur) and Sanjay Singh (Lab Assistant, CECB, Raipur). i. The unit has obtained CTO and Authorization under HOWM Rules, 2016 from CECB for recycling of spent catalyst. ii. The unit has installed Environmental Data display board but the information regarding hazardous waste generation was not updated. iii. The unit was in operation at the time of inspection. iv. The unit has submitted Form-3 which is maintained on procurement basis of spent catalyst. Record was maintained as per Form-3 of HOWM Rules, 2016. v. The spent catalyst (raw material) was found stored in MS Drums during inspection. The storage area was not properly marked. vi. The process of metal reclamation is Pyro-metallurgical process. vii. As per Annual Return (Form – 4) submitted by unit for year 2019-20 it was observed that the unit has not procured & utilized any Spent Catalyst. However, 1939.83 MT of Spent Aluminum Dross Residue and 500.11 MT of Dross & Waste from salts sludge have been utilized for manufacturing Aluminum Ingot & Synthetic Slag respectively, as per authorization. viii. The unit has maintained passbook issued by CECB for procurement and recycling of hazardous waste. ix. Detail inspection report of M/s Ashtadhatu Ferro Metals Pvt. Ltd. is attached as Annexure-VII.

6. Finally, the observations and recommendations in the report are as follows:-

“Observations:

1. As informed by SPCBs/PCCs, they have issued proper authorization in accordance of HOWM Rules, 2016, clearly mentioning the category, quantity and disposal method of hazardous waste.
2. As informed by oil refineries they are disposing off their hazardous and other waste including spent catalyst in scientific manner or to the authorized utilizers/recyclers in accordance of HOWM Rules, 2016.

3. *As informed by SPCBs they have directed Recyclers/utilizers in concerned state to ensure that procurement of hazardous and other waste including spent catalyst shall be as per authorization granted to them.*
4. *As informed by oil refineries they are ensuring proper packaging and labelling of hazardous and other waste as per Rule 17 of HOWM Rules, 2016 and also providing adequate storage facility for safe and environmentally sound management of hazardous and other wastes as per Rule 4 of HOWM Rules, 2016.*
5. *As informed by SPCBs/PCCs, they have directed generators/utilizers/recyclers of hazardous waste including spent catalyst to maintain records like Form-3, Form-4 and Form-10 as prescribed in HOWM Rules, 2016. As per the information submitted by Oil Refineries to CPCB, they are complying with the Hon'ble NGT order dated 11.09.2020 and HOWM Rules, 2016.*
6. *Compliance status submitted to CPCB by oil refineries has been verified by the APPCB, BSPCB, GPCB, KSPCB, Kerala SPCB, MPPCB and WBPCB where oil refineries are operational and found complied, but 04 SPCBs namely APCB, HSPCB, OSPCB and PPCB have not verified the compliance status of Oil refineries and 03 SPCBs namely MPCB, TNPCB and UPPCB have not submitted any compliance status of Hon'ble NGT order dated 11.09.2020 and HOWM Rules, 2016.*
7. *In regards to imposition of Financial Penalty and Environmental Compensation as recommended in Hon'ble NGT order dated 11.09.2020, status on action taken by concerned SPCBs are as below:*
 - i. *HSPCB has imposed Financial Penalty and Environmental Compensation on IOCL-Panipat Refinery for violation of HOWM Rules, 2016.
However, IOCL-Panipat Refinery have not yet deposited Financial Penalty and Environmental Compensation as imposed by HSPCB.*
 - ii. *UPPCB has not yet imposed any Financial Penalty and Environmental Compensation on IOCL-Mathura Refinery and IFFCO Bareilly for violation of HOWM Rules, 2016.*
 - iii. *BSPCB has verified quantity of hazardous waste (spent catalyst) stored more than 90 days in the premises of BPCL, Barauni Refinery during 2017-18 as 2513 MT instead of 5252 MT as informed by the unit earlier. However, BSPCB has not yet imposed any Financial Penalty and Environmental Compensation for violation of Rule 8 of HOWM Rules, 2016.*
 - iv. *GPCB has imposed Financial Penalty on Reliance, Jamnagar, Gujarat for procedural violations of HOWM Rules, 2016. However, Reliance, Jamnagar, Gujarat have not yet deposited Financial Penalty as imposed by GPCB.
GPCB has not yet imposed any Environmental Compensation on IOCL, Vadodara, Gujarat for illegal disposal of 28.835 MT of spent catalyst to unauthorized utilizer but Financial Penalty has been imposed for procedural violations of HOWM Rules, 2016.*
 - v. *APCB has not yet imposed any Financial Penalty and Environmental Compensation on IOCL-Digboi Refinery for violation of HOWM Rules, 2016*

- vi. PPCB has imposed Environmental Compensation on HPCL, Bhatinda and M/s Lakhdata Petrochem, Bhatinda for violation of HOWM Rules, 2016. However, HPCL, Bhatinda and M/s Lakhdata Petrochem, Bhatinda have not yet deposited Environmental Compensation as imposed by PPCB. Thus HPCL, Bhatinda and M/s Lakhdata Petrochem, Bhatinda have not complied with Hon'ble NGT order dated 11.09.2020.
- vii. WBPCB has imposed Financial Penalty and Environmental Compensation on IOCL, Haldia Refinery and M/s Ganesh Steel & Alloys Ltd. for violation of HOWM Rules, 2016. Both the units have deposited the Financial Penalty and Environmental Compensation as imposed by WBPCB, thus both the units have complied with Hon'ble NGT order dated 11.09.2020.
- 8. All the Oil Refineries of IOCL, HPCL, BPCL, Reliance, CPCL, Essar, NRL, MRPL and BORL have submitted different types of Standard Operating Procedure (SoP) for E-auctioning of hazardous and other waste including spent catalyst for finalization of uniform SoP across the country.
- 9. In addition to the above, CPCB found 04 recyclers namely M/s Refracast Metallurgical (P.) Ltd. (Unit-I & Unit-II), M/s Arth Metallurgicals Pvt Ltd. and M/s Ashtadhatu Ferro Metals Pvt. Ltd., who are violating Rule 4 and Rule 17 of HOWM Rules, 2016 and M/s Refmet Technologies (P.) Ltd, Raipur is found operational and processing vanadium concentrate/sludge illegally without authorization from CECB.

Recommendations:

1. SPCBs/PCCs shall be directed to ensure regular compliance of HOWM Rules, 2016 for handling, management and disposal of spent catalyst in their State. In case of inter-state movement, SPCBs/PCCs shall ensure that reconciliation of Manifest (Form-10) submitted by unit shall clearly mention category and quantity of hazardous waste including spent catalyst.
2. Financial Penalty and Environmental Compensation shall be imposed on defaulting Oil Refineries/recyclers/utilizers operating in the State of U.P., Bihar, Gujarat, Assam and Chhattisgarh by concerned SPCBs/PCCs in compliance of Hon'ble NGT order dated 11.09.2020 and violation of HOWM Rules, 2016
3. PPCB shall be directed to ensure deposition of Financial Penalty and Environmental Compensation as imposed on HPCL, Bhatinda and M/s Lakhdata Petrochem, Bhatinda for violation of HOWM Rules, 2016 in compliance of Hon'ble NGT order dated 11.09.2020.
4. HSPCB shall be directed to ensure deposition of Financial Penalty and Environmental Compensation as imposed on IOCL-Panipat Refinery for violation of HOWM Rules, 2016 in compliance of Hon'ble NGT order dated 11.09.2020
5. All the Oil refineries shall be directed to prepare uniform Standard Operating Procedure (SoP) in collaboration with all oil refineries of IOCL, HPCL, BPCL, Reliance, CPCL, Essar, NRL, MRPL and BORL for E-auctioning of hazardous and other waste

including spent catalyst across the country in accordance of HOWM Rules, 2016.

6. *Chhattisgarh Environment Conservation Board shall be directed to take necessary action on the defaulting units in accordance with HOWM Rules, 2016 for violations observed as below:*
 - (i) *M/s Refmet Technologies (P.) Ltd, Raipur, for operating without authorization for recycling of hazardous waste.*
 - (ii) *M/s Refracast Metallurgical (P.) Ltd. (Unit-I & Unit-II), M/s Arth Metallurgicals Pvt. Ltd. and M/s Ashtadhatu Ferro Metals Pvt. Ltd., for not maintaining packaging & labelling and not having adequate storage facility for safe & environmentally sound management of hazardous waste as per Rule 17 and Rule 4 of HOWM Rules, 2016 respectively.*
7. *TNPCB, MPCB and UPPCB shall be directed to submit compliance status of Hon'ble NGT order dated 11.09.2020."*

7. On due consideration, we direct further action in terms of the above recommendations, having regard to the need for compliance of HoWM Rules for disposal of spent catalyst.

8. We have also dealt with the issue of compliance of HoWM Rules earlier vide order dated 29.01.2021 in O.A. No. 804/2017, *Rajiv Narayan & Anr. v. UOI & Ors.* After considering the CPCB report on the issue of compliance status of HoWM Rules, the Tribunal observed as follows:-

"1to13.....xxx.....xxx.....xxx

14. *We have considered the report of the CPCB and appreciate the efforts in compiling all the relevant information on this important subject and direct that observations/suggestions of the CPCB with reference to the compliance by the State PCBs/PCCs may now be duly complied expeditiously, which may be further overseen by the CPCB. The CPCB may assess compensation if the State PCBs/PCCs neglect compliance, following due process, which may be recovered and utilized for restoration of the environment, by preparing an action plan to be approved by the Chairman, CPCB. Even though the report of the CPCB is exhaustive for all the States, we take on record the report furnished by the Oversight Committee for State of UP filed on 10.09.2020. As directed earlier, the MoEF&CC may follow up compliance of steps to be taken by the Central Ministries, for which purpose the CPCB may coordinate with the MoEF&CC. CPCB may impose compensation, if necessary, on the States/UTs which fail to set up TSDF or make other alternative arrangement for management of hazardous waste as per Rules. CPCB may also notify the contaminated sites, having potential for damage to the environment, in public domain, alongwith damage caused and the studies undertaken. CPCB may also ensure that hazardous waste generators/recycles/operators of TSDF follow safety protocols,*

undertake periodical audits, have onsite and offsite emergency plans to avert accidents and fire and other environmental damage.”

9. In view of the above further action may be taken by the State PCB and CPCB for compliance HoWM Rules which may also be monitored at the level of CPCB and MoEF&CC, as already directed by vide order dated 29.01.2021 in O.A. No. 804/201 supra. The CPCB may take coercive measures against the three States - Maharashtra, Tamil Nadu and UP for failing to give requisite information, after giving last opportunity to them. The Chief Secretaries of the three States may ensure compliance.

The application is disposed of.

A copy of this order be forwarded to the Chief Secretaries of States of Maharashtra, Tamil Nadu and UP, MoEF&CC, CPCB and all the State PCBs/PCCs by e-mail for compliance.

I.A. No. 309/2020 has been filed by the IOCL seeking direction to provide copy of the report of CPCB and grant time to the IOCL to file objections to the report. Report of CPCB is already available on the website. There can be no objection to the compliance of statutory rules. Due process has to be followed while taking action for violation of the statutory authorities. The IA stands disposed of accordingly.

Adarsh Kumar Goel, CP

Sudhir Agarwal, JM

Brijesh Sethi, JM

Dr. Nagin Nanda, EM

April 9, 2021
Original Application No. 67/2020
A

ADDITIONAL ANNEXURE 2

For

Setting up of additional 450 KTA of Polypropylene Production Plant within the Existing Naphtha Cracker Complex

At

**IOCL Panipat Naphtha Cracker Complex, Panipat
Village: Bal jattan
Taluk: Panipat
District: Panipat
State: Haryana**

[Project termed under Schedule 5(c) Category ‘A’ – Petro-chemical complexes (industries based on processing of petroleum fractions & natural gas and/or reforming to aromatics” as per EIA Notification 2006 and its Amendments]

Submitted by:



**INDIAN OIL CORPORATION LIMITED, PANIPAT REFINERY &
PETROCHEMICAL COMPLEX**

EIA CONSULTANT:



HUBERT ENVIRO CARE SYSTEMS (P) LTD, CHENNAI

August 2021

Annexure no.	Description	Page No.
5	Action taken report on Partially compliance	3
6	CTO, CTE	133
7	CTO compliance	156

Due to size restrictions, ATR document is attached in EDS Annexure No. E4.



HARYANA STATE POLLUTION CONTROL BOARD

SCO-55, Sec.25, HUDA,
Panipat Ph. 0180-2672037
E-mail: hspcb.pkl@sify.com



No. HSPCB/Consent/ : 313105817PITCTO3530699

Dated:14/05/2017

To,

M/s :PANIPAT NAPHTHA CRACKER A UNIT OF INDIAN OIL
VILLAGE BALJATAN TEHSIL MATLAUDA, PANIPAT HARYANA

Subject: Grant of consent to operate to M/s PANIPAT NAPHTHA CRACKER A UNIT OF INDIAN OIL.

Please refer to your application no. 3530699 received on dated 2016-12-20 in regional office Panipat. With reference to your above application for consent to operate, M/s PANIPAT NAPHTHA CRACKER A UNIT OF INDIAN OIL is here by granted consent as per following specification/Terms and conditions.

Consent Under	BOTH
Period of consent	01/04/2017 - 30/09/2021
Industry Type	Petrochemicals Manufacturing (including processing of Emulsions of oil and water)
Category	RED
Investment(In Lakh)	2795883.0
Total Land Area(Sq. meter)	0.0
Total Builtup Area(Sq. meter)	0.0
Quantity of effluent	
1. Trade	4560.0 KL/Day
2. Domestic	2342.0 KL/Day
Number of outlets	2.0
Mode of discharge	
1. Domestic	horticulture and green belt
2. Trade	Reuse & recycle
Domestic Effluent Parameters	
1. BOD	10 mg/l
2. COD	39 mg/l
3. TSS	28 mg/l
Trade Effluent Parameters	
1. BOD	16 mg/l
2. COD	62.95 mg/l
3. TSS	28 mg/l
Number of stacks	17
Height of stack	

1. NCU Heater 1	70 m
2. NCU Heater 2	70 m
3. NCU Heater 3	70 m
4. NCU Heater 4	70 m
5. NCU Heater 5	70 m
6. NCU Heater 6	70 m
7. NCU Heater 7	70 m
8. Swing Heater 1	70 m
9. Swing Heater 2	70 m
10. MEG WHB	70 m
11. CPP HRS G 1	70 m
12. CPP HRS G 2	70 m
13. CPP HRS G 3	70 m
14. CPP HRS G 4	70 m
15. CPP HRS G 5	70 m
16. UB 1	70 m
17. UB 2	70 m
Emission parameters	
1. SPM	5.12 mg/m ³
2. SPM	6.92 mg/m ³
3. SPM	8.78 mg/m ³
4. SPM	6.70 mg/m ³
5. SPM	6.09 mg/m ³
6. SPM	8.61 mg/m ³
7. SPM	6.79 mg/m ³
8. SPM	7.73 mg/m ³
9. SPM	9.10 mg/m ³
10. SPM	8.70 mg/m ³
11. SPM	2.53 mg/m ³
12. SPM	2.98 mg/m ³
13. SPM	5.82 mg/m ³
14. SPM	7.23 mg/m ³
15. SPM	4.61 mg/m ³
16. SPM	8.42 mg/m ³
17. SPM	6.77 mg/m ³
18. NOX	46.52 mg/m ³
19. NOX	63.16 mg/m ³
20. NOX	56.41 mg/m ³
21. NOX	.. mg/m ³
22. NOX	70.35 mg/m ³
23. NOX	.. mg/m ³
24. NOX	42.79 mg/m ³
25. NOX	78.16 mg/m ³
26. NOX	81.11 mg/m ³

27. NOX	63.54 mg/m ³
28. NOX	47.69 mg/m ³
29. NOX	72.43 mg/m ³
30. NOX	65.19 mg/m ³
31. NOX	76.82 mg/m ³
32. NOX	61.54 mg/m ³
33. NOX	71.63 mg/m ³
34. NOX	67.59 mg/m ³
35. SOX	19.73 mg/m ³
36. SOX	25.06 mg/m ³
37. SOX	21.83 mg/m ³
38. SOX	.. mg/m ³
39. SOX	13.46 mg/m ³
40. SOX	.. mg/m ³
41. SOX	23.14 mg/m ³
42. SOX	14.52 mg/m ³
43. SOX	19.64 mg/m ³
44. SOX	22.49 mg/m ³
45. SOX	26.01 mg/m ³
46. SOX	10.75 mg/m ³
47. SOX	15.27 mg/m ³
48. SOX	11.42 mg/m ³
49. SOX	13.67 mg/m ³
50. SOX	18.52 mg/m ³
51. SOX	12.79 mg/m ³
Product Details	
1. PP	1750 Metric Tonnes/day
2. Total Polymer	3600 Metric Tonnes/day
3. MEG	900 Metric Tonnes/day
4. Benzene	600 Metric Tonnes/day
5. 1, 3 Butadiene	200 Metric Tonnes/day
6. Butene 1	60 Metric Tonnes/day
Capacity of boiler	
1. UB 1	171300000 Kcalores/hr
2. UB 2	171300000 Kcalores/hr
Type of Furnace	
1. NCU Heater 1	55.6 MMKcal/hr
2. NCU Heater 2	116.6 MMKcal/hr
3. NCU Heater 3	116.6 MMKcal/hr
4. NCU Heater 4	116.6 MMKcal/hr
5. NCU Heater 5	116.6 MMKcal/hr
6. NCU Heater 6	116.6 MMKcal/hr
7. NCU Heater 7	116.6 MMKcal/hr
8. HRSG 1	36.2 MMKcal/hr

9. HRSG 2	36.2 MMKcal/hr
10. HRSG 3	36.2 MMKcal/hr
11. HRSG 4	36.2 MMKcal/hr
12. HRSG 5	36.2 MMKcal/hr
13. Swing A	16.4 MMKcal/hr
14. Swing B	16.4 MMKcal/hr
15. WHB MEG	5.44 MMKcal/hr
Type of Fuel	
1. Furnace Oil	6.5 Ton/day
2. Gas	2166 Ton/day
Raw Material Details	

Regional Officer, Panipat
Haryana State Pollution Control Board.

Terms and conditions

1. The applicants shall maintain good house keeping both within factory and in the premises. All hose pipelines valves, storage tanks etc. shall be leak proof. In plant allowable pollutants levels, if specified by State Board should be met strictly.
2. The applicant/company shall comply with and carry out directive/orders issued by the Board in this consent order at all subsequent times without negligence of his /its part. The applicant/company shall be liable for such legal action against him as per provision of the law/act in case of violation of any order/directives. Issued at any time and or non compliance of the terms and conditions of his consent order.
3. The applicant shall make an application for grant of consent at least 90 days before the date of expiry of this consent.
4. Necessary fee as prescribed for obtaining renewal consent shall be paid by the applicant alongwith the consent application.
5. If due to any technological improvement or otherwise this Board is of opinion that all or any of the conditions referred to above required variation (including the change of any control equipment either in whole or in part) this Board shall after giving the applicant an opportunity of being heard vary all or such condition and there upon the applicant shall be bound to comply with the conditions so varied.
6. Nothing in this consent shall be deemed to preclude the institution of any legal action nor relieve the applicant from any responsibility, liabilities or penalties to which the applicant is or may be subject.
7. The industry shall provide adequate arrangement for fighting the accidental leakages, discharge of any pollutants gas/liquids from the vessels, mechanical equipment etc. which are likely to cause environment pollution.
8. The consent being issued by the Board as above doesn't imply that unit performance conforms to law as required. The consent is being issued provisionally only with a view to accommodate the unit to provide it an opportunity to modify its operation immediately so as bring them in conformity with the law of the land.
9. The industry shall comply noise pollution (Regulation and control) Rules, 2000.

10. The industry shall comply all the direction/Rules/Instructions as may be issued by the MOEF/CPCB/HSPCB from time to time.
11. The industry shall ensure that various characteristics of the effluents remain within the tolerance limits as specified in EPA Standard and as amended from time to time and at no time the concentration of any characteristics should exceed these limits for discharge.
12. The industry would immediately submit the revised application to the Board in the event of any change in the raw material in process, mode of treatment/discharge of effluent. In case of change of process at any stage during the consent period, the industry shall submit fresh consent application alongwith the consent to operate fee, if found due, which may be on any account and that shall be paid by the industry and the industry would immediately submit the consent application to the Board in the event of any change during the year in the raw material, quantity, quality of the effluent, mode of discharge, treatment facilities etc.
13. The officer/official of the Board shall reserve the right to access for the inspection of the industry in connection with the various process and the treatment facilities. The consent to operate is subject to review by the Board at any time.
14. Permissible limits for any pollutants mentioned in the consent to operate order should not exceed the concentration permitted in the effluent by the Board.
15. The industry shall pay the balance fee, in case it is found due from the industry at any time later on.
16. If the industry fails to adhere to any of the conditions of this consent to operate order, the consent to operate so granted shall automatically lapse.
17. If the industry is closed temporarily at its own, they shall inform the Board and obtain permission before restart of the unit.
18. The industry shall comply all the Directions/ Rules/Instructions issued from time to time by the Board.

Specific Conditions :

1. That the unit will submit the analysis report on yearly basis and will keep the parameters within prescribed limit as laid down under EP Act, 1986.
2. That the unit provide separate energy meter on their ETP/APCM and will maintain the logbook for energy consumption and chemical consumption.
3. That the unit will provide interlocking arrangement of DG set with APCM/ETP/STP and shall have separate DG set to ensure regular and effective running of pollution control devices.
4. That the unit will adopt cleaner technology thereby reducing pollution load of the unit
5. That the unit will not made any expansion within existing plant without prior permission of the Board.
6. That the unit will not add any water and air polluting activity which results in increase in pollution load of the industry without prior permission of the Board.
7. That the unit will apply for renewal of Consent to operate (CTO) 90 days earlier before the expiry previous consent to operate obtained from the Board.
8. That the unit will deposit the balance consent CTO fee as per schedule.
9. That unit will renewed the agreement with GEPIL for disposal of hazardous waste before expiry of previous agreement.
10. That unit will submit the compliance report of conditions of consent to operate granted by the Board yearly failing which consent to operate granted by the Board will be revoked.
11. That the CTO so granted shall become invalid in case of violation of any of the

Environment Laws/policy of the Board/Rules/conditions.

*Regional Officer, Panipat
Haryana State Pollution Control Board.*



Haryana State Pollution Control Board,
C-11, Sector 6, Panchkula.

Regd./A.D.

No. HSPCB/NOC/2004/415

Dated: 21-10-04

To

✓ M/s Panipat Refinery
Indian Oil Corporation Ltd.,
Panipat Refinery,
Panipat(Haryana)

Sub: Issue of "No Objection Certificate/Consent to Establish.

Please refer to your NOC application received in this office on 28.6.2004, on the subject cited above.

Under the Authority of the Haryana State Pollution Control Board vide its agenda item No. 47.8 dated 28.4.83 sanction to the issue of "No Objection Certificate" with respect to Pollution Control of Water and Air is hereby accorded for setting up of unit in the name of **M/S Panipat Refinery, Indian Oil Corporation, Vill.Baljatan, Panipat** for the manufacturing of **Naphtha Cracker Complex** including Downstream Polymer Units, with the following terms and conditions: -

1. The industry has declared that the quantity of effluent shall be Nil for domestic effluent Nil Lts/day for trade effluent and the same should not exceed.
2. The above "No Objection Certificate" is valid for two years from the date of its issue to be extended for another one year at the discretion of the Board or till the time the unit starts its trial production whichever is earlier. The unit will have to set up the plant and obtain consent during this period.
3. The officer/official of the Board shall have the right to access and inspection of the industry in connection with the various processes and the treatment facilities being provided simultaneously with the construction of building/machinery. The effluent should conform the effluent standards as applicable.
4. That necessary arrangement shall be made by the industry for the control of Air Pollution before commissioning the plant. The emitted pollutants will meet the emission and other standards as laid/will be prescribed by the Board from time to time.
5. The applicant will obtain consent under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21/22 of the Air (Prevention & Control of Pollution) Act, 1981 as amended to-date-even before starting trial production.
6. The above NOC is further subject to the conditions that the unit complies with all the laws/rules/decisions and competent directions of the Board/Government and its functionaries in all respects before commissioning of the operation and during its actual working strictly.
7. No in-process or post-process objectionable emission or the effluent will be allowed if the scheme furnished by the unit turns out to be defective in any actual experience.
8. The HSEB will give only temporary connection and permanent connection to the unit will be given by the HSEB after verifying the consent granted by the Board both under Water Act and Air Act.
9. Unit will construct the proper septic tank/soakage pit as per Bureau of Indian Standards.
10. Unit will raise the stack height of DG Set/Boiler as pr Board's norms.
11. Unit will submit the copy of registered partnership deed along with form 'C' and form 'A' at the time of applying consent indicating therein the received number and name and addresses of the partners.
12. Unit will maintain proper logbook of Water meter/sub meter before/after commissioning.
13. That in the case of an industry or any other process the activity is located in an area approved and that in case the activity is sited in an residential or institutional or commercial or agricultural area the necessary permission for siting such industry and process in an residential or institutional or commercial or agricultural area or controlled area under Town and Country Planning laws c

Municipal laws has to be obtained from the competent Authority in law permitting this deviation and be submitted in original with the request for consent to operate.

14. That there is no discharge directly or indirectly from the unit or the process into any interstate river or Yamuna River or River Ghaggar either through a direct flow or indirectly.
15. That the industry or the unit concerned is not sited within any prohibited distances according to the Environmental Laws and Rules, Notification, Orders and Policies of Central Pollution control Board and Haryana State Pollution Control Board.
16. That no earlier improper NOC in violation of the rules was ever issued to the unit.
17. That the unit is discharging its sewage or trade effluent into the public sewer meant to receive trade effluent from industries etc. and the permission of the Competent Authority owing and operating such public sewer giving permission to his unit is enclosed.
18. That if at any there is adverse report from any adjoining neighbor or any other aggrieved party or Municipal Committee or Zila Parishad or any other public body against the unit's pollution; the NOC so granted shall be revoked.
19. That all the financial dues required under the rules and policies of the Board have been deposited in full by the unit for this No Objection Certification (NOC)(Consent to Establish)(Consent and the proof of such deposits is enclosed.
20. That the unit is not already in operation if the case relates to the issue of first NOC to the unit.
21. That the unit has complied with all the Hazardous Waste Rules relating to Handling, Storage and Disposal as required by Central Pollution Control Board and Haryana State Pollution Control Board.
22. In case of change of name from previous NOC granted, fresh NOC fee shall be levied.
23. The unit shall provide green belt of adequate width before commissioning.
24. In case of unit does not comply with the above conditions within the stipulated period, NOC will be revoked.
25. Industry should adopt water conservation measures to ensure minimum consumption of water in their Process. Ground water based proposals of new industries should get clearance from Central Ground Water Authority for scientific development of previous resource.
26. This NOC would be invalid in case the unit has gone into production.
27. This NOC would be invalid if it is established in the non-conforming area.
28. That the unit will take all other clearances from concerned agencies, whenever required.

Other Specific conditions:

29. That the unit will comply with the condition mentioned in Haldia Petro Chemical Project for Environmental Clearance by Ministry of Environment, Govt. of India vide their letter No.J 11011/7/92-1A-II(I) dated 17.9.1992.
30. That the unit will comply with the conditions imposed by the State Government for site of clearance from environmental angle vide their letter no.279 dated 8.9.2004.

Remarks

The emission/effluent standards for Petro Chemical Industries are being finalized by CPCB/MOEF and unit will meet the norms required as per new Notification likely to come which are given as per the following conditions mentioned Sr.No.31 to 67. The unit may keep in view these conditions which are as per the new notification likely to come and are most stringent than the conditions of MOEF and will ^{while} designing and purchasing the equipments these may be kept in view.

31. The proposed Naphtha Cracker unit & downstream polymer units at Panipat should ensure zero discharge of effluent as already committed in their EIA report.
32. No trade effluent even after treatment shall be allowed to be discharged into Thirana Drain as this drain ultimately lead to river Yamuna.
33. The detailed treatment scheme of the state of art effluent treatment plant involving latest technology for 750M3/hour, should be submitted and trade effluent should be treated to such an extent that it can be reused in their process so as to ensure zero discharge. ETP should be designed in such a way that each stream pertaining toxic and organic effluent treated separately so as to ensure complete/proper treatment. The ETP mainly involves (UASP) Biomethanisation, Biotowers, equalization Tanks, Oil and Grease removal by TPI, Dissolved Air Floatation system, Bio-tower -attached aeration system, Aeration Tanks, Secondary clarifiers, Activated Carbon, Tertiary Treatment & reuse of effluent in the process.
34. The proposed Naphtha Cracker unit at Panipat should have atleast 50 meters wide green belt all around and should have 100 meters wide green belt all around in the pre-dominant down wind direction and treated effluent should be used in the green belt.

35. The proposed Naphtha Cracker Unit should also make efforts to develop 300-500 Acres for tree plantation for utilizing the total treated effluent generated from Petro Chemical Complex.
36. The Sulphur dioxide emission being critical parameter for Panipat area, the proposed Naphtha Cracker unit should restrict the Sulphur content of liquid fuel i.e. fuel oil below 0.5%. The efforts should also be made to use maximum of fuel gas/Naphtha as fuel to ensure less emission of Sulphur dioxide.
37. The proposed Naphtha Cracker Unit should have stack height of approximately 90 meters for utility boiler 1 & 2 as per the CPCB norms to ensure proper dispersion of Sulphur dioxide.
38. Low No. burners should be used to ensure low No. emissions.
39. All new standards/norms as being revised by the Central Pollution Control Board for Petrochemical Plants shall be applicable for the proposed Naphtha Cracker and downstream Polymer units at Panipat.
40. All critical stacks should have on line analysers and results supplied to HSPCB regularly.
41. The unit should have nine Ambient Air Quality Monitoring Stations (Three inside and six outside the Complex) for continuous monitoring of Ambient Air Quality and latest specification Analyser should be used for continuous monitoring.
42. The unit should provide impervious/non-leachate secured land fill site for storage of Hazardous Waste for atleast 5 years capacity from where the Hazardous Waste should be sent to Common Hazardous Waste Treatment & Disposal facility.
43. No. emissions for Gas firing/Liquid firing should not exceed 150 (Low No.) mg/M³.
44. The sulphur content in the feed for liquid firing should not exceed 0.5%.
45. The particulate matter (PM) in case of liquid firing or decoking operations should not exceed 100 mg/m³.
46. Measured emissions are to be normalized to 3% oxygen.
47. The start-up and shut-down conditions should be informed to the HSPCB and to be planned such that to avoid the period having severe inversion conditions.
48. The Particulate matter emission for more than 15 Ton/hr capacity should not exceed 150 mg/m³.
49. Conventional standards already prescribed for Diesel set generators should be followed.
50. The design for flare shall conform to 98% destruction/reduction efficiency and monitored before and after the planned turn around of the facility.
51. No halogenated organics are present, the respective streams may be incinerated, if there are no technically feasible or economical viable reduction/recovery options.
52. Any stream contains organic-carbon, other than halogenated, shall be connected to proper flaring system, if not to a recovery device or an incinerator.
53. There shall not be any visible emissions/smoke etc. except in start up and shut down operations. Time of start up/shut down to be reported to HSPCB in advance.
54. The process emissions (organic) nonvoc's, these shall be common vent TOC standard for other than top priority, pollutants will be applicable.
55. For VOCs which are proven Carcinogen, pollutant specific limits as specified by CPCB/MOEF shall apply.
56. For VOCs top priority pollutants, Common vent standard for top priority pollutants shall apply & LDAR programme to be followed.
57. For other VOCs, Common vent standard for medium & just priority pollutants shall apply and LDAR programme to be followed.
58. Inorganic emissions, if any, such as chlorine, HCl, Ammonia, HCN phosgene, Hydrogen sulphide, the standard as prescribed by CPCB/MOEF shall apply.
59. The vent standards & equipment requirement for proven carcinogens if any are as under :-
 - i) Benzene - to be routed to oxidizer (Introduction in the middle of the flame of a furnace or connected to flare). In case subjected to recovery devices, the vent limit is 1 mg/Nm³.
 - ii) Ethylene oxide - Re-absorber vent shall be routed to oxidation reactor. Compulsory flasher before CO₂ purging to recover organics. Vent concentration limit for EO - Absorber as control device: 5 mg/m³ Combustion control: 1 mg/m³.
60. The equipment requirement for carcinogens shall be following :

Stop valves : Spindle bonnets of valves and gate valves shall be sealed by utilizing a bellows in connection with a downstream safety-packing gland or by some other equal means.

Flanges : flanged joints shall be equipped with high-grade seals, if cannot be eliminated by welded joints.

Pump shaft seals : Double mechanical seals, below seal with auxiliary packing, double diaphragm canned pumps shall be put in place.

Sampling stations : Sampling stations shall be encapsulated or equipped with stop valves, which do not allow emissions except during sampling, then, the run out sample shall be either fed back or completely collected. Decanting liquid organic substances: When decanting liquid organic substances, special emission reduction measures shall be applied i.e. vapour balance or exhaustion and subsequent feeding of the waste gas to a waste gas purification installation. Pressure relief : The rupture disk to flare in case of non-halogens.

61. The process vent standard for top priority chemicals

- total top priority pollutants from a stack/vent shall not exceed 20 mg/Nm³ on dry basis corrected to 3% Wt. Oxygen. While complying with their individual vent limits, if any.

62. The process vent standard for organic chemicals (includes non-VOCs and all possible VOCs) – all the point process emissions need to be collected and converted into other useful forms or controlled by absorption, thermal destruction, biological or any combination of these before disposal. The vent standard for organic chemical is TOC < 100mg/Nm³ on dry basis corrected at 3% wt. Oxygen; or 95% reduction from its source strength, whichever is stringent, while complying with their individual or group complying limits, if any.

63. LDAR programme for quantification and control for fugitive emissions shall be as prescribed in the standards of petrochemical shall be followed.

64. The standards for transfer operations as laid down for petrochemical plant by CPCB/MOEF shall be followed.

65. The standards for storage tanks as prescribed for petrochemical plant by CPCB/MOEF shall be followed.

66. All the guidelines as prescribed for petrochemical plants by CPCB/MOEF shall be followed.

67. The burden of compliance proof regarding norms for emission monitoring lies with the industry/unit. The unit shall keep complete record of monitoring logbooks and inventory reports. The accredited auditor/auditor endorsed by the HSPCB shall verify the compliance every six months and appraise the HSPCB within 15 days which shall be cross checked by officials of HSPCB.

Scientist 'B'-3 (HQ),
for Chairman
Haryana State Pollution
Control Board, Panchkula

Enclst.No. HSPCB/NOG/2004/

Dated:

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

1. The Regional officer, Haryana State Pollution Control Board, Bahadurgarh. *Panchkula*
2. The Executive Engineer (OP) Division, HVPN, Bahadurgarh. *Panchkula*

Scientist 'B'-3 (HQ),
for Chairman
Haryana State Pollution
Control Board, Panchkula.



**HARYANA STATE POLLUTION CONTROL
BOARD**

SCO-55, Sec.25, HUDA, Panipat Ph. 0180-2672037

Website: www.hspcb.gov.in E-Mail - hspcb.pkl@sifymail.com

Telephone No.: 0172-2577870-73



No. HSPCB/Consent/ : 313105818PITCTE5290266

Dated:26/09/2018

To.

**M/s : PANIPAT NAPHTHA CRACKER A UNIT OF INDIAN OIL
VILLAGE BALJATAN TEHSIL MATLAUDA, PANIPAT HARYANA
PANIPAT
132140**

**Sub. : Grant of consent to Establish to M/s PANIPAT NAPHTHA
CRACKER A UNIT OF INDIAN OIL**

Please refer to your application no. 5290266 received on dated 2018-08-10 in regional office Panipat.

With reference to your above application for consent to establish, M/s PANIPAT NAPHTHA CRACKER A UNIT OF INDIAN OIL is hereby granted consent as per following specification/Terms and conditions.

Consent Under	AIR/WATER
Period of consent	10/08/2018 - 09/08/2023
Industry Type	Petrochemicals Manufacturing (including processing of Emulsions of oil and water)
Category	RED
Investment(In Lakh)	2795883.0
Total Land Area (Sq. meter)	3060000.0
Total Builtup Area (Sq. meter)	291000.0
Quantity of effluent	
1. Trade	0.5 KL/Day
2. Domestic	0.0 KL/Day
Number of outlets	0.0
Mode of discharge	
1. Domestic	
2. Trade	ETP
Permissible Domestic Effluent Parameters	
1. NA	
Permissible Trade Effluent Parameters	
1. BOD	30 mg/l
2. COD	250 mg/l
3. TSS	100 mg/l

4. sulphide	2.0 mg/l
5. cyanide as CN	2.0 mg/l
6. Hexavalent Chromium	0.1 mg/l
7. Fluoride as F	15 mg/l
Number of stacks	1
Height of stack	
1. NA	
Permissible Emission parameters	
1. NA	
Capacity of boiler	
1. NA	Ton/hr
Type of Furnace	
1. NA	
Type of Fuel	
1. NA	

Regional Officer, Panipat

Haryana State Pollution Control Board.

Terms and conditions

1. The industry has declared that the quantity of effluent shall be 50.5 KL/Day i.e 0.5KL/Day for Trade Effluent, 50 KL/Day for Cooling, 0 KL/Day for Domestic and the same should not exceed .
2. The above 'Consent to Establish' is valid for 60 months from the date of its issue to be extended for another one year at the discretion of the Board or till the time the unit starts its trial production whichever is earlier. The unit will have to set up the plant and obtain consent during this period.
3. The officer/official of the Board shall have the right to access and inspection of the industry in connection with the various processes and the treatment facilities being provided simultaneously with the construction of building/machinery. The effluent should conform the effluent standards as applicable
4. That necessary arrangement shall be made by the industry for the control of Air Pollution before commissioning the plant. The emitted pollutants will meet the emission and other standards as laid/will be prescribed by the Board from time to time.
5. The applicant will obtain consent under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21/22 of the Air (Prevention & Control of Pollution) Act, 1981 as amended to-date-even before starting trial production
6. The above Consent to Establish is further subject to the conditions that the unit complies with all the laws/rules/decisions and competent directions of the Board/Government and its functionaries in all respects before commissioning of the operation and during its actual working strictly.
7. No in-process or post-process objectionable emission or the effluent will be allowed, if the scheme furnished by the unit turns out to be defective in any actual experience
8. The Electricity Department will give only temporary connection and permanent connection to the unit will be given after verifying the consent granted by the Board, both under Water Act and Air Act.

9. Unit will raise the stack height of DG Set/Boiler as per Board's norms.
10. Unit will maintain proper logbook of Water meter/sub meter before/after commissioning.
11. That in the case of an industry or any other process the activity is located in an area approved and that in case the activity is sited in an residential or institutional or commercial or agricultural area, the necessary permission for siting such industry and process in an residential or institutional or commercial or agricultural area or controlled area under Town and Country Planning laws CLU or Municipal laws has to be obtained from the competent Authority in law permitting this deviation and be submitted in original with the request for consent to operate.
12. That there is no discharge directly or indirectly from the unit or the process into any interstate river or Yamuna River or River Ghaggar.
13. That the industry or the unit concerned is not sited within any prohibited distances according to the Environmental Laws and Rules, Notification, Orders and Policies of Central Pollution control Board and Haryana State Pollution Control Board.
14. That of the unit is discharging its sewage or trade effluent into the public sewer meant to receive trade effluent from industries etc. then the permission of the Competent Authority owing and operating such public sewer giving permission letter to his unit shall be submitted at time of consent to operate.
15. That if at any time, there is adverse report from any adjoining neighbor or any other aggrieved party or Municipal Committee or Zila Parishad or any other public body against the unit's pollution; the Consent to Establish so granted shall be revoked.
16. That all the financial dues required under the rules and policies of the Board have been deposited in full by the unit for this Consent to Establish.
17. In case of change of name from previous Consent to Establish granted, fresh Consent to Establish fee shall be levied.
18. Industry should adopt water conservation measures to ensure minimum consumption of water in their Process. Ground water based proposals of new industries should get clearance from Central Ground Water Authority for scientific development of previous resource.
19. That the unit will take all other clearances from concerned agencies, whenever required.
20. That the unit will not change its process without the prior permission of the Board.
21. That the Consent to Establish so granted will be invalid, if the unit falls in Aravali Area or non conforming area.
22. That the unit will comply with the Hazardous Waste Management Rules and will also make the non-leachate pit for storage of Hazardous waste and will undertake not to dispose off the same except for pit in their own premises or with the authorized disposal authority.
23. That the unit will submit an undertaking that it will comply with all the specific and general conditions as imposed in the above Consent to Establish within 30 days failing which Consent to Establish will be revoked.
24. That unit will obtain EIA from MoEF, if required at any stage.
25. In case of unit does not comply with the above conditions within the stipulated period, Consent to Establish will be revoked.
26. That unit will obtain consent to operate from the board before the start of product activity.

Specific Conditions

Other Conditions :

1. That the Unit will make expansion for Styrene Recovery Unit of Capacity : 20 KTA and Ethylene Recovery Unit : 18.8 KTA, in addition one Harton sphere and one mounted bullet having 2800 m3 each for storage of Hydrogenated C4 Mix / C4 Raffinate. Different products post Styrene /Ethylene projects are Ethane : 73.6 KTA, Propane : 4.9 KTA and Propylene : 12 KTA and will produce Demethaniser Net Overhead as refinery fuel gas 260 MT/Day, C2 product to Ethylene Fractionator 225 MT/Day, C3 Plus product to depropanizer 102 MT/Day and Acid gases and water 40 MT/Day granted by MOEF in Environment Clearance.
2. That the unit will comply with the conditions of Environmental clearance granted by MOEF vide F.No.J/11011/268/2014-IA.II(I) dated 22.02.2017.
3. That the unit will comply with the provisions of Water Act, 1974, Air Act, 1981 and HWM Rules, 2016.
4. That the unit will obtained consent to operate form the Board for its expansion process.
5. That the unit will comply with the directions issued by MOEF/CPCB/HSPCB/NGT.

Regional Officer, Panipat
Haryana State Pollution Control Board.





**HARYANA STATE POLLUTION CONTROL
BOARD**

SCO-55, Sec.25, HUDA, Panipat Ph. 0180-2672037

Email:- hspcbopr@gmail.com

Website: www.hrocmms.nic.in E-Mail - hspcbho@gmail.com

Telephone No.: 0172-2577870-73



No. HSPCB/Consent/ : 313105820PITCTE6384165

Dated:21/05/2020

To.

**M/s : PANIPAT NAPHTHA CRACKER A UNIT OF INDIAN OIL
VILLAGE BALJATAN TEHSIL MATLAUDA, PANIPAT HARYANA
PANIPAT
132140**

**Sub. : Grant of consent to Establish to M/s PANIPAT NAPHTHA
CRACKER A UNIT OF INDIAN OIL**

Please refer to your application no. 6384165 received on dated 2020-02-26 in regional office Panipat.

With reference to your above application for consent to establish, M/s PANIPAT NAPHTHA CRACKER A UNIT OF INDIAN OIL is hereby granted consent as per following specification/Terms and conditions.

Consent Under	AIR/WATER
Period of consent	21/05/2020 - 20/05/2025
Industry Type	Petrochemicals Manufacturing (including processing of Emulsions of oil and water)
Category	RED
Investment(In Lakh)	2795883.0
Total Land Area (Sq. meter)	3060000.0
Total Builtup Area (Sq. meter)	2910000.0
Quantity of effluent	
1. Trade	4519.0 KL/Day
2. Domestic	120.0 KL/Day
Number of outlets	0.0
Mode of discharge	
1. Domestic	ZLD (Reuse and Recycle after ETP treatment)
2. Trade	ZLD (Reuse and Recycle after ETP treatment)
Permissible Domestic Effluent Parameters	
1. BOD	30 mg/l
2. COD	250 mg/l
3. TSS	100 mg/l
4. ph	5.59.0

5. O & G	10 mg/l
Permissible Trade Effluent Parameters	
1. BOD	30 mg/l
2. COD	250 mg/l
3. TSS	100 mg/l
4. pH	6.58.5
5. Phenol	5 mg/l
6. Sulphide (as S)	2 mg/l
7. Cyanide (as CN)	0.2 mg/l
8. Fluoride (as F)	15 mg/l
9. Hexavalent Chromium (CR+6)	0.1 mg/l
10. Total Chromium (as CR)	2 mg/l
Number of stacks	1
Height of stack	
1. NCU Heater Stack	60 meters from ground
Permissible Emission parameters	
1. SPM	5 mg/m ³
2. SOX	50 mg/m ³
3. NOX	350 mg/m ³
4. CO	100 mg/M ³
Capacity of boiler	
1. NA	Ton/hr
Type of Furnace	
1. NCU Heater	55.6 MMKCal/Hr
Type of Fuel	
1. Gas	108 Ton/day

Regional Officer, Panipat
Haryana State Pollution Control Board.

Terms and conditions

- The industry has declared that the quantity of effluent shall be 211.2 KL/Day i.e 211.2KL/Day for Trade Effluent, 0 KL/Day for Cooling, 0 KL/Day for Domestic and the same should not exceed .
- The above 'Consent to Establish' is valid for 60 months from the date of its issue to be extended for another one year at the discretion of the Board or till the time the unit starts its trial production whichever is earlier. The unit will have to set up the plant and obtain consent during this period.
- The officer/official of the Board shall have the right to access and inspection of the industry in connection with the various processes and the treatment facilities being provided simultaneously with the construction of building/machinery. The effluent should conform the effluent standards as applicable

4. That necessary arrangement shall be made by the industry for the control of Air Pollution before commissioning the plant. The emitted pollutants will meet the emission and other standards as laid/will be prescribed by the Board from time to time.
5. The applicant will obtain consent under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and under section 21/22 of the Air (Prevention & Control of Pollution) Act, 1981 as amended to-date-even before starting trial production
6. The above Consent to Establish is further subject to the conditions that the unit complies with all the laws/rules/decisions and competent directions of the Board/Government and its functionaries in all respects before commissioning of the operation and during its actual working strictly.
7. No in-process or post-process objectionable emission or the effluent will be allowed, if the scheme furnished by the unit turns out to be defective in any actual experience
8. The Electricity Department will give only temporary connection and permanent connection to the unit will be given after verifying the consent granted by the Board, both under Water Act and Air Act.
9. Unit will raise the stack height of DG Set/Boiler as per Board's norms.
10. Unit will maintain proper logbook of Water meter/sub meter before/after commissioning.
11. That in the case of an industry or any other process the activity is located in an area approved and that in case the activity is sited in an residential or institutional or commercial or agricultural area, the necessary permission for siting such industry and process in an residential or institutional or commercial or agricultural area or controlled area under Town and Country Planning laws CLU or Municipal laws has to be obtained from the competent Authority in law permitting this deviation and be submitted in original with the request for consent to operate.
12. That there is no discharge directly or indirectly from the unit or the process into any interstate river or Yamuna River or River Ghaggar.
13. That the industry or the unit concerned is not sited within any prohibited distances according to the Environmental Laws and Rules, Notification, Orders and Policies of Central Pollution control Board and Haryana State Pollution Control Board.
14. That of the unit is discharging its sewage or trade effluent into the public sewer meant to receive trade effluent from industries etc. then the permission of the Competent Authority owing and operating such public sewer giving permission letter to his unit shall be submitted at time of consent to operate.
15. That if at any time, there is adverse report from any adjoining neighbor or any other aggrieved party or Municipal Committee or Zila Parishad or any other public body against the unit's pollution; the Consent to Establish so granted shall be revoked.
16. That all the financial dues required under the rules and policies of the Board have been deposited in full by the unit for this Consent to Establish.
17. In case of change of name from previous Consent to Establish granted, fresh Consent to Establish fee shall be levied.
18. Industry should adopt water conservation measures to ensure minimum consumption of water in their Process. Ground water based proposals of new industries should get clearance from Central Ground Water Authority for scientific development of previous resource.
19. That the unit will take all other clearances from concerned agencies, whenever required.
20. That the unit will not change its process without the prior permission of the Board.

21. That the Consent to Establish so granted will be invalid, if the unit falls in Aravali Area or non conforming area.
22. That the unit will comply with the Hazardous Waste Management Rules and will also make the non-leachate pit for storage of Hazardous waste and will undertake not to dispose off the same except for pit in their own premises or with the authorized disposal authority.
23. That the unit will submit an undertaking that it will comply with all the specific and general conditions as imposed in the above Consent to Establish within 30 days failing which Consent to Establish will be revoked.
24. That unit will obtain EIA from MoEF, if required at any stage.
25. In case of unit does not comply with the above conditions within the stipulated period, Consent to Establish will be revoked.
26. That unit will obtain consent to operate from the board before the start of product activity.

Specific Conditions

Other Conditions :

1. The unit will comply with the ZLD condition and will not discharge any effluent including storm water , out side the premises of the unit .
2. The unit will not start operation of the Expansion Project prior to the commissioning of the Treatment And Utilization Facility proposed for the storm water use in make up of colling tower to be completed by March 2022.
3. Unit will adhere to the proposed timelines of various works submitted vide letter no PNC/HSE/CTE/2020 dated 18.05.2020 and also submitted monthly progress report to the HSPCB.
4. Unit will also take preventive measures in advance and install the required treatment facility for the storm water generated from the proposed project prior to the commissioning of the proposed project being there are contamination due to open plant and machinery and Storm water is also a Source of waste water in Petrochemical units.
5. The unit will treat the Storm water up to the prescribed standards applicable for the use in the unit and utilize the storm water with in premises after treatment and will not discharge it outside the premises.
6. Unit will comply with the Conditions of EC and submit Six monthly compliance report to HSPCB.
7. That the unit shall keep all the parameters within the prescribed limits and shall comply with all the Norms and Rules as prescribed in the Acts.
8. That the unit will comply with all the provisions of Hazardous Waste Rules and will make agreement with GEPIL and Authorized recycler of the Board for scientific disposal of Hazardous Waste.
9. That unit will obtained Prior CTO before the commissioning of Expansion plant .
10. That unit will use only Gasous fuel in proposed NCU Heater .
11. That the unit will install Electromagnetic flow meter on all the sources of Raw water and on the points of reuse and recylce of the unit and maintained the logbook of the same .
12. The unit will install PTZ Cameras as per CPCB guidelines for ZLD unit and connect them with the servers of CPCB and HSPCB with in 90 days .
13. CTE Expansion is for the increase in production of High Density Poly Ethylene (HDPE) from 900 MTD to 1053MTD, Mono Ethylene Glycol (MEG) from 900 MTD to 1275 MTD, Polypropylene from 1800 MTD to 2340 MTD and New plant of Catalyst Manufacturing unit of capacity 4500 MTD .
14. There will be increase in the total raw water consumption from 43512 KLD to 47955 KLD and Raw water requirement will be met through Irrigation Canal supply .
15. There will be increase in the Trade effluent generation from 4320 KLD (180 m3/hr) to 4519 KLD (188.3 m3/hr) , which should be treated in the existing ETP of capacity= 4800 KLD (200 m3/hr)
16. There will be no increase in domestic effluent .
17. The unit will install online emission monitoring system on the NCU Heater and connect to the servers of CPCB and HSPCB on commissioning of the proposed project .
18. That the CTE expansion will be valid up to 5 years or up to the date of commissioning whichever is earlier .
19. That the CTE expansion so granted shall become invalid in case of violation of any of the above / any law of the land.

Regional Officer, Panipat
Haryana State Pollution Control Board.





**HARYANA STATE POLLUTION CONTROL BOARD
C-11, SECTOR-6, PANCHKULA**

Website – www.hspcb.gov.in E-Mail – hspcb.pkt@sifymail.com

Tele Fax No. – 0172-2577870-73

No. HSPCB/Consent/ : 2778815PITCTOHWM1543778

Dated:03/04/2015

To.

**M/s :PANIPAT NAPHTHA CRACKER-A UNIT OF INDIAN OIL
VILLAGE BALJATAN, TEHSIL MATLAUDA, PANIPAT HARYANA
PANIPAT**

**Subject: Grant of consent for emission of Air under section 21/22 of the Air
(Prevention & Control of Pollution) Act, 1981, from 01/04/2015 to
31/03/2017**

Please refer to your consent application received on dated 30/01/2015 in Regional Officer ,
Panipat on the subject cited above.

With reference to your above application for consent for the emission/ continuation of
emission of S.P.M. air pollutions into atmosphere under Air (Prevention & Control of Pollution) Act,
1981 hereinafter referred as the Act,

M/s **PANIPAT NAPHTHA CRACKER-A UNIT OF INDIAN OIL** are authorized by the Haryana
State Pollution Control Board to discharge their air pollution being emitted out of their factory
premises in accordance with the condition as mentioned below:-

1. The applicants shall maintain good house keeping both within factory and in the premises. All these pipelines valves, storage tanks etc. shall be leak proof. In plant allowable pollutants levels, if specified by State Board should be met strictly.
2. Two or more ducts with different nature of exhaust gases should neither be intermixed nor to be through a common chimney.
3. Adequate facilities should be provided for sampling viz sampling holes at specified locations and dimension. The platform of specified size and strengthful arrangements electric connection also be provided.
4. The applicant/company shall comply with and carry out directive/orders issued by the Board in this consent order at all subsequent times without negligence of his /its part. The applicant/company shall be liable for such legal action against him as per provision of the law/act in case of violation of any order/directives. Issued at any time and or non compliance of the terms and conditions of his consent order.
5. The disturbed condition in any of plant/plants of the factory which is likely to result in increased emission or result in violation of emission standards shall be forthwith reported to this Board under intimation to the Member Secretary, Haryana State Pollution Control Board.
6. The toxic chemicals materials should be handled with due safety. The storage of toxic chemicals should be such that in case of emergency the chemicals could be transferred to other empty tank automatically and which should be followed by an approved air pollution control equipment designed for worst conditions.
7. A green belt (having sufficient trees and dense tree) around the factory should be provided.

8. All the processes using toxic chemical/harmful gases should be equipped with an emergency siren system in working conditions for alarming the general public in case of untoward incident.
9. The applicant shall furnish to all visiting officer and/or the State Board, any information regarding the construction/installation or operation of the establishment or emission control system and such other particulars as may be pertinent to prevention and control of air pollution. The industry shall also maintain and make available inspection book to the officers of the Board during their visits.
10. The air pollution control equipment of such specification which shall keep the emissions within the emission standard as approved by the State Board from time to time shall be installed and operated in the premises where the industry is carrying on/proposed to carry on its business.
11. The existing air pollution control equipment if required shall be alerted or replaced in accordance with the direction of the Board.
12. All solid wastes arising in the factory premises shall be properly graded and disposed of by:-
 - (i) In case of Land fill material, care should be taken to ensure that the material does not give rise to leachate which may percolate in ground water or carried away with storm run off.
 - (ii) Composting in case of bio degradable materials.
 - (iii) If the method of incineration is used for the disposal of solid waste the consent application should be processed separately and it should be taken up which consent is granted.
13. The industry shall submit an undertaking to the effect that the above conditions shall be complied with by them.
14. The applicant shall ensure that the emission of the air pollutants shall remain within emission standards as approved by the State Board from time to time.
15. The applicant shall make an application for grant of fresh consent at least 90 days before the date of expiry of this consent.
16. Necessary fee as prescribed for obtaining renewal consent shall be paid by the applicant alongwith the consent application.
17. The applicant shall either:-
 - a) Not later than 30 days from the date of consent order, certify in writing to the Member Secretary that the applicant had installed or provided for alternate electric power source sufficient to operate all the facilities installed by the applicant to maintain compliance with the terms and conditions of the consent.
 - b). Not later than 30 days from the date of this consent certify in writing to the Member Secretary that upon the reduction loss or failure of one or more of the primary source of electric power to any facilities installed by the application to maintain compliances with the term and conditions of this consent, the application shall proportionally reduce or otherwise control production and/or all emissions in order to maintain compliance with terms and conditions of this consent.
18. There should not be any fugitive emission from the premises.
19. The liquid effluent arising out of the operation of the air pollution control equipment shall also be treated in a manner and to the standards stipulated in the consent granted under Water (Prevention & Control of Pollution) Act, 1974 by this Board.
20. If due to any technological improvement or otherwise this Board is of opinion that all or any of the conditions referred to above required variation (including the change of any control equipment either in whole or in part) this Board shall after giving the applicant an opportunity of being heard vary all or such condition and there upon the applicant shall be bound to comply with the conditions so varied.
21. If the industry fails to adhere to any of the condition of this consent order the consent so granted shall automatically lapse.
22. The unit shall obtain consent under Water (Prevention & Control of Pollution) Act, 1974 and authorization under HWTM Rules, 2008.

23. (a) The industry shall discharge all the gases through a stack of minimum height.
 (b) The height of stack shall conform to the following criteria:
 (i) $H = 14.Q^{0.3}$ Where sulphur-dioxide is emitted.
 Q = Sulphur dioxide emission as Kg/hr.
 (ii) $H = 74.Q^{0.27}$ where particulate matter is emitted.
 Q = particulate matter emission as tonne/hr. If by using the formula given above the stack height arrived is more than 9 m then this higher stack should be used.
 (iii) The minimum stack height should be 30 Mts.
24. Nothing in this consent shall be deemed to preclude the institution of any legal action nor relieve the applicant from any responsibility, liabilities or penalties to which the applicant is or may be subject.
25. The industry shall maintain the following record to the satisfaction of the Board.
 1. The industries shall install separate energy meter and maintain log books for running of all air pollution control devices or pumps/motors used for running of the same.
 2. Register showing the results of various tests conducted by industry for monitoring of stack emission and ambient air.
26. The industry shall provide adequate arrangement for fighting the accidental leakages, discharge of any pollutants gas/liquids from the vessels, mechanical equipment etc. which are likely to cause environment pollution.
27. The consent being issued by the Board as above doesn't imply that unit performance conforms to law as required. The consent is being issued provisionally only with a view to accommodate the unit to provide it an opportunity to modify its operation immediately so as bring them in conformity with the law of the land.
28. The industry shall provide non-leachate storage facilities for proper disposal of Hazardous wastes.
29. The industry shall provide acoustic chambers on DG sets to control noise pollution and ensure noise level within the permissible limit.
30. The industry shall submit on site/off site emergency plan, if required.
31. The industry shall submit A/R within 3 months in case of 17 categories and once in 6 months, other categories L & M and keep all the parameters within limit.
32. The industry shall comply the public liability insurance Rule, 1991 as amended to date.
33. The industry shall submit Environmental Audit report once in a year.
34. The industry shall comply noise pollution (Regulation and control) Rules, 2000.
35. The industry shall install ambient air station in case of 17 & other categories large & medium.
36. The industry shall obtain environmental clearance, if applicable as per MOEF notification.
37. The industry shall inform to HO/RO office immediately by FAX in case of failure of APCM.
38. In case of by passing the emissions, the consent shall be deemed revoked.
39. The industry shall comply all the direction/Rules/Instructions as may be issued by the MOEF/CPCB/HSPCB from time to time.

Specific Conditions :

Other Conditions :

Punchkula.

--It is system generated certificate no signature is required--



इंडियन ऑयल कॉर्पोरेशन लिमिटेड

पानीपत रिफ़ाइनरी एवं पेट्रोकेमिकल कॉम्प्लेक्स

पानीपत, हरियाणा - 132140

Indian Oil Corporation Limited

Panipat Refinery & Petrochemical Complex

Panipat, Haryana - 132140

वेबसाइट: www.iocl.com; ई-मेल: prpc_hse@indianoil.in

दूरभाष : 0180-252 4001/0180-2578833



Refineries Division

PNC/HSE/CTO/2020-21/9

18.05.2021

To,
Regional Officer
Haryana State Pollution Control Board
SCO No. 55, Sector -25, HUDA
Panipat, (HARYANA)

Subject: **Submission of CTO Compliance Report for Panipat Naphtha Cracker**

Reference: CTO Ref. No: HSPCB/Consent/: 313105817PITCTO3530699 dated 14.05.2017

Sir,

In context of referenced Consent to Operate issued to Panipat Naphtha Cracker, the compliance to the conditions of the CTO dated is enclosed along with the following:

1. The Treated effluent Report- Monitoring done through MOEFCC approved laboratory attached as Annexure-I.
2. The Stack emission report – Monitoring done through MOEFCC approved laboratory attached as Annexure-II.

This is for your kind information.

Thanking You,

Yours faithfully,

(Signature)
18/5/2021

(Ashish Bhushan)

General Manager (HSE)

For and on behalf of

Executive Director & Refinery Head,

PRPC

अश्विष भुषण

Ashish Bhushan

जनरल मैनेजर (हेल्थ, सैफ्टी एवं पर्यावरण)

General Manager (Health, Safety & Environment)

पानीपत रिफ़ाइनरी एवं पेट्रोकेमिकल कॉम्प्लेक्स (आई.ओ.सी.एल.)

Panipat Refinery & Petrochemical Complex (IOCL)

पानीपत, पानीपत-132140

Enclosures:
As above

o/c



EH672278577IN

PANIPAT NAPHTHA CRACKER

Consent to Operate ref. No: HSPCB/Consent/: 313105817PITCTO3530699 dated 14.05.2017 from HSPCB

CTO Compliance Report FY: 2020-21

General Conditions		
S. No.	Condition	Status/ Action Plan
1	The applicants shall maintain good housekeeping both within factory and in the premises. All hose pipelines valves, storage tanks etc. shall be leak proof. In plant allowable pollutants levels, if specified by State Board should be met strictly.	Complied
2	The applicant/company shall comply with and carry out directive/orders issued by the Board in this consent order at all subsequent times without negligence of his /its part.	Complied
	The applicant/company shall be liable for such legal action against him as per provision of the law/act in case of violation of any order/directives. Issued at any time and or non compliance of the terms and conditions of his consent order.	Noted
3	The applicant shall make an application for grant of consent at least 90 days before the date of expiry of this consent.	Noted
4	Necessary fee as prescribed for obtaining renewal consent shall be paid by the applicant along with the consent application.	Noted
5	If due to any technological improvement or otherwise this Board is of opinion that all or any of the conditions referred to above required variation (including the change of any control equipment either in whole or in part) this Board shall after giving the applicant an opportunity of being heard vary all or such condition and there upon the applicant shall be bound to comply with the conditions so varied.	Noted
6	Nothing in this consent shall be deemed to preclude the instruction of any legal action nor relieve the applicant from any responsibility, liabilities of penalties to which the applicant is or may be subject.	Noted
7	The industry shall provide adequate arrangement for fighting the accidental leakages, discharge of any pollutants gas/liquids from the vessels, mechanical equipment etc. which are likely to cause environment pollution.	Complied
8	The consent being issued by the Board as above doesn't imply that unit performance conforms to law as required. The consent is being issued provisionally only with a view to accommodate the unit to provide it an opportunity to modify its operation immediately so as bring them in conformity with the law of the land.	Noted
9	The industry shall comply noise pollution (Regulation and control) Rules, 2000.	Complied
10	The industry shall comply all the direction/Rules /Instructions as may be issued by the MOEF/CPCB/HSPCB from time to time.	Complied
11	The industry shall ensure that various characteristics of the effluents remain within the tolerance limits as specified in EPA Standard and as amended from time to time and at no time the concentration of any characteristics should exceed these limits for discharge.	Complied
12	The industry would immediately submit the revised application to the Board in the event of any change in the raw material in process, mode of treatment/discharge of effluent. In case of change of process at any stage during the consent period, the industry shall submit fresh consent application alongwith the consent to operate fee, if found due, which may be on any account and that shall be paid by the Industry and the industry would immediately submit the consent application to the Board in the event of any change during the year in the raw material, quantity, quality of the effluent, mode of discharge, treatment facilities etc.	Noted

12	The officer/official of the Board shall reserve the right to access for the inspection of the industry in connection with the various process and the treatment facilities. The consent to operate is subject to review by the Board at any time.	Noted
14	Permissible limits for any pollutants mentioned in the consent to operate order should not exceed the concentration permitted in the effluent by the Board.	Noted
15	The industry shall pay the balance fee, in case it is found due from the industry at any time later on.	Noted
16	If the industry fails to adhere to any of the conditions of this consent to operate order, the consent to operate so granted shall automatically lapse.	Noted
17	If the industry is closed temporarily at its own, they shall inform the Board and obtain permission before restart of the unit.	Noted
18	The industry shall comply all the Directions/ Rules/Instructions issued from time to time by the Board.	Noted

Specific Conditions :		
1	That the unit will submit the analysis report on yearly basis and will keep the parameters within prescribed limit as laid down under EP Act, 1986.	Complied
2	That the unit provides separate energy meter on their ETP/APCM and will maintain the logbook for energy consumption and chemical consumption.	Complied
3	That the unit will provide interlocking arrangement of DG set with APCM/ETP/STP and shall have separate DG set to ensure regular and effective running of pollution control devices.	Automatic double power supply source with batteries backup is used to ensure regular and effective running of pollution control devices.
4	That the unit will adopt cleaner technology thereby reducing pollution load of the unit	Complied
5	That the unit will not made any expansion within existing plant without prior permission of the Board.	Noted
6	That the unit will not add any water and air polluting activity which results in increase in pollution load of the industry without prior permission of the Board.	Noted
7	That the unit will apply for renewal of Consent to operate (CTO) 90 days earlier before the expiry previous consent to operate obtained from the Board.	Noted
8	That the unit will deposit the balance consent CTO fee as per schedule.	Noted

9	That unit will renewed the agreement with GEPIL for disposal of hazardous waste before expiry of previous agreement.	Agreement valid from 2021-25
10	That unit will submit the compliance report of conditions of consent to operate granted by the Board yearly failing which consent to operate granted by the Board will be revoked.	Complied
11	That the CTO so granted shall become invalid in case of violation of any of the Environment Laws policy of the Board/Rules/Conditions.	Noted

Test Report

Issued to: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Naptha Cracker
Distt. Panipat, Haryana, INDIA

ULR No.: TC636621000000468
Test Report Date: 02/04/2021

Sample Particulars:

Sample Quantity & Packaging : 1.0 Liter, Pet Bottle
Test Started on : 24/03/2021
Test Completed : 01/04/2021
Method of Sampling : SOP/B/D-3
Date of Sampling : 23/03/2021
Sampling Conducted By : Mr. Veerpal Singh
Place of Sampling : W-1: ETP Outlet-PNC

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
1	pH	...	7.61	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	28	100 Max	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	68	250 Max	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	18	50 Max	IS:3025 (P-44)
5	Phenols (C ₆ H ₅ OH)	mg/L	0.54	5.0 Max	IS:3025 (P-43)
6	Sulphide (S)	mg/L	0.4	2.0 Max	IS:3025 (P-29)
7	Fluoride	mg/L	2.6	15 Max	IS:3025 (P-60)
8	Chromium Hexavalent (Cr ⁶⁺)	mg/L	0.06	0.1 Max	IS:3025 (P-52)



Certificate No.
T-6366



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CORPORATE OFFICE & CENTRAL LABORATORIES :-

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labsnitya@gmail.com

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Test Report

Issued to: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Naphtha Cracker
Distt. Panipat, Haryana, INDIA

Test Report No: 202103230110
Test Report Date: 02/04/2021

Sample Particulars:

Sample Quantity & Packaging

: 1.0 Liter, Pet Bottle

Test Started on

: 24/03/2021

Test Completed

: 01/04/2021

Method of Sampling

: SOP/S/D-3

Date of Sampling

: 23/03/2021

Sampling Conducted By

: Mr. Veerpal Singh

Place of Sampling

: W-1: ETP Outlet-PNC

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
1	Cyanide [CN]	mg/L	BDL (LOQ-0.2)	0.20	APHA-23 rd Ed.
2	Total Chromium	mg/L	BDL (LOQ-2.0)	2.0	IS:3025 (P-52)



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If you have any complaint/feedback regarding the sample collection/testing/test report, please send an email at info@nityalab.com and call at +91-191-2465597, +91-9677200773

Test Report

Issued to: M/s Indian Oil Corporation Limited

(Refinery Division)

Panipat Naptha Cracker

Distt. Panipat, Haryana, INDIA

ULR No.: TC 636621000000310

Test Report Date: 18/02/2021

Sample Particulars:

Sample Quantity & Packaging

: 1.0 Liter, Pet Bottle

Test Started on

: 11/02/2021

Test Completed

: 17/02/2021

Method of Sampling

: SOP/B/D-3

Date of Sampling

: 10/02/2021

Sampling Conducted by

: Mr. Vaerpal Singh

Place of Sampling

: W-1; ETP Outlet-PNC

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
1	pH	...	7.48	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	32	100 Max	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	170	250 Max	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	24	50 Max	IS:3025 (P-44)
5	Phenols (C ₆ H ₅ OH)	mg/L	0.61	5.0 Max	IS:3025 (P-43)
6	Sulphide (S)	mg/L	0.6	2.0 Max	IS:3025 (P-29)
7	Fluoride	mg/L	2.1	15 Max	IS:3025 (P-60)
8	Chromium Hexavalent (Cr ⁶⁺)	mg/L	0.04	0.1 Max	IS:3025 (P-52)



Certificate No.
T-6366

(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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CORPORATE OFFICE & CENTRAL LABORATORIES :-

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Test Report

Issued to: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Naptha Cracker
Distt. Panipat, Haryana, INDIA

Test Report No: 202102100117

Test Report Date: 18/02/2021

Sample Particulars:

Sample Quantity & Packaging : 1.0 Liter, Pet Bottle
Test Started on : 11/02/2021
Test Completed : 17/02/2021
Method of Sampling : SOP/B/O-3
Date of Sampling : 10/02/2021
Sampling Conducted By : Mr. Veerpal Singh
Place of Sampling : W-1: ETP Outlet-PNC

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
1	Cyanide (CN)	mg/L	BDL (LOG-0.2)	0.20	APHA-23 rd Ed.
2	Total Chromium	mg/L	BDL (LOG-2.0)	2.0	IS:3025 (P-52)



(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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Test Report

Issued to: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Naptha Cracker
Dist. Panipat, Haryana, INDIA

URL No.: TC 63662100000245

Test Report Date: 09/02/2021

Sample Particulars:

Sample Quantity & Packaging

Test Started on

Test Completed

Method of Sampling

Date of Sampling

Sampling Conducted By

Place of Sampling

= 1.0 Liter, Pet Bottle

01/02/2021

: 05/02/2021

SDF/B/D-3

30/01/2021

: Mr. Veerpal Singh

: W-1: ETP Outlet-PNC

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
1	pH	—	7.61	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	26.8	100 Max	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	160	250 Max	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	28	50 Max	IS:3025 (P-44)
5	Phenols (C ₆ H ₅ OH)	mg/L	0.46	5.0 Max	IS:3025 (P-43)
6	Sulphide (S)	mg/L	0.4	2.0 Max	IS:3025 (P-29)
7	Fluoride	mg/L	1.8	15 Max	IS:3025 (P-60)
8	Chromium Hexavalent (Cr ⁶⁺)	mg/L	0.06	0.1 Max	IS:3025 (P-52)



(AUTHORISED SIGNATORY)
(RAVINDER MITTAL)

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■ labaltaya@gmail.com

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Test Report

Issued to: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Naptha Cracker
Distt. Panipat, Haryana, INDIA

Test Report No: 202101300110

Test Report Date: 09/02/2021

Sample Particulars:

Sample Quantity & Packaging : 1.0 Liter, Pet Bottle
Test Started on : 01/02/2021
Test Completed : 08/02/2021
Method of Sampling : SOP/B/D-3
Date of Sampling : 30/01/2021
Sampling Conducted By : Mr. Veerpal Singh
Place of Sampling : W-1: ETP Outlet-PNC

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-1		
1	Cyanide (CN)	mg/L	BDL (LOQ-0.2)	0.20	APHA-23 rd Ed.
2	Total Chromium	mg/L	BDL (LOQ-2.0)	2.0	IS:3025 (P-52)



(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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Test Report

Issued to: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Naphtha Cracker
Distt, Panipat, Haryana, INDIA

URL No.: TC 636620000001651
Test Report Date: 12/01/2021

Sample Particulars:

Sample Quantity & Packaging
Test Started on
Test Completed
Method of Sampling
Date of Sampling
Sampling Conducted By
Place of Sampling

: 1.0 Liter, Pet Bottle
: 02/01/2021
: 11/01/2021
: SOP/B/D-3
: 31/12/2020
: Mr. Veerpal Singh
: W-7: ETP Outlet-PNC

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-7		
1	pH	---	7.24	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	23.8	100 Max	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	140	250 Max	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	22	50 Max	IS:3025 (P-44)
5	Phenols (C ₆ H ₅ OH)	mg/L	0.5	5.0 Max	IS:3025 (P-43)
6	Sulphide (S)	mg/L	0.9	2.0 Max	IS:3025 (P-29)
7	Fluoride	mg/L	2.6	15 Max	IS:3025 (P-60)
8	Chromium Hexavalent (Cr ⁶⁺)	mg/L	0.2	0.1 Max	IS:3025 (P-52)

Certificate No.
T-6366

(AUTHORISED SIGNATORY)
(RAVINDER MITTAL)

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Test Report

Issued to: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Naptha Cracker
Distt. Panipat, Haryana, INDIA

Test Report No: 202012310116
Test Report Date: 12/01/2021

Sample Particulars:

Sample Quantity & Packaging
Test Started on
Test Completed
Method of Sampling
Date of Sampling
Sampling Conducted By
Place of Sampling

: 1.0 liter, Pet Bottle
: 02/01/2021
: 11/01/2021
: SOP/B/D-3
: 31/12/2020
: Mr. Veerpal Singh
: W-7: ETP Outlet-PNC

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-7		
1	Cyanide (CN)	mg/L	BDL (LOG-0.2)	0.20	APHA-23 rd Ed.
2	Total Chromium	mg/L	BDL (LOG-2.0)	2.0	IS:3025 (P-52)

(AUTHORISED SIGNATORY)
(RAVINDER MITTAL)

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Test Report

Issued to: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Naphtha Cracker
Distt, Panipat, Haryana, INDIA

URL No.: TC 636620000001564
Test Report Date: 05/12/2020

Sample Particulars:

Sample Quantity & Packaging : 1.0 Liter, Pet Bottle
Test Started on : 27/11/2020
Test Completed : 02/12/2020
Method of Sampling : SOP/B/D-3
Date of Sampling : 26/11/2020
Sampling Conducted By : Mr. Animesh Jha
Place of Sampling : W-6: ETP Outlet-PNC

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-6		
1	pH	...	7.36	6.5-8.5	IS:3025 (P-11)
2	Total Suspended Solids (TSS)	mg/L	27.4	100 Max	IS:3025 (P-17)
3	Chemical Oxygen Demand (COD)	mg/L	128	250 Max	IS:3025 (P-58)
4	Bio-Chemical Oxygen Demand (3 days at 27°C) (BOD)	mg/L	19	50 Max	IS:3025 (P-44)
5	Phenols (C ₆ H ₅ OH)	mg/L	0.7	5.0 Max	IS:3025 (P-43)
6	Sulphide (S)	mg/L	1.6	2.0 Max	IS:3025 (P-29)
7	Fluoride	mg/L	2.3	15 Max	IS:3025 (P-60)
8	Chromium Hexavalent (Cr ⁶⁺)	mg/L	0.3	0.1 Max	IS:3025 (P-52)



(AUTHORISED SIGNATORY)
(RAVINDER MITTAL)

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Test Report

Issued to: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Naptha Cracker
Distt. Panipat, Haryana, INDIA

Test Report No: 202011260110

Test Report Date: 05/12/2020

Sample Particulars:

Sample Quantity & Packaging : 1.0 Liter, Pet Bottle
Test Started on : 27/11/2020
Test Completed : 02/12/2020
Method of Sampling : SOP/B/D-3
Date of Sampling : 26/11/2020
Sampling Conducted By : Mr. Animesh Jha
Place of Sampling : W-6; ETP Outlet-PNC

Test Report

Sr. No.	Parameter	Unit	Result	Permissible Limits	Protocol
			W-6		
1	Cyanide (CN)	mg/L	BDL (LOQ-0.2)	0.20	APHA-23rd Ed.
2	Total Chromium	mg/L	BDL (LOQ-2.0)	2.0	IS:3025 (P-52)

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Haryana Test House

& Consultancy Services

SAC, Sector-24, Phase-II, Gurgaon, Haryana-122 002 (INDIA)

Ph: 0122-2611001, 2611002, 2611003, 2611004, 2611005, 2611006, 2611007, 2611008, 2611009, 2611010, 2611011, 2611012, Website: www.haryanatesthouse.net, email: info@haryanatesthouse.net



Dr: 02.11.2020

Test Results of Waste Water Sample

Unit: Naphtha Cracker

Month: Oct. 2020

Date of Sampling: 09.10.2020

Test Results

S.NO.	PARAMETERS	Lab Order No. URL No.		Haryana 20180912 IC751124002142018	PROTOCOL USED
		UNIT	LIMIT	ETP OUTLET	
1	pH	-	6.5 to 8.5	7.75	IS 3025 (P-11) : 1992
2	Chemical Oxygen Demand (COD)	mg/l	250 max.	72.0	IS 3025 (P-19) : 1992
3	BOD for 5 days at 20°C	mg/l	50 max.	30.2	IS 3025 (P-19) : 1992
4	Total Suspended Solids	mg/l	100 max.	38.0	IS 3025 (P-31) : 1992
5	Free Chlorine as Cl_2/OH^-	mg/l	5.0 max.	< 0.01	IS 3025 (P-40) : 1992
6	Sulphide as HS^-	mg/l	50 max.	< 1.0	IS 3025 (P-21) : 1992
7	Cyanide as CN	mg/l	2.0 max.	< 0.02	IS 3025 (P-21) : 1992
8	Hexavalent Chromium as Cr^{6+}	mg/l	0.1 max.	< 0.06	IS 3025 (P-53) : 1992
9	Total Chromium as Cr	mg/l	2.0 max.	< 0.2	IS 3025 (P-53) : 1992
10	Fluoride as F	mg/l	15 max.	1.2	IS 3025 (P-53) : 1992

Tdfo

Dr. Shrivastava / Mgr. (Lab.)

02.11.2020
Authorized Signatory

Haryana Test House & Consultancy Services

B-4C, Sector-25, Part-1, MIDC, Faridkot-152104 (PUNJAB)

Ph: 9756180-1250493, 94043068-9760, Toll-Free: 9910-267111, Website: www.haryanatesthouse.com, Email: info@haryanatesthouse.com



Test Results of Waste Water Sample

DT: 03.10.2020

Unit: Naphtha Cracker

Month: Sept 2020

Date of Sampling: 25.09.2020

Test Results

S.NO.	PARAMETERS	Job Order No.		Job Date		TESTED BY
		UNIT	UNIT	UNIT	UNIT	
1	pH	-	6.5 to 8.5	7.40	5.000 (P-11) - 500	
2	Chemical Oxygen Demand (COD)	mg/l	500 mg/l	50.0	0.400 (P-40) - 200	
3	BOD (5 days at 20°C)	mg/l	30 mg/l	12.0	0.300 (P-40) - 100	
4	Total Suspended Solids	mg/l	100 mg/l	10.0	0.400 (P-11) - 100	
5	Phenol as C ₆ H ₅ OH	mg/l	10 mg/l	< 0.01	0.300 (P-40) - 100	
6	Sulphide as H ₂ S	mg/l	10 mg/l	< 1.0	0.300 (P-20) - 100	
7	Cyanide as CN	mg/l	10 mg/l	< 0.02	0.300 (P-20) - 100	
8	Hexavalent Chromium as Cr ⁶⁺	mg/l	1.0 mg/l	< 0.05	0.300 (P-20) - 100	
9	Total Chromium as Cr	mg/l	1.0 mg/l	< 0.1	0.300 (P-20) - 100	
10	Fluoride as F	mg/l	10 mg/l	0.5	0.300 (P-20) - 100	

Signature
22/10/20
Sr. Chemist / Mpr (Lab)

Signature
23/10/20
Authorized Signatory

Page 172 of 182

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& Consultancy Services

Plot 11, Sector 17, Phase II, Gurgaon, Haryana 122001 (INDIA)

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Dr: 04.08.2020

Test Results of Waste Water Sample

Unit: Naphtha Cracker

Month: July 2020

Date of Sampling: 07.07.2020

Test Results

S.NO.	PARAMETERS	Job Order No. URL No.		Job Order No. URL No.		PROTOCOL USED
		UNIT	LIMIT	UNIT	LIMIT	
1	pH	-	6.5 to 8.5	7.5		IS 3026 (P-11) 1990
2	Chemical Oxygen Demand (COD)	mg/l	250 max	1070		IS 3025 (P-58) 2005
3	BOD ₅ at 20°C	mg/l	40 max	38.0		IS 3025 (P-44) 1993
4	Total Suspended Solids	mg/l	100 max	12.0		IS 3025 (P-17) 1993
5	Fixed as CaH ₂ O ₄	mg/l	3.0 max	< 0.01		IS 3025 (P-13) 1990
6	Sulphide as H ₂ S	mg/l	0.5 max	< 1.0		IS 3025 (P-20) 1990
7	Chloride as Cl ⁻	mg/l	100 max	< 0.02		IS 3025 (P-31) 1990
8	Free Chlorine as Cl ⁺	mg/l	0.1 max	< 0.05		IS 3025 (P-32) 2000
9	Total Chromium as Cr ⁶⁺	mg/l	0.05 max	< 0.2		IS 3025 (P-3) 2000
10	Fluoride as F ⁻	mg/l	15 max	0.59		APHA (5910C)

TS/H

Dr: 04.08.2020 / Page 1 of 1

[Signature]
04.08.2020
Authorized Signatory

HARYANA TEST HOUSE

& Consultancy Services

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Test Results of Waste Water Sample

Dr: 04.07.2020

Unit: Naphtha Cracker

Month: June 2020

Date of Sampling: 27.05.2020

Test Results

S.NO.	PARAMETERS	Job Order No. (BIL No.)		APPROVED BY TESTER/ANALYST	REMARKS/UNIT
		UNIT	UNIT		
1	pH	—	6.5 to 8.5	7.38	IS 2025 (P-15): 6.5-8.5
2	Chemical Oxygen Demand (COD)	mg/l	2000	47.0	IS 2025 (P-16): 2000
3	BOD for 5 days at 20°C	mg/l	250	5.2	IS 2025 (P-17): 40-100
4	Total Suspended Solids	mg/l	1000	58.9	IS 2025 (P-18): 1000
5	Phosphate as P_2O_5	mg/l	10.00	< 0.01	IS 2025 (P-19): 100
6	Sulphide as S	mg/l	10.00	< 0.01	IS 2025 (P-20): 1000
7	Cyanide as CN	mg/l	25.00	< 0.02	IS 2025 (P-21): 100
8	Hexavalent Chromium as Cr^{6+}	mg/l	1.00	< 0.05	IS 2025 (P-22): 10.0
9	Total Chlorine as Cl	mg/l	25.00	< 0.1	IS 2025 (P-23): 200
10	Fluoride as F	mg/l	15.00	0.51	IS 2025 (P-24): 15.00

TSD

Sr. Chemist/Mr (Lab)

Authorized Signatory
04.07.2020

HARYANA TEST HOUSE & Consultancy Services

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(Ph: 0120-0180-529040), (M: 94160-17166), Tele-Fax: 0120-2471112, Website: www.haryanatesthouse.com, e-mail: info@haryanatesthouse.com



Dr: 04.06.2020

Test Results of Waste Water Sample
Unit: Naphtha Cracker
Month: May 2020
Date of Sampling: 23.05.2020

Test Results

S.NO.	PARAMETERS	Job Order No. URL No.		HTH/D/2005/009 102611201900001627	PHOTOGRAPH
		UNIT	LIMIT	ESP-OUTLET	
1	pH	-	6.5 to 8.5	7.83	< 200 (P-1) - 100
2	Chemical Oxygen Demand (COD)	mg/l	250 mg/l	15.0	< 300 (P-2) - 200
3	BOD for 5 days at 20°C	mg/l	30 mg/l	12.0	< 300 (P-3) - 150
4	Total Suspended Solids	mg/l	100 mg/l	18.0	< 300 (P-4) - 150
5	Phenol as C ₆ H ₅ OH	mg/l	10 mg/l	< 0.05	< 300 (P-5) - 150
6	Sulphide as S	mg/l	10 mg/l	< 0.05	< 300 (P-6) - 150
7	Cyanide as CN ⁻	mg/l	10 mg/l	< 0.05	< 300 (P-7) - 150
8	Hexavalent Chromium as Cr ⁶⁺	mg/l	0.1 mg/l	< 0.05	< 300 (P-8) - 150
9	Total Chromium as Cr	mg/l	10 mg/l	< 0.2	< 300 (P-9) - 150
10	Fluoride as F	mg/l	15 mg/l	0.6	< 100 (P-10) - 50

Sr. Chemist (Lab.)

Authorized Signatory



HARYANA TEST HOUSE

& Consultancy Services

50-C, Sector-25, Post-II, HUDA, Pusa-pat-132 104 (HARYANA)

Ph: (0) 9180-3290403, (04) 94160-17160, Tele-Fax: 0180-2671112, Website: www.haryanatesthouse.net, e-mail: info@haryanatesthouse.net

DI: 19.05.2020

Test Results of Waste Water Sample

Unit: Naphtha Cracker

Month: April 2020

Date of Sampling: 30.04.2020

Test Results

S.NO.	PARAMETERS	Job Order No.		UNIT	LIMIT	BTP OUTLET	PROTOCOL USED
		URL No.					
							IS 3025 (P-11) : 1996
1	pH				6.5 to 8.5	7.25	IS 3025 (P-11) : 1996
2	Chemical Oxygen Demand (COD)			mg/l	250 max.	52.90	IS 3025 (P-46) : 2003
3	BOD for 3 days at 27°C			mg/l	30 max.	8.0	IS 3025 (P-44) : 1983
4	Total Suspended Solids			mg/l	100 max.	14.0	IS 3025 (P-17) : 1993
5	Phenol as C ₆ H ₅ OH			mg/l	5.0 max.	< 0.01	IS 3025 (P-43) : 1982
6	Sulphide as S			mg/l	2.0 max.	< 0.05	IS 3025 (P-29) : 1986
7	Cyanide as CN			mg/l	2.0 max.	< 0.02	IS 3025 (P-27) : 1986
8	Hexavalent Chromium as Cr ⁺⁶			mg/l	0.1 max.	< 0.05	IS 3025 (P-52) : 2003
9	Total Chromium as Cr			mg/l	2.0 max.	< 0.1	IS 3025 (P-52) : 2003
10	Fluoride as F			mg/l	15 max.	< 0.02	APHA (SPACONS)

19.05.2020
Authorised Signatory

Q. Jais

Sr. Chemist / Mgr (Lab.)

Test Report

Issued to: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Naptha Cracker
Distt. Panipat, Haryana, (INDIA)

ULR No.: TC 03662500000-287-293, 301-302, 320-322, 325-326
Test Report Date: 22/02/2021

Sample Particulars

Nature of the Sample:

Purpose of Monitoring:

Method of Sampling:

Monitoring Conducted By:

: Stack Monitoring

: To Check the Pollution Load

: IS: 11255 (Part 7)

: Mr. Veerpal Singh

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diameter (meter)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)	Particulate Matters ¹ (as PM)		Nickel & Vanadium ² (as Ni & V) ¹		
								mg/Nm ³	Kg/hr	mg/Nm ³	Kg/hr	PPM
1	Heater 101 NCU	8/2/2021	70	3.10	27	145	8.77	5.8	24.1	BDL	-	-
2	Heater 201 NCU	8/2/2021	70	3.10	29	184	9.87	6.2	26.0	BDL	-	-
3	Heater 301 NCU	8/2/2021	70	3.10	26	148	8.90	5.3	21.8	BDL	-	-
4	Heater 401 NCU	8/2/2021	70	3.10	26	132	9.10	5.1	22.3	BDL	-	-
5	Heater 501 NCU	8/2/2021	70	3.10	28	158	9.70	5.6	24.5	BDL	-	-
6	Heater 601 NCU	8/2/2021	70	3.10	26	149	9.93	6	27.5	BDL	-	-
7	Heater 701 NCU	8/2/2021	70	3.10	27	156	9.97	5.5	24.8	BDL	-	-
8	Swing 31 LM 401 A	9/2/2021	70	1.80	28	176	10.07	BDL	0.0	BDL	-	-
9	Swing 31 LM 401 B	9/2/2021	70	1.80	27	176	9.87	BDL	0.0	BDL	-	-
10	MEG Furnace	12/2/2021	70	0.85	28	178	10.63	5.8	2.0	BDL	-	-
11	HRSG-3	15/02/2021	70	3.30	28	192	10.16	6.2	29.8	BDL	-	-
12	HRSG-5	15/02/2021	70	3.30	26	185	10.60	6.7	34.2	BDL	-	-
13	LB Boiler-1	16/02/2021	70	3.30	28	182	10.10	5.2	25.4	BDL	-	-
14	LB Boiler-2	16/02/2021	70	3.30	26	193	10.77	5.5	28.0	BDL	-	-
Permissible Limits (mg/Nm ³)							Gas	10	-			
							Liquid	100	5			
Test Method								IS-11255 (P-1)	USEPA Method 29 By AAS			

Remark:

BDL-Below Detection Limit. ¹ Particulate Matters (as PM)-BDL (100-5.0) ² Nickel & Vanadium (as Ni & V)-BDL (100-0.5)
Sample Analysed within six days from the date of sampling.



(AUTHORISED SIGNATORY)
(RAVINDER MITTAL)

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

Test Report

Issued to: M/s Indian Oil Corporation Limited
(Refinery Division)
Panipat Naptha Cracker
Distt. Panipat, Haryana, INDIA

Test Report No. 202102080110-116, 202102090110-111, 202102120110
202102150110-111, 202102160110-111
Date: 22/02/2021

Sample Particulars

Nature of the Sample

Purpose of Monitoring

Method of Sampling

Monitoring Conducted By

Stack Monitoring

To Check the Pollution Load

IS: 11255 (Part 7)

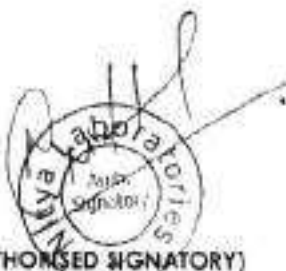
Mr. Veerpal Singh

Sr. No.	Stack Particulars	Date of Sampling	Stack Height (meter)	Stack Diameter (meter)	Ambient Temp. (°C)	Stack Temp. (°C)	Average Gas Velocity (m/s)	Carbon Monoxide (as CO)		
								mg/Nm ³	Kg/hr	PPM
1	Heater 101 NCU	8/2/2021	70	3.10	27	145	8.77	16	2.72	13.97
2	Heater 201 NCU	8/2/2021	70	3.10	29	184	9.87	5	1.05	5.24
3	Heater 301 NCU	8/2/2021	70	3.10	26	148	8.90	18	3.08	15.71
4	Heater 401 NCU	8/2/2021	70	3.10	26	132	9.10	19	3.46	16.59
5	Heater 501 NCU	8/2/2021	70	3.10	28	158	9.70	20	3.65	17.46
6	Heater 601 NCU	8/2/2021	70	3.10	26	149	9.93	16	3.05	13.97
7	Heater 701 NCU	8/2/2021	70	3.10	27	156	9.97	21	3.95	18.33
8	Swing 31 LM 401 A	8/2/2021	70	1.80	28	174	10.07	3	0.31	4.36
9	Swing 31 LM 401 B	8/2/2021	70	1.80	27	176	9.87	0	0.54	2.86
10	MEG Furnace	12/2/2021	70	0.85	28	178	10.63	16	0.23	13.97
11	HRSG-3	15/02/2021	70	3.30	28	192	10.16	16	3.21	13.97
12	HRSG-5	15/02/2021	70	3.30	26	185	10.60	18	3.82	15.71
13	UB Boiler-1	16/02/2021	70	3.30	28	182	10.10	15	3.06	13.99
14	UB Boiler-2	16/02/2021	70	3.30	26	193	10.77	12	2.54	10.47
Permissible Limits (mg/Nm ³)							Gas	150		
							Liquid	230		

Remarks:

SD: (Below Detection Limit), Carbon Monoxide (as CO) BCL (200-10)

Sample Analyzed within six days from the date of sampling. All above parameters are tested using High Gas Analyser.


(AUTHORISED SIGNATORY)

(RAVINDER MITTAL)

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Page 179 of 182

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Ph: 01661801240/1801241/17160, Tele-Fax: 01661801112, Website: www.haryanatesthouse.co, e-mail: info@haryanatesthouse.co



Test Results of Stack Emission

DT: 02.11.2020

Unit: Naptha Cracker

Month: Oct 2020 (URL No. TC/201201/0009/020F)

Test Results

Sr. No.	Stack Particular	Date of Sampling	Temp. °C	Diameter of Stack (m)	Gas Velocity (m/sec)	Flue Gas Volume at STC (Nm ³ /hr)	Particulate Matter (PM ₁₀) (mg/Nm ³)		Sulphur Dioxide (SO ₂) (mg/Nm ³)		Oxide of Nitrogen (NO _x) (mg/Nm ³)		Carbon Monoxide (CO) (mg/Nm ³)		Water (H ₂ O) (mg/Nm ³)	Acidity (pH)	Vanadium (V) (mg/Nm ³)	Nickel (Ni) (mg/Nm ³)	
							Limit Gas: 5 mg/Nm ³ Liquid: 100 mg/Nm ³	Limit Gas: 5 mg/Nm ³ Liquid: 100 mg/Nm ³	Limit Gas: 5 mg/Nm ³ Liquid: 100 mg/Nm ³	Limit Gas: 5 mg/Nm ³ Liquid: 100 mg/Nm ³	Limit Gas: 5 mg/Nm ³ Liquid: 100 mg/Nm ³	Limit Gas: 5 mg/Nm ³ Liquid: 100 mg/Nm ³	Limit Gas: 5 mg/Nm ³ Liquid: 100 mg/Nm ³	Limit Gas: 5 mg/Nm ³ Liquid: 100 mg/Nm ³				Limit Gas: 5 mg/Nm ³ Liquid: 100 mg/Nm ³	Limit Gas: 5 mg/Nm ³ Liquid: 100 mg/Nm ³
1	HEATER W/100	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2	HEATER W/200	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3	HEATER W/300	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4	HEATER W/400	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
5	HEATER W/500	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
6	HEATER W/600	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
7	HEATER W/700	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
8	HEATER W/800	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
9	HEATER W/900	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
10	HEATER W/1000	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
11	HEATER W/1100	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
12	HEATER W/1200	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
13	HEATER W/1300	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
14	HEATER W/1400	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
15	HEATER W/1500	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
16	HEATER W/1600	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
17	HEATER W/1700	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
18	HEATER W/1800	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
19	HEATER W/1900	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
20	HEATER W/2000	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
21	HEATER W/2100	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
22	HEATER W/2200	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
23	HEATER W/2300	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
24	HEATER W/2400	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
25	HEATER W/2500	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
26	HEATER W/2600	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
27	HEATER W/2700	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
28	HEATER W/2800	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
29	HEATER W/2900	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
30	HEATER W/3000	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
31	HEATER W/3100	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
32	HEATER W/3200	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
33	HEATER W/3300	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
34	HEATER W/3400	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
35	HEATER W/3500	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
36	HEATER W/3600	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
37	HEATER W/3700	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
38	HEATER W/3800	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
39	HEATER W/3900	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
40	HEATER W/4000	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
41	HEATER W/4100	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
42	HEATER W/4200	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
43	HEATER W/4300	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
44	HEATER W/4400	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
45	HEATER W/4500	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
46	HEATER W/4600	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
47	HEATER W/4700	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
48	HEATER W/4800	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
49	HEATER W/4900	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
50	HEATER W/5000	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
51	HEATER W/5100	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
52	HEATER W/5200	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
53	HEATER W/5300	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
54	HEATER W/5400	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
55	HEATER W/5500	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
56	HEATER W/5600	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
57	HEATER W/5700	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
58	HEATER W/5800	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
59	HEATER W/5900	01.10.2020	30	1.0	5.56	11040.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
60	HEATER W/6000																		

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Ph: 01244-259883, 01244-08-1116, Tele-Fax: 0124-2671162, Website: www.haryanatesthouse.com, e-mail: info@haryanatesthouse.net



Dr: 04.08.2020

Test Results of Stack Emission

Unit: Naptha Cooker

Month: July 2020 (URL No. TCH/1201000223F)

Test Results

Test Results																									
Sl. No.	Stack Particulars	Date of Sampling	Temp. °C	Diameter of Stack (mm)	Wind Velocity (m/sec)	Flue Gas Volume at 20°C (m³/min)	Influenced Water (mm)		Sulphur Dioxide (ppm)				Oxides of Nitrogen (ppm)				Carbon Monoxide (ppm)				Acid (ppm)	Variation (%)		Stack Emission (mg/hr)	
							mm	mm	SO ₂	SO ₃	NO _x	NO ₂	NO	NH ₃	CO	CO ₂	CO	CO ₂	CO	CO ₂					
1	HEATER 101 NGU	22.07.2020	100	8.0	0.25	17000.12	202	0.28	135	20.4	383	40.0	40.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
2	HEATER 201 NGU	22.07.2020	115	3.0	0.45	16000.43	208	0.48	134	19.7	247	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
3	HEATER 301 NGU	22.07.2020	116	3.0	0.45	16000.43	142	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
4	HEATER 401 NGU	22.07.2020	100	3.0	0.45	17000.31	154	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
5	HEATER 501 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
6	HEATER 601 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
7	HEATER 701 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
8	HEATER 801 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
9	HEATER 901 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
10	HEATER 1001 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
11	HEATER 1101 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
12	HEATER 1201 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
13	HEATER 1301 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
14	HEATER 1401 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
15	HEATER 1501 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
16	HEATER 1601 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
17	HEATER 1701 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
18	HEATER 1801 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
19	HEATER 1901 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
20	HEATER 2001 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
21	HEATER 2101 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
22	HEATER 2201 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
23	HEATER 2301 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
24	HEATER 2401 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
25	HEATER 2501 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
26	HEATER 2601 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
27	HEATER 2701 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
28	HEATER 2801 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
29	HEATER 2901 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
30	HEATER 3001 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
31	HEATER 3101 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
32	HEATER 3201 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
33	HEATER 3301 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
34	HEATER 3401 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
35	HEATER 3501 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
36	HEATER 3601 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
37	HEATER 3701 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
38	HEATER 3801 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
39	HEATER 3901 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
40	HEATER 4001 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
41	HEATER 4101 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
42	HEATER 4201 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
43	HEATER 4301 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
44	HEATER 4401 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
45	HEATER 4501 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
46	HEATER 4601 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
47	HEATER 4701 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
48	HEATER 4801 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
49	HEATER 4901 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
50	HEATER 5001 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
51	HEATER 5101 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
52	HEATER 5201 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
53	HEATER 5301 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
54	HEATER 5401 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
55	HEATER 5501 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
56	HEATER 5601 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
57	HEATER 5701 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
58	HEATER 5801 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
59	HEATER 5901 NGU	22.07.2020	100	3.0	0.45	17000.31	145	0.28	130	19.9	250	35.0	35.0	10.0	1.0	1.0	+0.00	0.00	0.0	0.00					
60	HEATER 6001 NGU	2																							

MARYANA TEST HOUSE

& Consultancy Services

30-4, Sector-28, Plot-4, HUDA, Phase-132 904 (HARYANA)

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Test Results of Stack Emission

Unit: Naptha Cracker

Month: MAY 2025

Dr. 04.06.2025

Test Results

Sr. No.	Stack Particular	Date of Sampling	Temp °C	Diameter of Stack (ft)	Gas Velocity (m/sec)	Flow Gas Volume at 25°C (Nm ³ /Hr)	Particulate Matter (SPM)		Sulphur Dioxide (SO ₂)		Oxides of Nitrogen (NO _x)		Carbon Monoxide (CO)		Nickel (ppm)	Vanadium (ppm)	Nickel+Vanadium Limit (M-V) (Unit: mg/Nm ³)	
							Unit: Gm. H ₂ mg/Nm ³	Unit: Gm. H ₂ mg/Nm ³	Unit: Gm. H ₂ mg/Nm ³	Unit: Gm. H ₂ mg/Nm ³	Unit: Gm. H ₂ mg/Nm ³	Unit: Gm. H ₂ mg/Nm ³	Unit: Gm. H ₂ mg/Nm ³	Unit: Gm. H ₂ mg/Nm ³				
							mg/Nm ³	kg/hr	ppm	mg/Nm ³	kg/hr	ppm	mg/Nm ³	kg/hr			mg/Nm ³	kg/hr
1	HEATER 101 NCU	27.05.2025	35	3.15	0.30	17946.00	2.5	0.00	4.00	0.45	1.0	10.00	30.00	5.50	1	1.00	0.00	0.00
2	HEATER 201 NCU	27.05.2025	38	3.10	0.32	17280.00	2.0	0.00	3.00	0.24	0.9	34.00	15.00	7.00	2	2.20	0.40	0.00
3	HEATER 301 NCU	27.05.2025	37	3.10	0.34	18000.00	2.0	0.44	3.00	7.00	1.4	10.00	30.00	5.50	1	0.00	0.40	0.00
4	HEATER 401 NCU	27.05.2025	35	3.10	0.30	17946.00	2.4	0.41	3.00	0.30	1.0	10.00	30.00	5.50	1	0.00	0.40	0.00
5	HEATER 501 NCU	27.05.2025	38	3.10	0.32	17470.00	2.2	0.40	3.00	0.24	0.8	23.00	40.00	7.50	1	0.00	0.00	0.00
6	HEATER 601 NCU	27.05.2025	35	3.10	0.30	17946.00	1.0	0.28	4.00	0.45	1.0	10.00	30.00	5.50	1	0.00	0.00	0.00
7	HEATER 701 NCU	27.05.2025	35	3.10	0.30	17946.00	1.0	0.28	4.00	0.45	1.0	10.00	30.00	5.50	1	0.00	0.00	0.00
8	HEATER 801 NCU	27.05.2025	35	3.10	0.30	17946.00	1.0	0.28	4.00	0.45	1.0	10.00	30.00	5.50	1	0.00	0.00	0.00
9	HEATER 901 NCU	27.05.2025	35	3.10	0.30	17946.00	1.0	0.28	4.00	0.45	1.0	10.00	30.00	5.50	1	0.00	0.00	0.00
10	HEATER 1001 NCU	27.05.2025	35	3.10	0.30	17946.00	1.0	0.28	4.00	0.45	1.0	10.00	30.00	5.50	1	0.00	0.00	0.00
11	HEATER 1101 NCU	27.05.2025	35	3.10	0.30	17946.00	1.0	0.28	4.00	0.45	1.0	10.00	30.00	5.50	1	0.00	0.00	0.00
12	HEATER 1201 NCU	27.05.2025	35	3.10	0.30	17946.00	1.0	0.28	4.00	0.45	1.0	10.00	30.00	5.50	1	0.00	0.00	0.00
13	HEATER 1301 NCU	27.05.2025	35	3.10	0.30	17946.00	1.0	0.28	4.00	0.45	1.0	10.00	30.00	5.50	1	0.00	0.00	0.00
14	HEATER 1401 NCU	27.05.2025	35	3.10	0.30	17946.00	1.0	0.28	4.00	0.45	1.0	10.00	30.00	5.50	1	0.00	0.00	0.00
Total in mg/Nm ³							5.70		22.40		6.00		10.00		1.00	0.00	0.00	0.00

Sr. Chemist/Mgr (Lab.)

MARYANA TEST HOUSE
Audited Signature