



इंडियन ऑयल कॉर्पोरेशन लिमिटेड

पारादीप रिफाइनरी

डाकघर: शिमानी - कुजंग, जिला: जगतसिंहपुर, ओडिशा-754141

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रिफाइनरी प्रभाग
Refineries Division

Ref: PDR/HSE/HC/MOEFCC/2025-26/002

Date: 23-05-2026

To,
Deputy Director General of Forests,
Ministry of Environment, Forest and Climate Change,
Integrated Regional Office,
A/3, Chandersekharapur, Bhubaneswar – 751023
Email: roez.bsr-mef@nic.in

Subject: Half Yearly Compliance Report of ECs issued to IOCL, Paradip Refinery

Dear Sir,

Please find enclosed the Half Yearly Compliance Report of the following ECs for period Oct'25 – Mar'26.

1. Compliance Status for Environment Clearance for Grass Root Refinery-cum Petrochemical Complex of 15 MMTPA at Paradip (Letter F.No.J-11011/70/2007-1A II (I) dated 06th Jul, 2007) is enclosed as **Annexure-A**.
2. Compliance Status for CRZ Clearance for laying of Storm Water Outfall Pipelines to sea for Paradip Refinery Project. (Letter F. No.11-86/2011-IA III dated 21st Feb'2012) is enclosed as **Annexure-B**.
3. Compliance Status for CRZ Clearance for laying of pipeline from Paradip Refinery to South Oil Jetty at Paradip Port, Odisha (Letter F. No. 11-33/2013-IA III, Government of India, Ministry of Environment & Forests (IA Division), Dated 19th Sep'2013) is enclosed as **Annexure-C**.
4. Compliance Status for CRZ Clearance for 'Pet Coke Evacuation Project' for Paradip Refinery in District Jagatsinghpur (Odisha) by Indian Oil Corporation Ltd – CRZ Clearance - reg. issued by Ministry of Environment and Forest (MoEF) (Letter no. F. No. 11-30/2015-IA.III dated 11th Feb'2016) enclosed as **Annexure-D**.
5. Compliance Status for EC and CRZ Clearance for "Installation Ethylene Recovery Unit, Mono Ethylene Glycol Unit and BS-VI facility by M/s Indian Oil Corporation Ltd (IOCL) at Paradip Refinery cum Petrochemical Complex, village Abhayachandrapur, Tehsil Kujang, District Jagatsinghpur (Odisha) – Environmental and CRZ Clearance - reg. issued by Ministry of Environment and Forest (MoEF) (Letter no. F. No. J-11011-344/2016-IA-II (I) dated 11th Oct' 2018) enclosed as **Annexure-E**.
6. Compliance Status for EC and CRZ Clearance for "Integrated Para-Xylene & Purified Terephthalic Acid (PTA) Project within existing Refinery complex by M/s. Indian Oil Corporation Limited, Paradip Refinery located at S.F. No-218, Abhayachandrapur Village, Jagatsinghpur District, Odisha State" reg. issued by Ministry of Environment and Forest (MoEF) (Letter no. F. No. J-11011/395/2012-IA-II (I) dated 9th Aug 2021) enclosed as **Annexure-F**.

Thanking you

With regards

(S Vijay Kumar)

Deputy General Manager (H,S&E) IOCL Paradip Refinery

Enclosures: As above

Copy to: The Member Secretary, Odisha Pollution Control Board, Paribesh Bhawan, A/118, Neelkanthanagar, Unit-8, Bhubaneswar - 751012, Odisha.

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CIN – L 23201 MH 1959 GOI 011388

ANNEXURES

Annexures	Description
Annexure-1	Compliance report of EC OM No.J-11011/26/1997-IA-II dated 24 th December, 1997.
Annexure- A to F	Compliance report of CRZ & ECs issued to Paradip Refinery from 2007 onward
Annexure-2	Stack Emission Report
Annexure-3	NHMC & Benzene monitoring Report
Annexure-4	VOC monitoring report
Annexure-5	Ambient Air quality report
Annexure-6	Sulphur Balance
Annexure-7	LDAR Report
Annexure-8	Treated effluent water quality report
Annexure-9	Ground water quality report
Annexure-10	Occupational Health report
Annexure-11	Marine water quality report
Annexure-12	Noise survey report
Annexure-13	Soil analysis report
Annexure-14	Forest clearance

Annexure-1

**Compliance report of EC OM No.
J-11011/26/1997-IA-II dt. 24th Dec'1997**

Annexure-1

Sub: Compliance Status for Environment Clearance of Grass Root Petroleum Refinery for processing 9.0 MMTPA crude including LPG dispatch facility and associated marine facilities, namely SPM, jetty and crude product pipeline at Abhayachandrapur, District Jagatsinghpur, Orissa of M/s Indian oil Corporation Ltd (Letter F.No.J-11011/26/97-1A II (I) dated 24th Dec, 1997) for Oct'25 to Mar'26

Note: The project was deferred as withdrawal of tax incentives from Govt. of Orissa and viability of the project affected. Later, the capacity is revised to 15 MMTPA for improving economic viability after agreement with Govt. of Orissa on tax incentives. Accordingly, DFR prepared with revised project details and EC obtained in 2007 (F.No. J-11011/70/2007-IA. II (I)).

S. NO.	CONDITION	STATUS
A.	SPECIFIC CONDITIONS:	
i.	The total land earmarked for refinery involves around 70 acres of forest land. Diversion of forest land and any construction work in forest area shall not be taken up till forestry clearance is obtained under Forest (Conservation) Act, 1980.	Complied. Forest clearance attached as Annexure-14 .
ii.	The total SO ₂ emission from the refinery shall not exceed 1000 kg/hr (max.). The gaseous emission from various process units including IGCC unit should conform to the standards prescribed under Environment (Protection) Rules, 86 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.	Complied with. SO ₂ emission in kg/hr being calculated on monthly basis. Stack Report attached as Annexure-2 . Sulphur Balance attached as Annexure-6 .
iii.	Sulphur Recovery Units with more than 99% efficiency shall be provided.	Sulphur Recovery Units with overall efficiency of >99% has been commissioned.
iv.	A minimum of 7 ambient air quality monitoring stations (SO ₂ , NO _x and HC) should be set up in the refinery area in consultation with SPCB, based on occurrence of maximum ground level concentration and down wind direction of wind as well as in the direction of Betelvine plantations. The monitoring network must be decided based on modelling exercise to represent short term GLCs. In addition, a mobile van with adequate facilities to monitor ambient air quality outside the refinery premises should be provided.	7 nos. of Ambient Air Quality Monitoring (AAQM) stations were set up based on the modelling exercise conducted under the Comprehensive EIA Study Continuous monitoring in all the 7 monitoring stations already implemented. On-line data transmission to OSPCB/CPCB server is already done. A dedicated mobile ambient air quality monitoring van is in place for monitoring of ambient air quality. Ambient Air quality monitoring report attached as Annexure-5
v.	Data on ambient air quality and stack emissions as well as fugitive emissions of HC from product storage tank yard, crude oil tanks etc. must be regularly monitored and submitted to CPCB/SPCB regularly once in 3 months and to Ministry (Regional Office, Bhubaneswar) once in 6 months.	Being Complied. Ambient Air quality attached as Annexure-5 Stack Report attached as Annexure-2 Fugitive emission in tankage area is enclosed as Annexure-4 .

S. NO.	CONDITION	STATUS
vi.	Liquid effluents generated from the refinery should be treated comprehensively to conform to the load-based standards and concentration limits prescribed under EPA rules.	State-of-the-art effluent treatment plant has been commissioned to treat industrial effluent as well as domestic sewage with maximum recycle facility. Balance treated effluent confirming to prescribed limits is being discharged to the sea through a pipeline of about 3 km from low tide line. Treated effluent quality report attached as Annexure-8.
vii.	In consultation with SPCB, adequate number of influent and effluent quality monitoring stations have to be planned. As recommended by NIO and approved by SPCB, the treated effluent shall be discharged at a distance of 3 km from the low tide line into the sea. The process effluent generated and discharged shall not exceed 8400 m ³ /day by incorporating maximum recycling and water conservation measures as per EMP. Regular monitoring of the effluent (Industrial/domestic and others) quality should be carried out and monitored data submitted quarterly to CPCB/SPCB and half yearly to Ministry (Regional Office, Bhubaneswar).	ETP Treated effluent after recycling is being discharged to the sea through a pipeline of about 3 km from low tide line. Treated effluent quality and flow are regularly monitored. On-line data transmission to OSPCB/CPCB server is already being done. Treated effluent quality report attached as Annexure-8. Treated Effluent Flow data attached as Annexure-8.
viii.	Guard ponds of sufficient holding capacity should be provided to contain the effluent during process disturbances and or ETP failure. The concerned units must be shut down in cases of effluent quality exceeding prescribed limits.	Complied. ETP Treated water is stored in separate ponds and in case of any upset, the same can be reprocessed again in ETP till the quality complies with prescribed limits.
ix.	Detailed Risk Analysis of the Refinery and associated facilities must be done once the engg. design and layout is frozen. Based on this, on-site and off-site emergency preparedness plan must be prepared. Approval from the nodal agency must be obtained before commissioning the project.	Complied. Paradip Refinery fully implemented all the conditions stipulated in EIA and Risk Assessment reports. Complied. On-site and off-site preparedness plans of Paradip Refinery is in place. Emergency Response and Disaster management Plan (ERDMP) has been approved by MoP&G On-site emergency plan is approved by Director of Factories and Boiler. Off-site plan is incorporated in District Emergency Plan.
x.	The project involves displacement of around 584 people. The R&R of project affected population shall be carried out as per the State Govt. guidelines prepared in consultation with the affected people. It is the responsibility of the State Govt. and Project Authority to see that adequate compensation and relief are provided to the affected population in a time bound fashion as per agreed norms. IOC also must consider adopting certain villages in the area and contribute to peripheral developments. A progress report on the R&R must be submitted to Ministry (Regional office), Bhubaneswar every 6 months.	Complied.

S. NO.	CONDITION	STATUS
xi.	The dredging of Jatadhar Mohan River mouth for meeting the requirement of fill material (for raising the level of project site) as recommended by NIO and State Govt. must be conducted with no disturbance to the sand bars and it must be ensured that the dredging is done within the LTLs from either side of river bank. For this IOC must firm up the scheme of dredging in consultation with NIO. Also, NIO must monitor the river/creek ecology including quality of water on a continuous/regular basis.	Complied.
xii.	IOC and State Govt. must strictly ensure that the guidelines and regulations contained in the approved CZMP of Orissa are adhered to w.r.t. Santra Creek, Jatadhar Mohan River, sea front and other surface water streams, if any, while taking up project related activities including Refinery, LPG storage, marine facilities laying of crude/product pipelines etc. All the conditions stipulated by the Odisha Coastal Zone Management Authority (OCZMA) shall be complied with.	Complied.
xiii.	A drainage pattern study of the region has to be carried out in view of large scale land-filling involved. As informed by IOC, the study has already been initiated by Water Resources Department, Government of Orissa. The study report must be submitted to the Ministry for its review. IOC must implement the action plans and recommendations in order to mitigate adverse impacts on the drainage aspects of the region.	Complied.
xiv.	The laying of submarine pipelines to the SPM should avoid the season when Ridley turtles frequent the coast.	Complied. Point was taken care. No construction work was done during the breeding season of olive Ridley turtles.
xv.	An oil spill contingency plan must be drawn up by IOC in consultation with Coast Guard to combat any oil spills around SPM, before commencement of operations. A copy of the plan must be submitted to the Ministry.	Complied. Oil spill contingency plan for SPM facility is in place.
xvi.	The marine facilities including SPM, jetty etc. must be provided with full-fledged firefighting set up etc. as prescribed by the competent authority dealing with such port establishments.	Complied.
B.	GENERAL CONDITIONS:	
i.	The Ministry reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry.	Noted

S. NO.	CONDITION	STATUS
ii.	The above stipulations would be enforced among others under the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991, the Coastal zone regulation Notification of February 1991 and amendments thereof.	Noted
C.	ANNEXURE-I Conditions	
1.	The project authorities must strictly adhere to the stipulations made by the State Government and the State Pollution Control Board.	Noted for compliance.
2.	No expansion or modification of the project can be undertaken without prior approval of the Ministry.	Noted for compliance.
3.	In case of deviations or alterations in the project proposed from those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any	Noted for Compliance.
4.	The project authorities must strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 as amended on 3 rd October 1994. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate etc. must be obtained.	Complied. All required licenses obtained from Competent Authorities.
5.	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, 1989. Authorization from the State Pollution Control Board must be obtained for collections/ treatment/ storage/ disposal of hazardous wastes.	Complied. HW authorization obtained from OSPCB vide Ref no. IND-IV-HW-930/9421 dated 16-05-2025 with a validity till 31-03-2027.
6.	Occupational Health Surveillance programme should be undertaken as regular exercise for all employees, specifically for those engaged in handling hazardous substances.	Complied with. OHC Report attached as Annexure-10 .
7.	The green belt of adequate width and density should be developed using native plant species, within and around plant premises in consultation with State Forest Department. A norm of 2000-2500 plants per ha. may be followed. As indicated in the EMPs supplementary data, a minimum of 580 acres shall be brought under green belt.	Complied with Greenbelt has been developed in an area of 580 acres with the help of Orissa Forest Development Corporation Ltd. (OFDCL). 5,95,000 trees have been planted around the refinery area and approx. Approx. 1,21,882 trees have been planted in the township. Every year, Paradip Refinery is doing plantation in and around Refinery. Till date approximately 9,60,230 trees have been planted.

S. NO.	CONDITION	STATUS
8.	A separate environmental management cell equipped with full-fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.	Complied. Dedicated Environment Management Cell headed by Chief General Manager-HSE exists in the Refinery to take care of all the environmental issues along with a dedicated Environmental monitoring laboratory to take care of all the environmental monitoring functions.
9.	Adequate financial provision should be made for time bound implementation of environment management plan and other measures. The funds earmarked for the environmental management and safeguard measures should not be diverted for other purposes and details giving year wise and itemise expenditure must be reported to the Ministry.	Being complied.
10.	The implementation of the project vis-à-vis environmental action plans will be monitored by Ministry's Regional Office at Bhubaneswar / State Pollution Control Board / Central pollution Control Board. A six-monthly compliance status report should be submitted to monitoring agencies.	Being complied.



1. **Annexure-A:** Compliance Status for Environment Clearance for Grass Root Refinery-cum Petrochemical Complex of 15 MMTPA at Paradip (Letter F.No.J-11011/70/2007-1A II (I) dated 06thJul, 2007).
2. **Annexure-B:** Compliance Status for CRZ Clearance for laying of Storm Water Outfall Pipelines to sea for Paradip Refinery Project. (Letter F. No.11-86/2011-IA III dated 21st Feb'2012).
3. **Annexure-C:** Compliance Status for CRZ Clearance for laying of pipeline from Paradip Refinery to South Oil Jetty at Paradip Port, Odisha (Letter F. No. 11-33/2013-IA III, Government of India, Ministry of Environment & Forests (IA Division), Dated 19th Sep'2013) is enclosed as.
4. **Annexure-D:** Compliance Status for CRZ Clearance for 'Pet Coke Evacuation Project' for Paradip Refinery in District Jagatsinghpur (Odisha) by Indian Oil Corporation Ltd – CRZ Clearance - reg. issued by Ministry of Environment and Forest (MoEF) (Letter no. F. No. 11-30/2015-IA.III dated 11th Feb'2016).
5. **Annexure-E:** Compliance Status for EC and CRZ Clearance for “Installation Ethylene Recovery Unit, Mono Ethylene Glycol Unit and BS-VI facility by M/s Indian Oil Corporation Ltd (IOCL) at Paradip Refinery cum Petrochemical Complex, village Abhayachandrapur, Tehsil Kujang, District Jagatsinghpur (Odisha) – Environmental and CRZ Clearance - reg. issued by Ministry of Environment and Forest (MoEF) (Letter no. F. No. J-11011-344/2016-IA-II (I) dated 11th Oct' 2018).
6. **Annexure-F:** Compliance Status for EC and CRZ Clearance for “Integrated Para-Xylene & Purified Terephthalic Acid (PTA) Project within existing Refinery complex by M/s. Indian Oil Corporation Limited, Paradip Refinery located at S.F. No-218, Abhayachandrapur Village, Jagatsinghpur District, Odisha State” reg. issued by Ministry of Environment and Forest (MoEF) (Letter no. F. No. J-11011/395/2012-IA-II (I) dated 9th Aug 2021).

IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

Annexure-A

Name of Project	:	Grass Root Refinery-cum-Petrochemical Complex of 15 MMTPA at Paradip, Odisha
Clearance Letter(s) No. & Date	:	F.No.J-11011/70/2007-1A II (I) dated 06 th July, 2007
Period of Compliance Report	:	Oct'25 to Mar'26

S. No.	CONDITION	STATUS	REMARKS
A.	SPECIFIC CONDITIONS:		
i.	The company shall ensure strict implementation/ compliance to the stipulations made by MOEF vide OM No. J-11011/26/1997-IA-II dated 24 th December 1997.	Complied	All stipulations are complied. Compliance report attached as Annexure-1
ii.	The gaseous emissions (SO ₂ , NO _x , CO, NMHC & Benzene) from the various process units shall conform to the standards prescribed under the Environment (Protection) Rules, 1986 or norms stipulated by the SPCB whichever is more stringent. At no time, the emission level shall 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.	Complied	Stack emission being monitored for adherence to the MoEF notification dated 18 th March'2008. Stack Reports attached as Annexure-2 NHMC and Benzene monitoring Report attached as Annexure-3



IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

S. No.	CONDITION	STATUS	REMARKS
iii.	Ambient air monitoring stations, [SPM, SO ₂ , NO _x and NMHC, Benzene] shall be set up in the refinery complex in consultation with SPCB, based on occurrence of maximum ground level concentration and down-wind direction of wind. The monitoring network must be decided based on modelling exercise to represent short term GLCs. Continuous on-line stack monitoring equipment shall be installed for measurement of SO ₂ and NO _x . Data on VOC shall be monitored and submitted to the SPCB/ Ministry.	Complied	7 nos. of Ambient Air Quality Monitoring (AAQM) stations were set up based on the modelling exercise conducted under the Comprehensive EIA Study Continuous monitoring in all the 7 monitoring stations already implemented. On-line data transmission to OSPCB/CPCB server is already done. Continuous monitoring in all stacks already implemented. On-line data transmission to OSPCB/CPCB server is already done. VOC monitoring being done at various locations of the Refinery. VOC Reports attached as Annexure-4 . Ambient Air quality attached as Annexure-5 . Stack report attached as Annexure-2 .
iv.	The total SO ₂ emission from the refinery complex shall not exceed 1000 kg/hr after fully stabilizing of the expansion and modernization of the refinery complex and upgrading the existing facilities. SO ₂ emission report may be made on daily basis for all the stacks (fuel burning and process emissions through the computerized mechanism). Further, regular monitoring of stacks every fortnight must also be carried out to cross check the data obtained from computerized monitoring by engaging a reputed organization. In addition, a monthly sulphur balance statement indicating type of fluid, its S – content, product S - content, SO ₂ emission etc. may be made. Daily, fortnightly and monthly reports generated as above shall be sent to the SPCB and MOEF.	Complied	SO ₂ emission in kg/hr being calculated monthly basis. Stack Report attached as Annexure-2 . Sulphur Balance attached as Annexure-6 .
v.	All the Sulphur Recovery Units shall have overall efficiency of 99.9%.	Complied	Sulphur Recovery Units with overall efficiency of 99.9% has been commissioned.
vi.	Ultra Low – NO _x burners shall be provided in the new furnaces to avoid excessive formation of NO _x .	Complied	Ultra Low NO _x burners installed in major fired heaters.



IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

S. No.	CONDITION	STATUS	REMARKS
vii.	Company shall install online SO ₂ and NO _x analysers in all the stacks of the refinery.	Complied	On-line SO ₂ and NO _x analysers installed in all the stacks of the refinery. Data being reflected in OSPCB/CPCB RTDAS.
viii.	Fugitive emissions of HC from product storage tank farms etc. must be regularly monitored. Sensors for detecting HC leakage shall be provided at strategic locations. Necessary measures shall be adopted so as to ensure that the NMHC levels outside the refinery complex premises do not exceed prescribed limits. Monitored data shall be submitted to OPCB / CPCB every three months and to Ministry of Environment & Forests every six months.	Complied	HC detectors installed in strategic locations of the tankage area. Fugitive emission in tankage area is attached as Annexure-7 .
ix.	For control of fugitive emissions, the company shall augment route all unsaturated hydrocarbons to the flare system in addition to the existing flare system. All the pumps and other equipment where there is a likelihood of HC leakages shall be provided with LEL indicators and also provide for immediate isolation of such equipment, in case of a leakage. The company shall adopt Leak Detection and Repair (LDAR) programme for quantification and control of fugitive emissions.	Complied	To safeguard process units during emergency, flare system is installed for complete combustion of hydrocarbon before releasing to atmosphere. All the pumps and other equipment where there is a likelihood of HC leakages has been provided with gas detectors and has been provided with provision for immediate isolation of such equipment, in case of a leakage. HC detectors are installed in strategic locations throughout the Refinery complex. LDAR programme is carried out and reports attached as Annexure-7 .
x.	All the stacks shall be of appropriate design and height shall be attached to pollution control systems, wherever necessary. All stacks in the complex must meet the minimum stack height criteria as prescribed in the Environment Protection emissions.	Complied	The minimum stack height designed as per the following: $H = 14 Q_g^{0.3}$ H = Height of stack in meters Q _g = Quantity of SO ₂ emission in kg/hr All the major stacks are of height more than 60 m and tallest height is that of flare, around 131 m.



IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

S. No.	CONDITION	STATUS	REMARKS
xi.	All new standards/ norms which are being proposed by CPCB for refinery projects/ petrochemical units shall be applicable for the proposed expansion and modernization of the petrochemical refinery complex. These standards shall be incorporated into the detail designs for the proposed expansion and modernization. The existing refinery complex shall also be upgraded to the new above mentioned emission standards.	Complied	The Refinery in its design has incorporated the updated environment standard issued on 18 th March'2008 for emission & discharge and 18 th November'2009 for Ambient Air Quality.
xii.	Ground water shall not be tapped for construction, industrial or domestic uses including the township.	Complied	Ground water is not being tapped for construction, industrial or domestic uses including the township at Paradip Refinery.
xiii.	Liquid effluents shall be treated to conform to the standards stipulated by CPCB / Ministry of Environment & Forests under EPA 1986 and also the new norms being specified. Treated effluent will be recycled and reused. The treated effluent shall be discharged into the sea through a pipeline of about 3 km from low tide line. The domestic effluent after treatment and conforming to the prescribed standards shall be used for greenbelt development.	Complied	State-of-the-art effluent treatment plant has been commissioned to treat industrial effluent as well as domestic sewage with maximum recycle facility. Balanced treated effluent after recycle being discharged to the sea through a pipeline of about 3 km from low tide line. Treated effluent water quality report attached as Annexure-8 .
xiv.	The company shall undertake monitoring of the groundwater quality at the locations as suggested by the Central Ground Water Board. Monitoring results of the same shall be submitted to the OPCB/CPCB and MOEF.	Complied	Ground water monitoring being carried out in the Refinery. Ground water quality monitoring report attached as Annexure-9 .
xv.	M/s IOCL shall undertake rainwater harvesting measures to recharge the ground water in the area in consultation with Central Ground Water Board and Orissa Pollution Control Board.	Complied	Two storm water reservoirs (Capacities: 2,96,000 KL and 3,13,000 KL) have been developed to store rainwater in monsoon in the Refinery premises. Also, storm water collection pond of capacity @ 470000 KL has been developed in Ecological Park. A study has been conducted for rainwater harvesting at PDR, however since water table is very high at PDR, no rainwater harvesting suggested in the report.



IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

S. No.	CONDITION	STATUS	REMARKS
xvi.	Green belt shall be raised in 580 acre area as per CPCB guidelines.	Complied	Greenbelt has been developed in an area of 580 acres with the help of Orissa Forest Development Corporation Ltd. (OFDCL). 5,95,000 trees have been planted around the refinery area and approx. 1,21,882 trees have been planted in the township. Every year, Paradip Refinery is doing plantation in and around Refinery. Till date approximately 9,60,230 trees have been planted.
xvii.	Occupational Health Surveillance of the employees and workers shall be done on a regular basis and records maintained as per the Factories Act.	Complied	Occupational Health Report attached as Annexure-10 .
xviii.	The marine water quality shall be regularly monitored for the water quality (temperature, petroleum hydrocarbons, phenols, sulphides, total organic carbon), sediment quality (trace elements, petroleum hydrocarbons, TOC and sediment size) and biological parameters (primary productivity, benthos, fish quality and growth, biomass, phytoplankton and zooplankton).	Complied	Marine water quality is being monitoring through MoEFCC recognised TPIA, quarterly. Marine water quality monitoring Report attached as Annexure-11 .
xix.	The design, material of construction, assembly, inspection, testing and safety aspects of operation and maintenance of pipeline and transporting the oil shall be governed by ASME/ANSI B31.8/B31.4 and OISD standard 141.	Complied	The Refinery complies to the relevant standards
xx.	The project authorities should install SCADA system with dedicated optical fibre-based telecommunication link for safe operation of pipeline and Leak Detection System. Intelligent pigging facility should be provided for the entire pipeline system for internal corrosion monitoring. Coating and impressed current cathodic protection system should be provided to prevent external corrosion.	Complied	Online detection of leak in the pipeline is through Optical fibre cable and is installed in South Oil jetty pipelines. Intelligent pigging is done for the facility pipeline system for internal corrosion monitoring. Cathodic protection system is provided for all underground pipelines to prevent external corrosion.
xxi.	The project authorities shall patrol and inspect the pipeline regularly for detection of faults as per OISD guidelines and continuous monitoring of pipeline operation	Complied	Regular patrolling is being done for the SOJ and Marketing pipelines.



IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

S. No.	CONDITION	STATUS	REMARKS
	by adopting non-destructive method(s) of testing as envisaged in the EMP. Pearson survey and continuous potential survey should be carried out at regular intervals to ensure the adequacy of cathodic protection system.		CAT & DCVG survey has been carried out within 05 years of commissioning of the lines (i.e., in 2021) as per OISD-138 guidelines by adopting non-destructive method(s).
xxii.	The solid waste shall be disposed of in secured landfill facility within the refinery. The spent catalyst and incinerated sludge will be stored in segregated manner in the secured landfill area. Tank bottom sludge from refinery operation shall be put to oil recovery system and the residual sludge will be incinerated. The incinerated sludge ash shall be stored in secured landfill inside refinery. Bio sludge shall be stored in drying pit for natural weathering and then used as manure inside refinery premises.	Complied	Melting pit has been constructed to recover oil from tank bottom sludge and Incinerator has been installed to burn the residual sludge. SLF has been constructed to dispose the incinerated ash. All facilities are in working conditions. Also tank bottom sludge (oil content less than 10%) after recovery of oil being disposed through SPCB approved vendors. In ETP, sludge drying bed is constructed for drying of bio sludge and is used as Manure in refinery plants
xxiii.	The company shall also comply with all the conditions and safeguards prescribed in the EIA & Risk Assessment Reports.	Complied	Paradip Refinery fully implemented all the conditions stipulated in EIA and Risk Assessment reports.
xxiv.	The On-site and Off-site Emergency Preparedness Plans, Oil Spill Contingency Plans, Marine Disaster Management Plan shall be prepared for the enhanced refinery throughput and submitted to the Ministry before commissioning at the enhanced capacity.	Complied	On-site and off-site preparedness plan, Oil Spill response plan of Paradip Refinery is in place. Emergency Response and Disaster management Plan (ERDMP) approved by PNGRB empaneled Third Party agency is in place. On-site emergency plan is submitted to Director of Factories and Boiler. Off-site plan is incorporated in District Emergency Plan.
xxv.	The Environment Management Cell and laboratory facilities for the collection of the samples shall be augmented with suitable facilities and qualified personnel and directly report to the chief executive of the refinery complex.	Complied	Dedicated Environment Management Cell headed by a HOD exists in the Refinery to take care of all the environmental issues.
xxvi.	The company shall prepare comprehensive EIA/EMP report and submit to the Ministry within one year.	Complied	Comprehensive EIA Report was prepared and submitted to SPCB on 12.09.2008 and MOEF on 22.09.2008. NIPL report has been submitted for enhanced capacity of 16.5 MMTPA.



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S. No.	CONDITION	STATUS	REMARKS
B.	GENERAL CONDITIONS:		
i.	The project authorities must strictly adhere to the stipulations made by the Orissa State Pollution Control Board and the State Government.	Complied	Noted for compliance.
ii.	No further expansion or modernization in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.	Complied	Noted for compliance.
iii.	At no time, the emissions shall 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 shall not be restarted until the desired efficiency has been achieved.	Complied	Noted for compliance.
iv.	The overall noise levels in and around the plant area should be kept well within the standards (75 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (daytime) and 70 dBA (night time).	Complied	Noise survey is regularly carried out by Industrial Hygienist, and the Noise levels are maintained as per standards.
v.	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.	Complied	All the provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 as amended in 2000 for handling of hazardous chemicals etc are fully complied. All required licenses obtained from CCE.
vi.	The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management and Handling) Rules, 2003. Authorization from the State Pollution Control Board must be obtained for collections/treatment/storage/disposal of hazardous wastes.	Complied	HW authorization obtained from OSPCB vide Ref no. IND-IV-HW-930/9421 dated 16-05-2025 with a validity till 31-03-2027.
vii.	The project authorities will provide requisite 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	Being Complied	Paradip Refinery has installed all the pollution control units at an approximate cost of 10% of the capital expenditure of Refinery. In FY 2025-26, total expenditure on account of environment related job was approximately of Rs. 47.93



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S. No.	CONDITION	STATUS	REMARKS
	schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.		Cr. Yearly budget provision is made for env. related activities.
viii.	The stipulated conditions will be monitored by the Regional of this Ministry at Bhubaneshwar / Central Pollution Control Board / State Pollution Control Board. A six-monthly compliance report and the monitored data should be submitted to them regularly.	Being Complied	Six monthly compliance report is being sent to MoEF and zonal office of SPCB. Last report was submitted vide letter no. PDR/HSE/HC/MOEFCC/2025-26/001 dated 29.11.2025 for Apr'25 to Sep25.
ix.	The Project Proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board/ Committee and may also be seen at Website of the Ministry of Environment and Forests at http://www.envfor.nic.in . This should be advertised within seven days from the 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.	Complied	The information has been published in the two daily local newspapers i.e. 'The Samaj' in Oriya and 'The Indian Express' in English dated 18.07.2007.
x.	The Project Authorities should inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Complied	The Board of Directors of IOCL accorded investment approval on 28.02.2009 for the project. EC-No. J-11011/70/2007-1A-II (I) dt. 06.07.2007. Consent to Establish (CTE) was granted by SPCB, Odisha on 14.07.2008. The land development work for the project commenced from 16.03.2009.



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Annexure-B

Name of Project	:	CRZ Clearance for laying of Storm Water Outfall Pipelines to sea for Paradip Refinery Project
Clearance Letter(s) No. & Date	:	F. No.11-86/2011-IA III dated 21st February 2012
Period of Compliance Report	:	Oct'25 to Mar'26

S.N.	SPECIFIC CONDITIONS:	STATUS	REMARKS
4(i)	"Consent for Establishment" shall be obtained from State Pollution Control Board under Air and Water Act and a copy shall be submitted' to the Ministry before start of any construction work at the site.	Complied	"Consent for Establishment" obtained vide letter no. 12048 Ind-II-NOC- 4600 dated 25-06-2012
(ii)	The proposed storm water line shall be laid along the Crude Oil pipeline corridor which was accorded CRZ clearance for transportation of crude oil after the recommendation of the SCZMA. However, the proponent shall submit the CRZ map showing the proposed pipeline route to SCZMA with a copy to the Ministry before commencement of the work.	Being Complied	Complied with CRZ map has already been submitted (Ref. No. IOCL/PDRP/LSTK-11/1/014)
(iii)	The unit shall provide separate drains and collection system at the process area so as to prevent any possible mixing of process spillage in to storm water as proposed.	Being Complied	Separate drains for storm water and process drains have been provided in the process area of the Refinery.
(iv)	The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.	Being Complied	Dedicated Environment Management Cell headed by a HOD exists in the Refinery to take care of all the environmental issues.
(v)	The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.	Being Complied	Paradip Refinery has installed all the pollution control units at an approximate cost of 10% of the capital expenditure of Refinery. In FY 2025-26, total expenditure on account of environment related job



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S.N.	SPECIFIC CONDITIONS:	STATUS	REMARKS
			was approximately of Rs. 47.93 Cr. Yearly budget provision is made for env. related activities.
	<u>GENERAL CONDITIONS:</u>		
5(i)	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.	Complied	Taken care during construction activities. Now lines are already commissioned.
(ii)	Full support shall be extended to the officers of this Ministry/ Regional Office at Bhubaneswar by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.	Complied	Being Complied
(iii)	A six-Monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bhubaneswar regarding the implementation of the stipulated conditions.	Complied	Six monthly compliance report is being sent to MoEF and zonal office of SPCB. Last report was submitted vide letter no. PDR/HSE/HC/MOEFCC/2025-26/001 dated 29.11.2025 for Apr'25 to Sep25.
(iv)	Ministry of Environment & Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary, in the interest of environment and the same shall be complied with.	Complied	Noted
(v)	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.	Complied	Noted
(vi)	In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.	Complied	Noted
(vii)	The project proponents 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 land development work.	Complied	This is the part of the entire Refinery Project. The Board of Directors of IOCL accorded investment approval for the entire project at Paradip on 28.02.2009 for the project.



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S.N.	SPECIFIC CONDITIONS:	STATUS	REMARKS
(viii)	State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Center and Collector's Office/Tehsildar's office for 30 days.	Complied	For compliance by OSPCB office.
6	These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 1994, including the amendments and rules made thereafter	Complied	Noted
7	All other statutory clearances such as the approvals for storage of diesel from Chief Controller. of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.	Complied	Paradip Refinery has already obtained all necessary statutory approvals
8	The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the- project has been accorded Environmental Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at http://www.envfor.nic.in . The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Bhubaneswar.	Complied	Advertisement placed in two newspapers (One is "The Samaja" and other is "The Times of India"), dated 1 st March'12).
9	Environmental clearance is subject to final order of the Hon'ble-Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.	Complied	Noted
10	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website	Complied	Complied



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S.N.	SPECIFIC CONDITIONS:	STATUS	REMARKS
11.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad/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 website of the company by the proponent.	Complied	Complied
12	The proponent shall upload the status of compliance of the stipulated EC 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 MoEF, the respective Zonal Office of CPCB and the SPCB.	Complied	Six monthly compliance report is being sent to MoEF and zonal office of SPCB. Last report was submitted vide letter no. PDR/HSE/HC/MOEFCC/2025-26/001 dated 29.11.2025 for Apr'25 to Sep25.
13	The environmental statement for each financial year ending 31 st 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 along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.	Complied	Paradip Refinery submitted the Environment Statement for FY 2025-26 on 23.05.2026 as per target. EC conditions compliance is available in iocl website. H-1 EC condition compliance has also been submitted on 29.11.2025 to RO as per time schedule.



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Subject: EC CRZ - Compliance Status Report

Annexure-C

Name of Project	:	CRZ Clearance for laying of pipeline from Paradip Refinery to South Oil Jetty at Paradip Port, Odisha
Clearance Letter(s) No. & Date	:	F. No. 11-33/2013-IA III dated 19 th September, 2013
Period of Compliance Report	:	Oct'25 to Mar'26

S.N.	SPECIFIC CONDITIONS:	STATUS	REMARKS
5(i)	"Consent for Establishment" shall be obtained from State Pollution Control Board under Air and Water Act and a copy shall be submitted to the Ministry before start of any construction work at the site.	Complied	"Consent for Establishment" obtained vide letter no 12048 Ind-II-NOC- 4600 dated 25-06-2012. Copy has been submitted to the ministry vide letter no. PDRP/HSE/CRZ/MoEF/2013-1 dated 03.10.2013.
(ii)	All the conditions of Forest Clearance dated 06/02/2013 shall be complied with.	Complied	Compliance status already submitted and based on the status, Forest and Environment Dept. Govt. of Odisha has been issued a letter (Letter No. 10F(Cons)510/2012 23891/F&E. Dtd 20/11/13) to accord the final clearance.
(iii)	The laying of pipeline at creek shall be carried out in such a way that it shall not obstruct tidal flow of the creek.	Complied	Due care was taken during laying of the pipeline.
(iv)	All the conditions stipulated by the Odisha Coastal Zone Management Authority (OCZMA) shall be complied with.	Complied	Complied.
(v)	Laying pipe line shall not be carried out during the breeding of olive Ridely turtle as committed vide undertaking dated 25.06.2013.	Complied	No construction work was done during the breeding season of olive Ridely turtle.
(vi)	Soil and water samples shall be regularly monitored along the pipeline route to check the leakage/contamination, if any and shall examine if any strengthening is required.	Complied	Soil quality monitoring job is being carried out by third party lab recognized by MoEFCC. Soil quality monitoring Report attached as Annexure-13 .
(vii)	Proper oil spillage contingency plan shall be put in place.	Complied	Approved Oil Spill Contingency is in place for tackling any eventuality.



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S.N.	SPECIFIC CONDITIONS:	STATUS	REMARKS
(viii)	It shall be ensured that there is no disturbance to people, houses or fishing activity as a result of the project.	Complied	Complied.
(ix)	The smooth and safe operation of the system shall be ensured by incorporating a computerized SCADA (Supervisory Control And Data Automation) system. Any leakage in the pipeline shall be immediately detected by the Computer system and product pumping shall be immediately cut off.	Complied	Leak detection by optical fibre cable installed for south oil jetty pipelines.
(x)	All the recommendation of the EMP shall be complied with letter and spirit. All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to MoEF along with half yearly compliance report to MoEF-RO.	Complied	Complied
(xi)	The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.	Complied	Dedicated Environment Management Cell headed by a HOD exists in the Refinery to take care of all the environmental issues.
(xii)	The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.	Being Complied	Paradip Refinery has installed all the pollution control units at an approximate cost of 10% of the capital expenditure of Refinery. In FY 2025-26, total expenditure on account of environment related job was approximately of Rs. 47.93 Cr. Yearly budget provision is made for env. related activities.
	GENERAL CONDITIONS :		
6(i)	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.	Complied	Due care was taken during construction. Now the lines are already commissioned.
(ii)	Full support shall be extended to the officers of this Ministry/Regional Office at Bhubaneswar by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.	Agreed to Compliance	Noted for compliance
(iii)	A six-monthly monitoring report shall need to be submitted by the project	Being	Six monthly compliance report is being sent to MoEF



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S.N.	SPECIFIC CONDITIONS:	STATUS	REMARKS
	proponents to the Regional Office of this Ministry at Bhubaneswar regarding the implementation of the stipulated conditions.	Complied	and zonal office of SPCB. Last report was submitted vide letter no. PDR/HSE/HC/MOEFCC/2025-26/001 dated 29.11.2025 for Apr'25 to Sep'25.
(iv)	Ministry of Environment & Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.	Agreed to Compliance	Noted
(v)	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.	Agreed to Compliance	Noted
(vi)	In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.	Agreed to Compliance	Noted
(vii)	The project proponents 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 land development work.	Complied	This is the part of the entire Refinery Project. The Board of Directors of IOCL accorded investment approval for the entire project at Paradip on 28.02.2009 for the project.
(viii)	State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Centre and Collector's Office/Tehsildar's office for 30 days.	Agreed to Compliance	Compliance by OSPCB
9	The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded CRZ Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at http://www.envfor.nic.in . The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Bhubaneswar.	Complied	Advertisement placed in two newspapers (One is "The Samaj" and other is "The New Indian Express", dated 29 th Sept'13)



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S.N.	SPECIFIC CONDITIONS:	STATUS	REMARKS
11	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.	Complied	Complied
12	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad /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 website of the company by the proponent.	Complied	Complied
14	The proponent shall upload the status of compliance of the stipulated 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 MoEF, the respective Zonal Office of CPCB and the SPCB.	Being Complied	Six monthly compliance report uploaded in Parivesh portal, and it is also sent to MoEF and zonal office of SPCB. Last report was submitted vide letter no. PDR/HSE/HC/MOEFCC/2025-26/001 dated 29.11.2025 for Apr'25 to Sep25.
15	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 along with the status of compliance of Clearance conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.	Complied	Complied



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Annexure-D

Name of Project	:	CRZ Clearance for 'Pet Coke Evacuation Project' for Paradip Refinery in District Jagatsinghpur (Odisha)
Clearance Letter(s) No. & Date	:	F. No. 11-30/2015-IA.III dated 11th February, 2016
Period of Compliance Report	:	Oct'25 to Mar'26

S.N.	CONDITIONS:	STATUS	REMARKS
A	SPECIFIC CONDITIONS:		
i)	The project proponent shall undertake periodic inspection and maintenance to avoid spillages, wear and tear of the proposed conveying system.	Complied	Complied
ii)	Adequate safe guards including alarm and emergency shutdown system shall be provided for the proposed conveying system.	Complied	Complied
iii)	Proper fire hydrant and fire extinguisher shall be provided at appropriate locations conforming to prevailing norms or fire safety.	Complied	Complied
iv)	There shall be no destruction of the mangrove during construction as well as the operation phase.	Complied	Complied
v)	The top soil of excavated area during the construction shall be kept separately and to be used for vegetation.	Complied	Excavated soil used in Ecological Park and roadside land filling which used for vegetation.
vi)	The labour camps, storage of material and machinery during construction phase shall be located outside the CRZ.	Complied	Yes, located outside the CRZ.
vii)	Crossing of creek shall be on trestles with adequate clearance thereby having negligible impact on the flow.	Complied	The RRLS facility is laid on the existing bridge for which sufficient clearance already exist.
viii)	During construction, solid waste generated will include packaging and wrapping material, stubs of spent welding electrodes, used rags and housekeeping etc. The project proponent shall ensure disposal of such wastes at approved sites. There shall be no disposal in CRZs.	Complied	Complied
ix)	There shall be no ground water withdrawal within CRZ limits.	Complied	Complied



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S.N.	CONDITIONS:	STATUS	REMARKS
x)	All the recommendations and conditions specified by Odisha Coastal Zone Management Authority (OCZMA) vide letter No. 56/OCZMA dated 25.08.2015, shall be complied with.	Complied	Complied
xi)	Project proponent shall implement all the recommendations stipulated in the EIA, EMP and Risk Assessment reports pertaining to the project.	Complied	Complied
xii)	The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.	Complied	Dedicated Environment Management Cell headed by a HOD exists in the Refinery to take care of all the environmental issues.
xiii)	The project proponent shall take up mangrove plantation/ green belt in the project area, wherever possible. Adequate budget shall be provided in the Environment Management Plan for such mangrove development.	Complied	Complied
B	General Conditions		
i)	'Consent to Establish' shall be obtained from the State Pollution Control Board under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.	Complied	Complied
ii)	A copy of the clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industries centre and Collector's Office/ Tehsildar's office for 30 days.	Agreed for Compliance	Compliance at OSPCB site
iii)	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its concerned Regional Office.	Complied	Paradip Refinery has installed all the pollution control units at an approximate cost of 10% of the capital expenditure of Refinery. In FY 2025-26, total expenditure on account of environment related job was approximately of Rs. 47.93 Cr. Yearly budget provision is made for env. related activities.
5	The above stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and control of Pollution) act 1981, the Environment (Protection) Act, 1986, the	Agreed for Compliance	Noted



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S.N.	CONDITIONS:	STATUS	REMARKS
	Public Liability (Insurance) Act, 1991, EIA Notification, 2006 and CRZ Notification, 2011.		
6	Officials from the Regional Office of MoEF&CC, Bhubaneswar who would be monitoring the implementation of environmental safeguards should be given full cooperation, facilities and documents/ data by the project proponents during their inspection. A complete set of all the documents submitted to MoEF&CC should be forwarded to the CCF, Regional Office of MoEF&CC Bhubaneswar.	Agreed for Compliance	Noted
7	In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Ministry.	Agreed for Compliance	Noted for Compliance
8	The Ministry reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the CRZ Clearance under the provisions of the Environmental (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.	Agreed for Compliance	Noted
9	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.	Complied	Complied
10	The project proponent should advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded CRZ Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment, Forest & Climate Change at http://www.envfor.nic.in . The advertisement should be made within Seven days from the date of receipt of the Clearance letter and a copy of the	Complied	Complied

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S.N.	CONDITIONS:	STATUS	REMARKS
	same should be forwarded to the Regional Office of this Ministry at Bhubaneswar.		
11	This Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.	Agreed for Compliance	Noted
12	Any appeal against this clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	Agreed for Compliance	Noted
13	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad/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 website of the company by the proponent.	Complied	Complied



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Annexure-E

Name of Project	:	EC and CRZ Clearance for “Installation Ethylene Recovery Unit, Mono Ethylene Glycol Unit and BS-VI facility at Paradip Refinery cum Petrochemical Complex, village Abhayachandrapur, Tehsil Kujanga, District Jagatsinghpur (Odisha)
Clearance Letter(s) No. & Date	:	F. No. J-11011-344/2016-IA-II (I) dated 11 th October, 2018
Period of Compliance Report	:	Oct'25 to Mar'26

S.N.	CONDITIONS:	STATUS	REMARKS
11.0	EC 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.	Complied	Consent to Establish for the said project obtained from OSPCB vide letter ref: 9365/IND-II-NOC-6193 dated 06-08-2018.
ii)	Necessary authorization required under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and Solid Waste Management Rule, 2016 shall be obtained and provisions contained in the Rules shall be strictly adhered to.	Complied	MEG&ERU and BS-VI project is part of the existing Refinery which is having valid HW Authorization vide ref no. IND-IV-HW-930/9421 dated 16.05.2025 with a validity till 31-03-2027
iii)	National Emission standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G.S.R 608 € dated 21st July, 2010 and amended from time to time shall be followed.	Complied	G.S.R 186 (E) dated 18 th March 2008 is applicable to Oil Refinery and IOCL Paradip Refinery is complying the same.
iv)	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 NAAQMS. The gaseous emissions shall be dispersed through stacks of adequate height as per the CPCB/SPCB guideline.	Complied	Stack height is as per statutory requirement i.e. $H = 14 Q_g^{0.3}$ H = Height of stack in meters Q _g = Quantity of SO ₂ emission in kg/hr



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Subject: EC CRZ - Compliance Status Report

S.N.	CONDITIONS:	STATUS	REMARKS
v)	The project proponent shall take necessary steps to prevent any liquid hydrocarbon falling on the water body of the creek from the pipelines passing over the bridge of Santra creek by creating a tray like barrier below the pipelines which can hold any leakage materials.	Complied	Providing tray barrier or enclosure around the pipelines crossing over the creek require humongous structures erection at the extant pipelines bridge, so as to maintain integrity & stability of structures against high wind pressure load considering super cyclones prone location of Paradip Refinery. While reviewing pipe racks adequacy for new projects, it was found that the structures cannot accommodate additional load. Hence the arrangement to provide trays below the pipelines is not feasible. Accordingly, IOCL has put in the following mitigation measures for oil spill containment: • The refinery location is compatible with Design standards; O&M & Inspection practices ensure integrity of pipelines and structure stability. • Illumination at pipeline bridge area has been enhanced. • The bridge area is under patrolling by CISF personnel placed at site round-the-clock. • All the pipelines crossing the creek are subject to health checks like monthly walk thru inspection, quarterly thickness sampling for corrosion detection and periodical LRUT survey as per standards (once in two years) and records maintained. View the above actions, hydrocarbon pipelines leakage probability is almost negligible.



IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

S.N.	CONDITIONS:	STATUS	REMARKS
			Also, adequate numbers of Oil spill containment Booms, Boats, oil adsorbent, oil dispersant and cleaning kit are kept as emergency standby near Santra creek for tackling any Leak scenario. Oil Spill Response plan of Paradip Refinery duly approved by competent authorities is in place to tackle any leak scenario.
vi)	Total water requirement shall not exceed 4685 cum/hr to be met from Mahanadi River. Necessary permission in this regard shall be obtained from the concerned regulatory authority.	Complied	Being complied
vii)	Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arrestors shall be provided on tank farm, and solvent transfer to be done through pumps.	Complied	Being complied
viii)	Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.	Complied	Being complied
ix)	Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic and evaporation salt shall be disposed off to the TSDF. The ash from boiler shall be sold to brick manufacturer/cement industry.	Complied	MEG-ERU and BS-VI facility is integral part of the existing Refinery. All the wastes are disposed off in line with the HW approval issued by OSPCB.
x)	The company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemical (MSIHC) Rules, 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989.	Complied	Being complied
xi)	Regular VOC monitoring to be done at vulnerable points	Complied	Being complied



IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

S.N.	CONDITIONS:	STATUS	REMARKS
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	Complied	Complied
xiii)	Comprehensive water audit to be conducted on annual basis and report to the concerned Regional Office of MoEF&CC. Outcome from the report to be implemented for conservation scheme	Complied	Water Audit by M/s EIL has been carried out for entire Refinery in 2019-20. Periodic monitoring and audit of water management is done in-house, and all leaks/maintenances are done time to time for water conservation. In the FY 2024-25, Water conservation scheme to re-use Storm water from ponds in Cooling towers has been implemented. In the year 2025-26 reuse of boiler blowdown water in cooling tower as makeup has been implemented. The use of UF permeate in fire water make up is under implementation.
xiv)	Oil catchers/oil traps shall be provided at all possible locations in rain/ storm water drainage system inside the factory premises	Complied	Oil catchers are provided at all possible locations in rain/ storm water drainage system.
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.	Complied	IOCL PDR has installed facilities like Vapor recovery system, Closed feed system etc. to minimize spillage or vent.



IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

S.N.	CONDITIONS:	STATUS	REMARKS
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 roadsides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the State Forest Department.	Being complied	Complied Greenbelt has been developed in an area of 580 acres with the help of Orissa Forest Development Corporation Ltd. (OFDCL). 5,95,000 trees have been planted around the refinery area and approx. 1,21,882 trees have been planted in the township. Green belt has already been developed for the existing Refinery as per the original EC requirement. Further plantation shall be done in the available land with the support of local community.
xvii)	At least 0.25% of the total project cost shall be allocated for Corporate Environment Responsibility (GER) and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office.	Being complied	Complied
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	Complied	Complied. DG sets is available at P&U for handling any black out emergency. Stack heights, emissions and acoustic enclosure are as per CPCB guidelines.
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	Complied	The entire unit is protected by Fixed and portable firefighting facilities confirming to OISD-116.
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		Continuous online (24x7) monitoring of stack for measurement of flue gas discharge and the pollutants concentration along with data transmission to CPCB and SPCB server is available. Treated effluent water meeting MINAS parameters limits is discharged from the Refinery through a closed system into deep Sea at 3 km from LTL through diffuser. Online analysers have been provided in the



IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

S.N.	CONDITIONS:	STATUS	REMARKS
			effluent discharge line for continuous monitoring of the treated effluent discharge water quality and quantity and real time data sent online to CPCB, SPCB. CCTV camera is installed for monitoring of effluent discharge line area.
xxi)	Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act	Complied	Occupational Health Report attached as Annexure-10 .
xxii)	All terms and conditions stipulated by the State Coastal Zone Management Authority in their recommendation/NOC letter dated 11 th January, 2018 shall be strictly adhered to	Complied	Complied
xxiii)	The National Emission Standards for Petroleum Oil Refinery issued by the Ministry vide G.S.R. 186(E) dated 18 th March, 2008 and G.S.R. 595(E) dated 21 st August, 2009 as amended from time to time shall be followed	Complied	Paradip Refinery is strictly following the Standards vide G.S.R. 186(E) dated 18 th March 2008 and G.S.R. 595(E) dated 21 August, 2009
xxiv)	The National Emission Standards for Petrochemical (Basic & Intermediates) issued by the Ministry vide G.S.R. 820 (E) dated 9 th November, 2012 as amended time to time shall be followed.	Complied	Shall be complied.
11.1	Compliance of other general conditions:		
i)	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board, Central Pollution Control Board, State Government and any other statutory authority	Complied	Complied
ii)	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any	Complied	Complied



IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

S.N.	CONDITIONS:	STATUS	REMARKS
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.	Complied	Complied
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.	Complied	Complied
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).	Complied	Complied
vi)	The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and use the same water for the process activities of the project to conserve fresh water	Complied	Ground water recharging is not suitable in Paradip region as water table is very high. However, Refinery has constructed two storm water reservoirs (Capacities: 2,96,000 KL and 3,13,000 KL) to store monsoon rainwater in Refinery premises for re-use. Further, Refinery has developed an Ecological Park integrated with rainwater harvesting pond which can store approximately 470000 KL water during rain.
vii)	Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	Complied	Complied
viii)	The company shall also comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the	Complied	EIA/EMP recommendations are complied.



IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

S.N.	CONDITIONS:	STATUS	REMARKS
	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	Complied	IOCL PDR is implementing projects under CSR and CER extensively for improving the socio-economic conditions of the surrounding area
x)	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment	Complied	Paradip Refinery has recently developed an ecological park to create an ambience for ecology and sustainability.
xi)	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	Complied	Paradip Refinery has installed all the pollution control units at an approximate cost of 10% of the capital expenditure of Refinery. In FY 2025-26, total expenditure on account of environment related job was approximately of Rs. 47.93 Cr. Yearly budget provision is made for env. related activities.
xii)	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	Complied	Complied
xiii)	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF&CC, the respective Zonal Office of CPCB and SPCB. A copy of Environmental Clearance and six-monthly compliance	Complied	Being complied Six monthly compliance report is being sent to MoEF and zonal office of SPCB. Last report was submitted



IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

S.N.	CONDITIONS:	STATUS	REMARKS
	status report shall be posted on the website of the company.		vide letter no. PDR/HSE/HC/MOEFCC/2025-26/001 dated 29.11.2025 for Apr'25 to Sep25.
xiv)	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 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	Complied	Paradip Refinery submitted the Environment Statement for FY 2025-26 on 23.05.2026 as per target. EC conditions compliance is available in iocl website. H-1 EC condition compliance has also been submitted on 29.11.2025 to RO as per time schedule.
xv)	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at http://moef.nic.in . This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry	Complied	Advertisement placed in two newspapers (One is "The Samaja" and other is "The Times of India")  
xvi)	The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project	Complied	Being complied

Annexure-F



IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

Name of Project	:	EC and CRZ Clearance for “Integrated Para-Xylene & Purified Terephthalic Acid (PTA) Project within existing Refinery complex by M/s. Indian Oil Corporation Limited, Paradip Refinery located at S.F. No-218, Abhayachandrapur Village, Jagatsinghpur District, Odisha State
Clearance Letter(s) No. & Date	:	F. No. J-11011/395/2012-IA-II (I) dated 9 th Aug 2021
Period of Compliance Report	:	Oct'25 to Mar'26

S.N.	CONDITIONS:	STATUS	REMARKS
A	SPECIFIC CONDITIONS:		
i)	Construction in CRZ area shall be in accordance with the provision of CRZ Notification, 2011 and as amended from time to time. The project proponent shall comply with all the conditions stipulated in OCZMA/CRZ recommendations and NOC issued for the same.	Complied	Complied
(ii)	No groundwater shall be extracted to meet the water requirements during the construction phase of the project, within CRZ area.	Complied	No ground water is extracted at Paradip Refinery.
(iii)	The PESO clearance shall be obtained, if related by M/s IOCL before commencing the project activities.	Complied	Noted for compliance.
(iv)	No excavated material during the construction shall be dumped in water bodies adjacent to CRZ areas. CRZ site shall be restored to near original condition after completion of construction.	Complied	Complied
(v)	The company shall submit detailed study report on odour pollutants from the industry, their control and mitigation within petrochemical refinery after carrying out continuous monitoring for one month and the report shall be submitted within three (03) months to the Ministry.	Complied	Odour Pollutant Study has been done by M/s Chola MS and report submitted on 31.05.2022. No significant findings from Paradip refinery were observed by the agency.
(vi)	The company shall 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.	Complied	Complied



IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

S.N.	CONDITIONS:	STATUS	REMARKS
(vii)	Total freshwater requirement shall not exceed 89832 m3/day, proposed to be met from River Mahanadi. Necessary permission in this regard shall be obtained from the concerned regulatory authority. The freshwater requirement shall be reduced after installation of rainwater harvesting system in the unit/project area.	Complied	Complied
(viii)	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.	Complied	Water Audit by M/s EIL has been carried out for entire Refinery in 2019-20. Periodic monitoring and audit of water management is done in-house, and all leaks/maintenances are done time to time for water conservation. In the FY 2024-25, Water conservation scheme to re-use Storm water from ponds in Cooling towers has been implemented. In the year 2025-26 reuse of boiler blowdown water in cooling tower as makeup has been implemented. The use of UF permeate in fire water make up is under implementation.
(ix)	Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.	Complied	Complied
(x)	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.	Complied	Being Complied for existing Refinery complex and shall be complied with in PX-PTA unit as well.
(xi)	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.	Complied	Noted for compliance. Refinery ETP sludge is processed in Delayed Coker unit in Refinery itself as per HW authorization. Ash generation from boilers is very less ~ 20MT/ Annum as cleaner fuel is fired in boilers and ash being a small quantity is disposed in captive SLF.



IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

S.N.	CONDITIONS:	STATUS	REMARKS
(xii)	Regular VOC monitoring shall be done at vulnerable points.	Complied	Being Complied for existing Refinery complex and shall be complied with in PX-PTA unit as well.
(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.	Agreed for Compliance	Noted for compliance.
xiv)	Oil catchers/oil traps shall be provided at all possible locations in rain/ storm water drainage system inside the factory premises.	Complied	PX-PTA facility is integral part of the existing Refinery. Oil catchers are already provided in the existing facility.
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 cleaning etc. to reduce wastewater generation.	Complied	IOCL PDR has installed facilities like Vapor recovery system, Closed feed system etc. to minimize spillage or vent.
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.	Agreed for Compliance	Complied Greenbelt has been developed in an area of 580 acres as per original EC issued to Paradip Refinery with the help of Orissa Forest Development Corporation Ltd. (OFDCL). 5,95,000 trees have been planted around the refinery area and approx. 1,21,882 trees have been planted in the township. Green belt has already been developed for the existing Refinery as per the original EC requirement. Further plantation shall be done in the available land with the support of local community



IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

S.N.	CONDITIONS:	STATUS	REMARKS
			IOCL Paradip Refinery explored plantation in forest lands. However, same could not be done due to non-availability of forest lands in Jagatsinghpur district as confirmed by Forest Office, Jagatsinghpur. - Parallely, IOCL has also approached Odisha government to allocate suitable land parcels for plantation requirements for Paradip Refinery. - IOCL has also registered in "Green credit Portal" of the govt of India for allocation of land parcels for plantation. However, no land parcels are available in Odisha as on date for plantation.
xvii)	As per the Ministry's OM dated 30.09.2020 superseding the OM dated 01.05.2018 regarding the Corporate Environmental Responsibility, and as per the action plan proposed by the project proponent to address the socio-economic and environmental issues in the study area, the project proponent, as committed, shall provide education funds in technical training centers/ support in nearby village's schools, support in health care facilities, drinking water supply and funds for miscellaneous activities like solar street lights, battery, solar panel etc., in the nearby villages. The action plan shall to be completed within time as proposed.	Agreed for Compliance	Noted for compliance IOCL PDR is implementing projects under CER extensively for improving the socio-economic conditions of the surrounding area.
xviii)	The project proponent shall ensure 70% of the employment to the local people, as per the applicable law. The project proponent shall set up a skill development center/provide skill development training to village people.	Being Complied	The employment of local people is being carried out as per the applicable law. Various developmental activities e.g. promoting education, skill development trainings etc. in nearby Gram Panchayats under CSR are being finalized by CSR team of Paradip Refinery in consultation with



IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

S.N.	CONDITIONS:	STATUS	REMARKS
			District Administration. Skill development in association with NSDC & CIPET is being carried out periodically. Skill development Institute has been set up at Bhubaneswar with an aim to provide opportunities to the unemployed and underprivileged youth of Odisha and to provide skilled manpower to the industry.
xix)	A separate Environmental Management Cell (having qualified person with Environmental Science/ Environmental Engineering/ specialization in the project area) equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	Being complied	Environment Management Cell headed by a HOD exists in the Refinery to take care of all the environmental issues
xx)	The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Firefighting system shall be as per the norms.	Being complied	Being Complied for existing Refinery complex and shall be complied with in PX-PTA unit as well.
xxi)	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. In case of the treated effluent to be utilized for irrigation/gardening, real time monitoring system shall be installed at the ETP outlet.	Agreed for Compliance	Noted for compliance. Continuous online (24x7) monitoring system for stack emissions is already in place at Paradip Refinery and same shall be complied for PX-PTA unit stacks. Real time monitoring system shall be installed at the ETP outlet.
xxii)	PP to set up occupational health Centre for surveillance of the worker's health within and outside the plant on a regular basis. The health data shall be used in deploying the duties of the workers. All workers & employees shall be provided with required safety kits/mask for personal protection.	Being Complied	Occupational health Centre is already available for the Refinery. Same facility shall be used for PX-PTA unit as well. OHC report for Refinery employees is enclosed as Annexure- 10 .
xxiii)	The National Emission Standards for Petrochemical (Basic & Intermediates) issued by the Ministry vide G.S.R. 820 (E) dated 9th November 2012 as amended time to time shall be followed.	Agreed for Compliance	Noted for compliance.



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Subject: EC CRZ - Compliance Status Report

S.N.	CONDITIONS:	STATUS	REMARKS
xxiv)	Recommendations of mitigation measures from possible accident shall be implemented based on Risk Assessment studies conducted for worst case scenarios using latest techniques.	Agreed for Compliance	Noted for compliance.
xxv)	The project proponent shall develop R&D facilities to develop their own technologies for propylene and polypropylene processing.	Complied	IOCL has a fully established R&D facility located at Faridabad, Haryana.
B	GENERAL CONDITIONS		
(i)	No further expansion or modifications in the plant, other than mentioned in the EIA Notification, 2006 and its amendments, shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change/SEIAA, as applicable. 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/SEIAA, as applicable, to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Agreed for Compliance	Noted for compliance.
(ii)	The energy source for lighting purpose shall be preferably LED based, or advanced having preference in energy conservation and environment betterment.	Agreed for Compliance	Noted for compliance.
(iii)	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 the Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	Agreed for Compliance	Noted for compliance.
(iv)	The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CER activities shall be undertaken by involving local villages and administration and shall be implemented. The company shall undertake eco developmental measures including community welfare measures in the project area for the overall improvement of the environment	Being complied	IOCL PDR is implementing projects under CSR and CER extensively for improving the socio-economic conditions of the surrounding area.



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Subject: EC CRZ - Compliance Status Report

S.N.	CONDITIONS:	STATUS	REMARKS
(v)	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.	Being complied	Paradip Refinery has installed all the pollution control units at an approximate cost of 10% of the capital expenditure of Refinery. In FY 2025-26, total expenditure on account of environment related job was approximately of Rs. 47.93 Cr. Yearly budget provision is made for env. related activities.
(vi)	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.	Complied	Complied
(vii)	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.	Complied	Six monthly compliance report is being sent to MoEF and zonal office of SPCB. Last report was submitted vide letter no. PDR/HSE/HC/MOEFCC/2025-26/001 dated 29.11.2025 for Apr'25 to Sep25. Environmental Clearance conditions compliance status report is also available in the website of the company
(viii)	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 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.	Being Complied	Paradip Refinery submitted the Environment Statement for FY 2025-26 on 23.05.2026 as per target. EC conditions compliance is available in iocl website. H-1 EC condition compliance has also been submitted on 29.11.2025 to RO as per time schedule.



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Subject: EC CRZ - Compliance Status Report

S.N.	CONDITIONS:	STATUS	REMARKS
(ix)	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 and at https://parivesh.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.	Complied	Advertisement placed in two newspapers (One is "The Samaja" and other is "The Times of India")  
(x)	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.	Agreed for Compliance	Noted for compliance
(xi)	This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.	Agreed for Compliance	Noted
23	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 condition is not found satisfactory.	Agreed for Compliance	Noted
24	Concealing factual data or submission of false/ fabricated data and failure to comply with any conditions mentioned above may result in withdrawal of this clearance and attract action under the provision of Environment (Protection) Act , 1986.	Agreed for Compliance	Noted



Annexure-2

Stack Emission Report



Report. No: Envlab/25-26/R-14245

Date: 03.11.2025

STATIONARY EMISSION MONITORING REPORT FOR OCTOBER-2025

1. Name of the Industry : M/s. INDIAN OIL CORPORATION LIMITED
2. Sample Collected by : VCSPL Representative
3. Date of Analysis : 01.10.2025 TO 29.10.2025

Parameter				SO ₂	NO _x	PM	CO
UOM				mg/Nm ³	mg/Nm ³	mg/Nm ³	mg/Nm ³
Method				IS 11255 [P-2]	IS 11255 [P-7]	IS 11255 [P-1]	IS 11255 [P-3]
1	CPP (UB2) STACK	1-Oct-25	9:40	45.6	121.4	4.88	12.5
2	CPP (UB4) STACK	1-Oct-25	14:10	49.7	121.6	4.65	10
3	HRSG-2 STACK	3-Oct-25	9:30	46.2	111.4	4.79	22.5
4	CPP (UB3) STACK	3-Oct-25	15:10	47.2	85.6	4.8	7.5
5	DCU Heater-1 Stack	4-Oct-25	9:40	45.7	46.2	3.24	6.25
6	DCU Heater-2 Stack	4-Oct-25	14:10	48.6	57.5	4.27	3.75
7	VGOHT MHC-2 Stack	6-Oct-25	14:10	40.2	41.7	3.35	1.25
8	VGOHT MHC-1 Stack	7-Oct-25	14:10	39.7	35.8	3.7	1.25
9	AVU CDU Stack	8-Oct-25	10:20	41.2	70.6	5.41	52.5
10	AVU VDU Stack	8-Oct-25	14:30	41.7	60.2	5.42	67.5
11	FCC RR Stack	9-Oct-25	9:50	45.7	60.4	21.43	251.25
12	FCC Heater Stack	9-Oct-25	14:40	47.2	120.4	4.4	18.75
13	SARU Process Air Heater Stack	10-Oct-25	9:40	45.7	42.1	5.03	2.5
14	DHDT Stack	11-Oct-25	9:20	47.6	41.8	4.76	8.75
15	SRU/TGTU Stack	11-Oct-25	14:10	1588.4	216.5	11.04	95
16	KHDS Unit Stack	13-Oct-25	9:30	49.2	19.8	4.67	3.75
17	HRSG-3 STACK	14-Oct-25	14:10	42.7	139.5	5.75	40
18	CPP (UB3) STACK	17-Oct-25	10:20	46.7	87.5	4.27	7.5
19	CPP (UB4) STACK	17-Oct-25	14:30	48.7	120.3	4.4	6.25
20	HRSG-2 STACK	18-Oct-25	14:00	47.3	110.5	4.93	20
21	NHDT Stack	20-Oct-25	9:30	46.4	58.7	4.77	10
22	HRSG-3 STACK	22-Oct-25	9:30	41.9	123.2	4.85	72.5
23	CCRU-P Stack	22-Oct-25	14:10	10	200.5	4.37	12.5
24	AVU CDU Stack	23-Oct-25	10:00	44.6	71.5	8.39	67.5
25	AVU VDU Stack	23-Oct-25	14:20	49.2	58.9	7.99	76.25
26	FCC RR Stack	24-Oct-25	9:30	45.9	65.4	20.96	281.25
27	FCC Heater Stack	24-Oct-25	14:00	49.2	118.4	4.48	32.5
28	VGOHT MHC-2 Stack	25-Oct-25	14:00	42.2	45.7	4.27	1.25
29	VGOHT MHC-1 Stack	25-Oct-25	9:30	37.7	34.6	3.62	1.25
30	SARU Process Air Heater Stack	27-Oct-25	9:10	45.9	43.1	4.29	1.25
31	SRU/TGTU Stack	28-Oct-25	9:40	1578.7	214.9	7.95	193.75
32	DHDT Stack	29-Oct-25	9:50	45.6	44.8	3.95	5
33	KHDS Unit Stack	29-Oct-25	14:00	49.2	19.8	4.08	1.25

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Report. No: Envlab/25-26/R-15836

Date: 02.12.2025

STATIONARY EMISSION MONITORING REPORT FOR NOVEMBER-2025

1. Name of the Industry : M/s. INDIAN OIL CORPORATION LIMITED
2. Sample Collected by : VCSPL Representative
3. Date of Analysis : 01.11.2025 TO 28.11.2025

Parameter				SO ₂	NO _x	PM	CO
UOM				mg/Nm ³	mg/Nm ³	mg/Nm ³	mg/Nm ³
Method				IS 11255 [P-2]	IS 11255 [P-7]	IS 11255 [P-1]	IS 11255 [P-3]
1	DCU Heater-1 Stack	1-Nov-25	9:30	46.50	52.3	3.90	3.25
2	DCU Heater-2 Stack	1-Nov-25	14:00	48.40	48.5	4.14	2.50
3	CPP (UB3) STACK	3-Nov-25	9:40	8.33	49.6	4.33	6.25
4	CPP (UB4) STACK	3-Nov-25	14:30	48.50	91.8	4.16	6.25
5	HRS-3 STACK	4-Nov-25	9:20	45.30	94.3	4.31	47.50
6	HRS-2 STACK	4-Nov-25	14:10	43.40	105.2	4.12	22.50
7	FCC RR Stack	5-Nov-25	9:40	54.90	48.5	19.94	237.50
8	FCC Heater Stack	5-Nov-25	14:20	46.80	124.5	4.45	52.50
9	CPP (UB1) STACK	6-Nov-25	9:40	49.70	85.3	4.20	10.00
10	AVU VDU Stack	6-Nov-25	14:20	46.50	69.5	4.91	31.25
11	VGOHT MHC-1 Stack	7-Nov-25	9:30	38.60	33.5	2.99	6.25
12	VGOHT MHC-2 Stack	7-Nov-25	14:10	46.20	49.3	2.74	3.75
13	AVU CDU Stack	8-Nov-25	9:40	49.50	56.8	4.79	27.50
14	CCRU-P Stack	10-Nov-25	9:30	41.50	56.1	3.04	17.50
15	NHDT Stack	10-Nov-25	14:00	45.50	42.9	4.89	12.50
16	SARU Process Air Heater Stack	11-Nov-25	9:20	41.30	65.5	5.00	2.50
17	DHDT Stack	12-Nov-25	9:20	43.50	41.6	0.84	10.00
18	CPP (UB2) STACK	12-Nov-25	14:20	46.30	119.3	4.30	18.75
19	SRU/TGTU Stack	13-Nov-25	9:40	1582.30	211.1	12.61	86.25
20	KHDS Unit Stack	13-Nov-25	14:30	45.30	45.3	4.80	2.50
21	HRS-3 STACK	20-Nov-25	9:10	44.30	241.5	4.81	77.50
22	AVU VDU Stack	20-Nov-25	14:30	45.30	61.3	4.70	56.25
23	AVU CDU Stack	21-Nov-25	14:20	44.60	57.3	4.75	43.75
24	DCU Heater-1 Stack	22-Nov-25	9:20	47.80	45.2	4.17	5.00
25	DCU Heater-2 Stack	22-Nov-25	14:00	43.50	49.5	4.47	2.50
26	VGOHT MHC-1 Stack	24-Nov-25	9:40	37.80	35.2	3.81	3.75
27	VGOHT MHC-2 Stack	24-Nov-25	14:20	43.30	50.5	4.13	2.50
28	CCRU-P Stack	26-Nov-25	14:10	42.30	43.9	4.74	18.75
29	NHDT Stack	26-Nov-25	9:30	46.50	41.8	3.82	7.50
30	SARU Process Air Heater Stack	25-Nov-25	14:20	48.50	63.1	4.47	7.50
31	DHDT Stack	27-Nov-25	9:30	45.30	43.5	4.70	15.00
32	SRU/TGTU Stack	27-Nov-25	14:20	1589.50	231.5	6.85	88.75
33	KHDS Unit Stack	28-Nov-25	9:30	47.80	48.5	5.07	5.00

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(Committed For Better Environment)

Ref No: Envlab/25-26/R- 19048

Date:03.01.2026

STATIONARY EMISSION MONITORING REPORT FOR DECEMBER-2026

1. Name of the Industry : M/s. INDIAN OIL CORPORATION LIMITED
2. Sample Collected by : VCSPL Representative
3. Date of Analysis : 01.12.2025 TO 31.12.2025

Parameter				SO ₂	NO _x	PM	CO
UOM				mg/Nm ³	mg/Nm ³	mg/Nm ³	mg/Nm ³
Method				IS 11255 [P-2]	IS 11255 [P-7]	IS 11255 [P-1]	IS 11255 [P-3]
1	AVU CDU Stack	01-Dec-25	9:50	48.50	62.5	4.71	31.25
2	AVU VDU Stack	01-Dec-25	14:20	45.30	60.3	4.43	40.00
3	CPP (UB3) STACK	03-Dec-25	9:40	46.50	88.3	4.46	40.00
4	CPP (UB2) STACK	03-Dec-25	14:10	49.50	124.5	4.92	27.50
5	DCU Heater-1 Stack	02-Dec-25	9:30	43.50	48.6	2.66	6.25
6	DCU Heater-2 Stack	02-Dec-25	14:10	43.20	45.3	3.30	3.75
7	CPP (UB1) STACK	04-Dec-25	9:50	48.70	86.5	4.62	31.25
8	HRS-1 STACK	04-Dec-25	14:20	43.30	80.2	4.18	40.00
9	HRS-2 STACK	05-Dec-25	9:20	44.20	108.5	4.89	31.25
10	VGOHT MHC-1 Stack	05-Dec-25	14:20	39.30	32.4	3.37	2.50
11	VGOHT MHC-2 Stack	06-Dec-25	9:20	44.50	54.5	3.02	2.50
12	FCC Heater Stack	06-Dec-25	14:10	48.50	123.1	4.50	51.25
13	FCC RR Stack	08-Dec-25	9:30	52.30	60.2	29.19	236.25
14	CCRU-P Stack	09-Dec-25	9:20	40.20	41.3	4.50	25.00
15	NHDT Stack	09-Dec-25	14:10	45.40	40.2	3.47	10.00
16	SARU Decomposition Furnace Stack	10-Dec-25	9:20	45.00	40	4.65	11.25
17	SARU Process Air Heater Stack	10-Dec-25	14:30	43.20	60.2	3.76	8.75
18	DHDT Stack	11-Dec-25	10:00	44.20	42.1	4.88	12.50
19	KHDS Unit Stack	12-Dec-25	9:30	45.50	47.5	4.77	6.25
20	CPP (UB1) STACK	16-Dec-25	9:30	46.50	84.2	4.62	22.50
21	CPP (UB2) STACK	16-Dec-25	14:30	48.10	121.2	4.49	17.50
22	CPP (UB3) STACK	17-Dec-25	9:20	47.10	81.5	4.80	25.00
23	HRS-2 STACK	17-Dec-25	14:10	48.10	107.9	4.22	35.00
24	HRS-3 STACK	18-Dec-25	9:50	46.50	138.2	4.48	60.00
25	DCU Heater-1 Stack	18-Dec-25	14:10	43.20	47.5	4.43	5.00
26	DCU Heater-2 Stack	19-Dec-25	9:30	48.30	41.2	4.38	2.50
27	AVU VDU Stack	19-Dec-25	14:10	49.30	122.3	4.91	95.00
28	AVU CDU Stack	20-Dec-25	9:50	43.20	56.2	4.88	23.75
29	VGOHT MHC-1 Stack	20-Dec-25	14:00	37.20	30.1	3.41	1.25
30	VGOHT MHC-2 Stack	22-Dec-25	9:30	45.10	53.3	4.49	2.50
31	FCC RR Stack	23-Dec-25	9:20	51.10	58.9	29.30	233.75
32	FCC Heater Stack	23-Dec-25	14:20	43.50	123.1	4.89	35.00
33	SARU Decomposition Furnace Stack	24-Dec-25	10:00	44.20	40.3	4.08	8.75
34	SARU Process Air Heater Stack	24-Dec-25	14:20	46.30	62.4	4.95	6.25
35	CCRU-P Stack	26-Dec-25	9:30	41.30	43.5	4.87	15.00
36	NHDT Stack	26-Dec-25	14:30	40.90	38.3	4.31	10.00
37	KHDS Unit Stack	27-Dec-25	14:00	47.50	48.7	2.95	3.75
38	DHDT Stack	30-Dec-25	9:30	45.30	40.2	3.59	15.00
39	SRU New Stack	30-Dec-25	14:30	1460.00	189.5	11.08	27.50

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Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Ref No: Envlab/25-26/R-15486

Date:02.02.2026

STATIONARY EMISSION MONITORING REPORT FOR JANUARY-2026

1. Name of the Industry : M/s. INDIAN OIL CORPORATION LIMITED
2. Sample Collected by : VCSPL Representative
3. Date of Analysis : 01.01.2026 TO 30.01.2026

Parameter				SO ₂	NO _x	PM	CO
UOM				mg/Nm ³	mg/Nm ³	mg/Nm ³	mg/Nm ³
Method				IS 11255 [P-2]	IS 11255 [P-7]	IS 11255 [P-1]	IS 11255 [P-3]
1	CPP (UB1) STACK	01-Jan-26	09:40	46.50	84.1	4.38	25.00
2	CPP (UB2) STACK	01-Jan-26	14:20	47.20	119.3	4.30	20.00
3	CPP (UB3) STACK	02-Jan-26	09:30	46.20	80.2	4.54	20.00
4	HRSG-2 STACK	02-Jan-26	14:10	41.30	105.4	4.45	27.50
5	HRSG-3 STACK	03-Jan-26	09:20	47.20	134.9	4.64	65.00
6	DCU Heater-1 Stack	03-Jan-26	14:00	48.30	46.3	2.50	6.25
7	DCU Heater-2 Stack	05-Jan-26	10:00	46.20	40.2	3.33	3.75
8	FCC Heater Stack	05-Jan-26	14:40	48.20	121.5	4.73	40.00
9	FCC RR Stack	06-Jan-26	09:30	53.20	59.7	29.52	271.25
10	AVU CDU Stack	06-Jan-26	14:20	44.80	57.3	4.41	27.50
11	AVU VDU Stack	07-Jan-26	09:20	45.50	62.1	4.90	56.25
12	VGOHT MHC-1 Stack	07-Jan-26	14:20	38.50	32.3	3.90	2.50
13	VGOHT MHC-2 Stack	08-Jan-26	09:20	47.30	54.5	4.09	2.50
14	NHDT Stack	08-Jan-26	14:30	41.50	39.8	3.87	12.50
15	CCRU-P Stack	09-Jan-26	09:00	42.80	45.6	4.55	22.50
16	DHDT Stack	12-Jan-26	09:20	46.50	42.8	4.59	10.00
17	KHDS Unit Stack	10-Jan-26	09:20	48.30	49.5	1.58	2.50
18	SARU Decomposition Furnace Stack	13-Jan-26	09:40	45.30	41.5	4.91	10.00
19	SARU Process Air Heater Stack	13-Jan-26	14:10	46.20	61.2	4.22	7.50
20	CPP (UB1) STACK	17-Jan-26	10:00	47.60	85.2	4.00	15.00
21	CPP (UB2) STACK	17-Jan-26	10:00	48.30	82.2	3.78	10.00
22	AVU VDU Stack	19-Jan-26	10:10	52.10	61.8	4.67	40.00
23	AVU CDU Stack	19-Jan-26	14:00	43.20	52.5	5.30	20.00
24	HRSG-1 STACK	20-Jan-26	09:40	45.20	79.3	2.80	27.50
25	HRSG-2 STACK	20-Jan-26	14:10	47.50	108.5	4.65	37.50
26	DCU Heater-1 Stack	21-Jan-26	09:50	42.20	47.8	3.46	5.00
27	DCU Heater-2 Stack	21-Jan-26	14:20	47.30	42.5	3.87	2.50
28	CPP (UB3) STACK	16-Jan-26	10:00	47.30	78.2	4.78	15.00
29	CCRU-P Stack	22-Jan-26	09:40	43.50	47.3	3.02	18.75
30	NHDT Stack	22-Jan-26	14:10	41.20	40.3	3.74	10.00
31	FCC RR Stack	23-Jan-26	09:40	54.60	61.2	33.11	262.50
32	FCC Heater Stack	23-Jan-26	14:20	48.60	120.5	4.81	35.00
33	VGOHT MHC-1 Stack	24-Jan-26	09:20	39.20	33.5	3.83	2.50
34	VGOHT MHC-2 Stack	24-Jan-26	14:00	46.80	53.2	4.05	2.50
35	SARU Process Air Heater Stack	27-Jan-26	09:30	47.30	62.3	2.31	6.25
36	SARU Decomposition Furnace Stack	27-Jan-26	14:10	46.50	42.3	4.28	12.50
37	DHDT Stack	28-Jan-26	09:30	47.20	43.1	4.44	15.00
38	KHDS Unit Stack	28-Jan-26	14:10	43.60	51.2	3.15	2.50
39	SRU New Stack	30-Jan-26	09:20	185.00	181.3	9.03	20.00

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Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Ref No: Envlab/25-26/R-15486

Date: 02.03.2026

STATIONARY EMISSION MONITORING REPORT FOR FEBRUARY-2026

1. Name of the Industry : M/s. INDIAN OIL CORPORATION LIMITED
2. Sample Collected by : VCSPL Representative
3. Date of Analysis : 02.02.2026 TO 28.02.2026

Parameter				SO ₂	NO _x	PM	CO
UOM				mg/Nm ³	mg/Nm ³	mg/Nm ³	mg/Nm ³
Method				IS 11255 [P-2]	IS 11255 [P-7]	IS 11255 [P-1]	IS 11255 [P-3]
1	FCC RR Stack	02-Feb-26	09:40	55.60	63.3	43.80	231.25
2	FCC Heater Stack	02-Feb-26	14:00	48.20	122.1	4.73	25.00
3	CPP (UB1) STACK	03-Feb-26	09:50	48.60	84.1	4.39	12.50
4	CPP (UB2) STACK	03-Feb-26	14:20	46.20	81.1	4.13	15.00
5	CPP (UB3) STACK	04-Feb-26	09:20	48.50	86.2	4.33	18.75
6	HRSG-2 STACK	06-Feb-26	09:30	42.20	105.2	4.74	43.75
7	HRSG-1 STACK	06-Feb-26	14:10	37.30	81.2	4.57	31.25
8	AVU CDU Stack	07-Feb-26	09:30	54.80	53.7	4.75	18.75
9	AVU VDU Stack	07-Feb-26	14:00	44.30	62.6	9.48	35.00
10	DCU Heater-1 Stack	09-Feb-26	09:50	48.50	46.2	4.21	6.25
11	DCU Heater-2 Stack	09-Feb-26	14:10	49.20	43.5	4.15	2.50
12	VGOHT MHC-1 Stack	10-Feb-26	09:30	40.20	34.6	4.66	2.50
13	VGOHT MHC-2 Stack	10-Feb-26	14:30	47.50	54.8	2.57	2.50
14	SARU Process Air Heater Stack	11-Feb-26	09:40	48.20	63.5	4.21	7.50
15	SARU Decomposition Furnace Stack	11-Feb-26	14:20	47.80	43.7	4.24	12.50
16	CCRU-P Stack	12-Feb-26	09:30	42.80	46.5	4.72	27.50
17	NHDT Stack	12-Feb-26	14:20	40.40	39.7	4.44	12.50
18	KHDS Unit Stack	13-Feb-26	09:30	41.60	51.2	2.50	2.50
19	SRU New Stack	13-Feb-26	14:20	85.00	781.3	15.00	25.00
20	DHDT Stack	14-Feb-26	09:20	46.50	42.8	4.50	12.50
21	CPP (UB1) STACK	16-Feb-26	09:30	47.20	82.5	4.11	7.50
22	CPP (UB2) STACK	16-Feb-26	14:00	45.30	79.8	4.57	11.25
23	CPP (UB3) STACK	17-Feb-26	09:30	45.70	79.5	4.58	13.75
24	HRSG-2 STACK	18-Feb-26	09:30	43.00	103.5	4.83	40.00
25	HRSG-1 STACK	18-Feb-26	14:00	46.70	79.9	4.61	25.00
26	AVU CDU Stack	19-Feb-26	10:10	48.30	55.1	6.59	15.00
27	AVU VDU Stack	19-Feb-26	14:10	51.70	60.8	9.67	31.25
28	FCC RR Stack	20-Feb-26	09:10	54.72	62.41	40.80	250.00
29	FCC Heater Stack	20-Feb-26	12:10	44.06	119.98	4.22	18.75
30	DCU Heater-1 Stack	21-Feb-26	10:20	47.84	46.88	3.57	5.00
31	DCU Heater-2 Stack	21-Feb-26	14:00	40.01	42.97	4.03	2.50
32	NHDT Stack	23-Feb-26	09:30	41.07	38.96	3.57	10.00
33	CCRU-P Stack	23-Feb-26	14:10	41.98	47.31	4.56	7.50
34	VGOHT MHC-1 Stack	24-Feb-26	09:40	38.56	34.01	4.14	2.50
35	VGOHT MHC-2 Stack	24-Feb-26	14:10	47.41	52.18	3.66	3.75
36	HRSG-3 STACK	25-Feb-26	09:30	41.70	139.6	4.78	80.00
37	DHDT Stack	25-Feb-26	14:00	47.80	43.5	4.54	10.00
38	SRU New Stack	26-Feb-26	09:40	48.90	789.4	14.60	22.50

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(Committed For Better Environment)

Ref No: Envlab/26-27/R-01327

Date:04.04.2026

STATIONARY EMISSION MONITORING REPORT FOR MARCH-2026

1. Name of the Industry : M/s. INDIAN OIL CORPORATION LIMITED
2. Sample Collected by : VCSPL Representative
3. Date of Analysis : 02.03.2026 TO 28.03.2026

Parameter				SO ₂	NO _x	PM	CO
UOM				mg/Nm ³	mg/Nm ³	mg/Nm ³	mg/Nm ³
Method				IS 11255 [P-2]	IS 11255 [P-7]	IS 11255 [P-1]	IS 11255 [P-3]
1	HRSG-3 STACK	02-Mar-26	10:00	49.7	140.8	4.86	72.50
2	HRSG-1 STACK	02-Mar-26	14:10	47.4	80.2	4.9	31.25
3	CPP (UB3) STACK	03-Mar-26	09:10	47.2	83.6	4.31	27.50
4	CPP (UB4) STACK	03-Mar-26	11:30	47.8	84.1	2.34	23.75
5	CPP (UB1) STACK	05-Mar-26	09:30	48.6	84.1	4.8	18.75
6	FCC Heater Stack	05-Mar-26	14:20	46.03	120.68	4.79	22.50
7	FCC RR Stack	06-Mar-26	09:20	57.21	57.21	39.6	241.25
8	AVU VDU Stack	06-Mar-26	14:20	44.7	62.1	5.45	40.00
9	AVU CDU Stack	07-Mar-26	09:40	49.2	56.3	6.55	20.00
10	DCU Heater-1 Stack	07-Mar-26	14:10	48.63	47.23	4.62	5.00
11	DCU Heater-2 Stack	09-Mar-26	09:50	43.2	43.81	3.07	3.75
12	NHDT Stack	09-Mar-26	14:10	42.21	39.63	3.46	15.00
13	CCRU-P Stack	10-Mar-26	09:10	42.89	48.38	4.85	12.50
14	VGOHT MHC-1 Stack	10-Mar-26	14:10	39.45	35.06	4.22	2.50
15	VGOHT MHC-2 Stack	11-Mar-26	09:20	48.32	52.39	2.82	3.75
16	KHDS Unit Stack	11-Mar-26	14:30	45.7	51.8	3.12	2.50
17	SARU Process Air Heater Stack	12-Mar-26	14:20	48.4	63.7	3.58	15.00
18	SRU/TGTU Stack	13-Mar-26	09:30	1179	64.2	15.13	88.75
19	DHDT Stack	13-Mar-26	14:30	48.2	44.1	3.52	15.00
20	SRU New Stack	14-Mar-26	09:40	1287	181.3	12.29	31.25
21	SRU New Stack	16-Mar-26	10:00	1189	182.4	13.13	18.75
22	AVU CDU Stack	18-Mar-26	10:30	49.2	57.8	5.59	12.50
23	AVU VDU Stack	19-Mar-26	09:10	46.7	63.1	8.37	27.50
24	CPP (UB3) STACK	19-Mar-26	14:50	48.3	82.9	4.3	31.25
25	CPP (UB4) STACK	19-Mar-26	16:50	48.6	85.3	4.56	37.50
26	HRSG-2 STACK	20-Mar-26	14:00	44.2	104.3	4.9	35.00
27	HRSG-3 STACK	20-Mar-26	09:00	45.6	165.6	4.22	56.25
28	HRSG-1 STACK	21-Mar-26	09:30	47.5	80.2	4.8	25.00
29	FCC Heater Stack	21-Mar-26	14:00	49.4	121.71	4.63	18.75
30	FCC RR Stack	23-Mar-26	09:30	58.26	64.35	39.83	232.50
31	DCU Heater-1 Stack	23-Mar-26	14:00	49.63	48.23	3.33	5.00
32	DCU Heater-2 Stack	24-Mar-26	09:40	46.1	44.21	4.64	2.50
33	SARU Process Air Heater Stack	24-Mar-26	15:30	49.6	64.2	3.38	12.50
34	VGOHT MHC-1 Stack	25-Mar-26	14:20	40.12	36.02	2.45	2.50
35	VGOHT MHC-2 Stack	26-Mar-26	09:40	49.12	53.16	4.47	2.50
36	NHDT Stack	26-Mar-26	14:00	42.63	39.89	3.21	22.50
37	CCRU-P Stack	27-Mar-26	09:30	43.26	49.32	4.4	10.00
38	DHDT Stack	27-Mar-26	14:10	48.4	44.3	3.64	12.50
39	KHDS Unit Stack	28-Mar-26	09:30	46.4	52.6	4.78	1.25
40	HGU New Stack	28-Mar-26	14:10	9.97	46.2	4.11	68.75

TERMS AND CONDITION: -

1. The Test result is relevant only to the item tested.
2. This report shall not be reproduced in full or part without written approval of Visiontek consultancy services. (P) Ltd.
3. The laboratory is not responsible for the authenticity of photocopied test report.
4. The test item will not be retained for more than 15 days from the date of issue of test report except in case as required by applicable regulations.
5. The laboratory's responsibility under this report is limited to; proven willful negligence





Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)



Annexure-3

NHMC & Benzene Monitoring Report



INDIAN OIL CORPORATION LIMITED
PARADIP REFINERY
QUALITY CONTROL LABORATORY
VOC/FUGITIVE EMISSION SUMMARY: 2025-26 Report

IndianOil
Source of sample: Inside the Plant

Reason for testing: VOC/Fugitive Emission (Non Methane Hydrocarbons-NMHC) study

Sample drawn by: QC Lab/ HSE representative

Test report No: PDR/QC/FE-NMHC/2025-26/Q3-Q4

Date of sample

Dt: 20.12.2025

Dt: 15.03.2026

Test Method

NMHC (ppm)

NMHC (ppm)

UOP 539

<100

<100

Dr. RC Sahu

QCM

IOCL, Paradip Refinery

Annexure-4

VOC Monitoring Report

 INDIAN OIL CORPORATION LIMITED PARADIP REFINERY QUALITY CONTROL LABORATORY					IndianOil VOC (FUGITIVE EMISSION) SUMMARY: 2025-26, Test Report				
Source of sample: Inside the Plant					Date: 15.01.2026				
Reason for testing: VOC (Fugitive Emission) Study									
Sample drawn by: QC Lab Representative									
Test report No: PDR/QC/FE/2025-26/03									
Sl. No.	UNIT	Number of equipments taken for measurement	Date of Measurement	Test Results of VOC (kg/hr)					
1	AVU	141	10.12.2025 – 15.12.2025	0.02045					
2	CCR	29	24.12.2025	0.00683					
3	NHT	48	26.12.2025	0.01811					
4	DHDT	39	09.12.2025 & 10.12.2025	0.03622					
5	VGOHDT	90	17.12.2025 & 24.12.2025	0.02354					
6	DCU	36	23.12.2025	0.01710					
7	SARU	20	27.12.2025	0.00000					
8	ALK & BUTAMER	32	27.12.2025	0.00393					
9	KTU	17	13.12.2025	0.01231					
10	FCC - INDMAX	27	12.12.2025	0.01037					
11	KHDS	12	26.12.2025	0.00512					
TOTAL		491	09.12.2025 - 27.12.2025	0.15398					
					 Dr. RC Sahu QCM Indian Oil Corporation Ltd Paradip Refinery				

 INDIAN OIL CORPORATION LIMITED PARADIP REFINERY QUALITY CONTROL LABORATORY VOC (FUGITIVE EMISSION) SUMMARY: 2025-26, Test Report				
Source of sample: Inside the Plant				
Reason for testing: VOC (Fugitive Emission) Study				
Sample drawn by: QC Lab Representative				
Test report No: PDR/QC/FE/2025-26/04				
Sl. No.	UNIT	Number of equipments taken for measurement	Date of Measurement	Test Results of VOC (kg/hr)
1	AVU	141	06.03.2026 – 11.03.2026	0.03439
2	CCR	29	27.03.2026	0.00757
3	NHT	48	28.03.2026	0.01855
4	DHDT	39	10.03.2026 & 11.03.2026	0.00911
5	VGOHDT	90	13.03.2026 & 14.03.2026	0.01559
6	DCU	36	24.03.2026	0.02438
7	SARU	20	31.03.2026	0.00000
8	ALK & BUTAMER	32	03.04.2026	0.00394
9	KTU	17	25.03.2026	0.01934
10	FCC - INDMAX	27	31.03.2026	0.01567
11	KHDS	12	25.03.2026	0.00928
TOTAL		491	06.03.2026 - 03.04.2026	0.15782
 Dr. RC Sahu QCM Indian Oil Corporation Ltd Paradip Refinery				

Annexure-5

Ambient Air Quality Report



INDIAN OIL CORPORATION LIMITED
PARADIP REFINERY
QUALITY CONTROL LABORATORY
AAQMS TEST REPORT OF MARCH-2026



IndianOil

Source of sample: AAQMS-1, 2, 3, 4, 5, 6 & 7 (All Ambient Air Monitoring Stations)

Date of Sample: 02, 05, 09, 12, 16, 19, 23, 26, 30.03.2026

Test report No: PDR/QC/AAQM/2025-2026/12

Date: 04.04.2026

S. No.	Parameter	UoM	Limit	AAQMS-1: Main Gate			AAQMS-2: IOTL Tech Bid			AAQMS-3: LT Flare			AAQMS-4: IOT Loading Area			AAQMS-5: ETP area			AAQMS-6: S-Fire Station/QCLab.			AAQMS-7: Incinerator		
				Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max
1	PM2.5	µg/m ³	60 Max	36.3	27.0	43.0	37.1	33.0	42.0	35.4	30.0	40.0	28.3	25.0	38.0	33.7	28.0	37.0	33.0	28.0	39.0	29.9	27.0	35.0
2	PM10	µg/m ³	100 Max	75.8	64.0	86.0	77.9	67.0	89.0	75.4	69.0	82.0	65.2	58.0	77.0	74.7	66.0	80.0	74.0	68.0	84.0	68.0	61.0	75.0
3	Ozone	µg/m ³	100 Max	30.8	27.8	33.4	29.6	27.1	35.8	29.0	27.2	30.9	29.3	25.9	34.0	31.7	28.5	35.4	28.2	24.1	31.6	29.2	25.7	32.7
4	Ammonia	µg/m ³	400 Max	29.1	26.4	31.1	31.2	27.0	35.4	29.4	24.7	34.5	31.7	28.8	38.6	31.9	28.2	35.9	28.0	24.7	32.3	29.7	26.3	36.0
5	NO _x	µg/m ³	80 Max	67.7	58.0	76.0	69.2	59.0	74.0	69.2	61.0	74.0	68.2	62.0	74.0	64.3	58.0	71.0	64.4	58.0	68.0	64.8	59.0	72.0
6	Benzene	µg/m ³	5 Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	BenzoPyrene	ng/m ³	1 Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	SO _x	µg/m ³	80 Max	37.0	29.0	44.0	36.4	28.0	41.0	36.7	31.0	41.0	38.6	30.0	44.0	37.0	33.0	42.0	34.9	28.0	40.0	34.6	25.0	41.0
9	Pb	µg/m ³	1 Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	As	ng/m ³	6 Max	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.4	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.2	0.1	0.2
11	Ni	ng/m ³	20 Max	7.9	5.8	10.0	8.1	7.0	9.8	8.0	7.0	9.4	6.2	5.4	6.5	7.0	6.5	7.3	7.5	6.7	8.1	6.8	5.9	8.8
12	CO	mg/m ³	2 Max																0.2	0.1	0.3			

Note: 1. Customer Information: Indian Oil Corporation Limited, Paradip Refinery, HSE Department.

2. Sample details: Sample collected by QC personnel and received as such.

3. The results relate only to the samples collected.

4. All tests/analyses performed at PDR Quality Control Laboratory as per applicable test methods, unless otherwise stated without any deviations to test method.

5. Customer confidential information shall be maintained as per customer agreement, if any.

6. This report shall not be produced except in full, without the written approval of Quality Control Laboratory, Paradip Refinery.

7. All test methods referred to in this certificate include a precision statement. The interpretation of results based on test method/ precision shall be used whenever applicable.

8. Laboratory Environmental Condition: 23±2 °C and 65 ± 10 %RH.

Dr. RC Sahu

Quality Control Manager

Indian Oil Corporation Ltd

Paradip Refinery



INDIAN OIL CORPORATION LIMITED

PARADIP REFINERY

QUALITY CONTROL LABORATORY

AAQMS TEST REPORT OF FEBRUARY-2026

IndianOil



Source of sample: AAQMS-1, 2, 3, 4, 5, 6 & 7 (All Ambient Air Monitoring Stations)

Date of Sample: 02, 05, 09, 12, 16, 19, 23, 26.02.2026

Test report No: PDR/QC/AAQM/2025-2026/11

Date: 06.03.2026

S. No.	Parameter	UoM	Limit	AAQMS-1: Gate			AAQMS-2: Tech Bid			AAQMS-3: Flare			AAQMS-4: Loading Area			AAQMS-5: area			ETP			AAQMS-6: S-Fire Station/QCLab.			AAQMS-7: Incinerator		
				Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max
1	PM2.5	µg/m ³	60 Max	39.6	36.0	45.0	41.8	34.0	48.0	42.9	30.0	48.0	34.8	28.0	48.0	39.5	35.0	46.0	36.6	33.0	40.0	36.6	33.0	40.0	34.9	31.0	39.0
2	PM10	µg/m ³	100 Max	89.9	77.0	100.0	90.4	72.0	99.0	91.3	72.0	99.0	76.4	65.0	100.0	86.3	71.0	96.0	82.1	75.0	89.0	82.1	75.0	89.0	77.0	68.0	83.0
3	Ozone	µg/m ³	100 Max	30.1	27.6	33.9	32.1	25.7	39.7	29.7	27.5	33.2	31.7	26.4	35.9	29.7	25.6	34.5	29.9	27.2	32.1	29.9	27.2	32.1	30.5	28.9	32.2
4	Ammonia	µg/m ³	400 Max	30.2	26.4	35.1	29.7	26.1	39.1	30.0	25.0	35.9	31.1	26.1	36.7	30.4	26.4	37.3	28.7	25.2	34.3	28.7	25.2	34.3	29.7	27.1	33.1
5	NO _x	µg/m ³	80 Max	72.7	65.0	75.0	70.4	65.0	74.0	71.1	64.0	75.0	69.5	64.0	75.0	69.8	67.0	72.0	66.6	62.0	70.0	66.6	62.0	70.0	67.1	63.0	71.0
6	Benzene	µg/m ³	5 Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	BenzoPyrene	ng/m ³	1 Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	SO _x	µg/m ³	80 Max	36.2	27.0	45.0	39.6	32.0	43.0	36.3	33.0	41.0	39.8	34.0	45.0	38.0	30.0	43.0	36.1	30.0	39.0	36.1	30.0	39.0	35.9	32.0	41.0
9	Pb	µg/m ³	1 Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	As	ng/m ³	6 Max	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.2	0.3	0.2	0.2	0.3	0.2	0.1	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.2	0.3
11	Ni	ng/m ³	20 Max	8.7	6.6	12.7	8.2	6.2	9.3	8.0	6.8	8.9	7.6	5.3	10.0	7.6	6.2	8.7	8.0	7.1	9.0	8.0	7.1	9.0	7.1	6.2	8.3
12	CO	mg/m ³	2 Max																0.2	0.1	0.3	0.2	0.1	0.3			

Note: 1. Customer Information: Indian Oil Corporation Limited, Paradip Refinery, HSE Department.

2. Sample details: Sample collected by QC personnel and received as such.

3. The results relate only to the samples collected.

4. All tests/analyses performed at PDR Quality Control Laboratory as per applicable test methods, unless otherwise stated without any deviations to test method.

5. Customer confidential information shall be maintained as per customer agreement, if any.

6. This report shall not be produced except in full, without the written approval of Quality Control Laboratory, Paradip Refinery.

7. All test methods referred to in this certificate include a precision statement. The interpretation of results based on test method/ precision shall be used whenever applicable.

8. Laboratory Environmental Condition: 23±2 °C and 65 ± 10 %RH.

Dr. RC Sahu

Quality Control Manager

Indian Oil Corporation Ltd

Paradip Refinery



INDIAN OIL CORPORATION LIMITED

PARADIP REFINERY

QUALITY CONTROL LABORATORY

AAQMS TEST REPORT OF JANUARY-2026

IndianOil

Source of sample: AAQMS-1, 2, 3, 4, 5, 6 & 7 (All Ambient Air Monitoring Stations)

Date of Sample: 01, 05, 08, 12, 15, 19, 22, 26, 29.01.2026

Test report No: PDR/QC/AAQM/2025-2026/10

Date: 04.02.2026

S. No.	Parameter	UoM	Limit	AAQMS-1: Gate			AAQMS-2: Tech Bld			AAQMS-3: Flare			AAQMS-4: Loading Area			AAQMS-5: area			AAQMS-6: S-Fire Station/QCLab.			AAQMS-7: Incinerator		
				Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max
1	PM _{2.5}	µg/m ³	60 Max	42.2	35.0	49.0	45.7	40.0	48.0	43.1	38.0	48.0	33.1	28.0	39.0	40.6	31.0	46.0	40.7	33.0	45.0	37.0	35.0	39.0
2	PM ₁₀	µg/m ³	100 Max	91.2	81.0	100.0	95.3	85.0	100.0	88.6	71.0	98.0	71.6	65.0	83.0	84.8	72.0	98.0	88.3	76.0	98.0	83.5	83.0	84.0
3	Ozone	µg/m ³	100 Max	30.3	25.5	33.9	30.3	25.4	36.9	29.0	25.4	34.8	28.4	25.2	32.6	29.7	25.3	34.5	28.5	25.8	30.3	32.8	32.5	33.1
4	Ammonia	µg/m ³	400 Max	29.7	25.9	35.1	33.9	29.0	41.8	30.9	26.4	36.0	29.8	23.0	36.6	32.0	24.6	39.9	30.5	26.3	34.5	30.7	29.8	31.6
5	NO _x	µg/m ³	80 Max	68.3	66.0	72.0	71.8	64.0	76.0	69.2	62.0	76.0	69.2	65.0	73.0	67.8	63.0	72.0	69.0	65.0	72.0	68.5	64.0	73.0
6	Benzene	µg/m ³	5 Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	BenzofPyrene	ng/m ³	1 Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	SO _x	µg/m ³	80 Max	36.4	29.0	45.0	37.6	32.0	42.0	37.2	32.0	43.0	38.9	31.0	44.0	33.3	28.0	38.0	35.8	30.0	42.0	32.0	31.0	33.0
9	Pb	µg/m ³	1 Max	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	As	ng/m ³	6 Max	0.2	0.2	0.3	0.3	0.2	0.4	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.2	0.4	0.2	0.2	0.3	0.3	0.2	0.3
11	Ni	ng/m ³	20 Max	10.3	7.4	12.7	10.3	9.0	12.5	9.8	6.1	12.4	7.4	6.4	8.4	8.7	6.5	12.2	9.6	7.4	11.6	8.4	7.3	9.4
12	CO	mg/m ³	2 Max																0.2	0.1	0.3			

Note: 1. Customer Information: Indian Oil Corporation Limited, Paradip Refinery, HSE Department.

2. Sample details: Sample collected by QC personnel and received as such.

3. The results relate only to the samples collected.

4. All tests/analyses performed at PDR Quality Control Laboratory as per applicable test methods, unless otherwise stated without any deviations to test method.

5. Customer confidential information shall be maintained as per customer agreement, if any.

6. This report shall not be produced except in full, without the written approval of Quality Control Laboratory, Paradip Refinery.

7. All test methods referred to in this certificate include a precision statement. The interpretation of results based on test method/ precision shall be used whenever applicable.

8. Laboratory Environmental Condition: 23±2 °C and 65 ± 10 %RH.

Dr. RC Sahu

Quality Control Manager

Indian Oil Corporation Ltd

Paradip Refinery



INDIAN OIL CORPORATION LIMITED

PARADIP REFINERY

QUALITY CONTROL LABORATORY

IndianOil

AAQMS TEST REPORT DECEMBER-2025

Source of sample: AAQMS-1, 2, 3, 4, 5, 6 & 7 (All Ambient Air Monitoring Stations)

Date of Sample: 01, 04, 08, 11, 15, 18, 22, 25, 29, 12, 2025

Test report No: PDR/QC/AAQM/2025-2026/09

Date: 06.01.2026

S. No.	Parameter	UoM	Limit	AAQMS-1: Gate			AAQMS-2: Tech Bid			AAQMS-3: Flare			AAQMS-4: Loading Area			AAQMS-5: area			ETP			AAQMS-6: S-Fire Station/QCLab.			AAQMS-7: Incinerator		
				Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max
1	PM2.5	µg/m ³	60 Max	41.0	38.0	44.0	44.0	40.0	47.0	39.0	32.0	45.0	29.1	26.0	31.0	37.5	34.0	40.0	36.7	34.0	40.0	32.1	28.0	36.0			
2	PM10	µg/m ³	100 Max	84.2	79.0	91.0	88.8	80.0	95.0	82.0	73.0	92.0	66.0	61.0	72.0	79.5	76.0	84.0	76.6	70.0	83.0	65.9	39.0	73.0			
3	Ozone	µg/m ³	100 Max	28.9	23.9	31.4	32.1	27.1	37.8	29.1	27.1	31.2	31.0	27.1	35.4	30.2	24.4	34.0	28.3	25.1	32.2	29.8	26.1	33.8			
4	Ammonia	µg/m ³	400 Max	29.1	26.2	32.6	32.9	26.9	38.3	30.6	26.0	36.0	31.1	23.4	40.6	34.2	25.2	38.9	29.6	24.5	32.5	30.0	25.2	35.0			
5	NO _x	µg/m ³	80 Max	68.1	61.0	74.0	73.2	71.0	77.0	69.9	61.0	75.0	70.0	67.0	73.0	69.8	65.0	74.0	67.9	66.0	70.0	67.0	60.0	73.0			
6	Benzene	µg/m ³	5 Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
7	BenzoPyrene	ng/m ³	1 Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
8	SO _x	µg/m ³	80 Max	37.0	30.0	43.0	40.6	37.0	43.0	37.9	33.0	42.0	41.8	39.0	44.0	39.0	36.0	42.0	35.1	30.0	43.0	35.8	32.0	38.0			
9	Pb	µg/m ³	1 Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
10	As	ng/m ³	6 Max	0.3	0.2	0.4	0.3	0.1	0.3	0.2	0.2	0.3	0.2	0.2	0.3	0.3	0.2	0.4	0.2	0.2	0.3	0.2	0.2	0.3			
11	Ni	ng/m ³	20 Max	9.4	6.9	11.6	10.5	8.0	12.5	10.2	6.9	11.9	7.0	5.9	9.5	8.6	7.9	9.3	8.8	7.5	10.4	7.6	6.3	9.2			
12	CO	mg/m ³	2 Max																0.3	0.1	0.4						

Note: 1. Customer Information: Indian Oil Corporation Limited, Paradip Refinery, HSE Department.

2. Sample details: Sample collected by QC personnel and received as such.

3. The results relate only to the samples collected.

4. All tests/analyses performed at PDR Quality Control Laboratory as per applicable test methods, unless otherwise stated without any deviations to test method.

5. Customer confidential information shall be maintained as per customer agreement, if any.

6. This report shall not be produced except in full, without the written approval of Quality Control Laboratory, Paradip Refinery.

7. All test methods referred to in this certificate include a precision statement. The interpretation of results based on test method/ precision shall be used whenever applicable.

8. Laboratory Environmental Condition: 23±2 °C and 65 ± 10 %RH.

Dr. RC Sahu

Quality Control Manager

Indian Oil Corporation Ltd

Paradip Refinery



INDIAN OIL CORPORATION LIMITED
PARADIP REFINERY
QUALITY CONTROL LABORATORY
AAQMS TEST REPORT NOVEMBER-2025



IndianOil

Source of sample: AAQMS-1, 2, 3, 4, 6 & 7 (All Ambient Air Monitoring Stations)

Date of Sample: 03, 06, 10, 13, 17, 20, 24, 27.11.2025

Test report No: PDR/QC/AAQM/2025-2026/08

Date: 04.12.2025

S. No.	Parameter	UoM	Limit	AAQMS-1: Main Gate			AAQMS-2: IOTL Tech Bid			AAQMS-3: LT Flare			AAQMS-4: IOT Loading Area			AAQMS-5: S-Fire Station/QCLab.			AAQMS-7: Incinerator		
				Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max
1	PM2.5	µg/m³	60 Max	37.3	34.0	41.0	40.6	34.0	45.0	35.2	31.0	39.0	30.5	27.0	36.0	32.8	30.0	36.0			
2	PM10	µg/m³	100 Max	76.5	71.0	81.0	84.6	75.0	94.0	74.6	71.0	78.0	66.1	63.0	69.0	78.3	73.0	84.0	68.9	75.0	
3	Ozone	µg/m³	100 Max	31.6	26.5	39.0	31.6	29.1	36.3	30.4	28.5	33.1	31.3	29.4	35.5	30.7	25.1	37.0	26.4	35.9	
4	Ammonia	µg/m³	400 Max	32.5	27.8	37.9	33.7	27.5	43.8	30.2	24.5	33.8	32.2	26.6	40.7	33.6	30.3	36.7	33.4	27.6	
5	NO _x	µg/m³	80 Max	72.3	68.0	76.0	70.3	64.0	74.0	72.4	70.0	74.0	68.4	63.0	73.0	67.8	64.0	70.0	68.8	72.0	
6	Benzene	µg/m3	5 Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
7	Benzopyrene	ng/m3	1 Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
8	SO _x	µg/m³	80 Max	37.5	32.0	41.0	40.1	34.0	44.0	38.6	35.0	43.0	39.1	35.0	44.0	39.0	33.0	43.0	38.0	43.0	
9	Pb	µg/m³	1 Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
10	As	ng/m³	5 Max	0.3	0.3	0.4	0.3	0.3	0.4	0.3	0.3	0.4	0.3	0.2	0.4	0.3	0.2	0.3	0.2	0.4	
11	Ni	ng/m³	20 Max	8.3	6.6	10.0	9.9	9.1	11.0	8.2	7.1	9.2	7.1	6.4	8.6	8.6	7.2	9.5	7.3	8.2	
12	CO	mg/m³	2 Max													0.2	0.1	0.3			

Note: 1. Customer Information: Indian Oil Corporation Limited, Paradip Refinery, HSE Department.

2. Sample details: Sample collected by QC personnel and received as such.

3. The results relate only to the samples collected.

4. All tests/analyses performed at PDR Quality Control Laboratory as per applicable test methods, unless otherwise stated without any deviations to test method.

5. Customer confidential information shall be maintained as per customer agreement, if any.

6. This report shall not be produced except in full, without the written approval of Quality Control Laboratory, Paradip Refinery.

7. All test methods referred to in this certificate include a precision statement. The interpretation of results based on test method/ precision shall be used whenever applicable.

8. Laboratory Environmental Condition: 23±2 °C and 65 ± 10 %RH.

Dr. RC Sahu
Quality Control Manager
Indian Oil Corporation Ltd
Paradip Refinery



Indian Oil

INDIAN OIL CORPORATION LIMITED
PARADIP REFINERY
QUALITY CONTROL LABORATORY
AAQMS TEST REPORT OCTOBER-2025



Source of sample: AAQMS-1, 2, 3, 4, 5 & 7 (All Ambient Air Monitoring Stations)

Date of Sample: 02, 06, 09, 13, 16, 20, 23, 27, 30.10.2025

Test report No: PDR/C/AAQM/2025-2026/07

Date: 05.11.2025

S. No.	Parameter	UoM	Limit	AAQMS-1: Main Gate			AAQMS-2: IOTL Tech Bid			AAQMS-3: LT Flare			AAQMS-4: IOT Loading Area			AAQMS-6: S-Fire Station/OCLab.			AAQMS-7: Incinerator		
				Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max	Avg.	Min	Max
1	PM2.5	µg/m ³	60 Max	35.0	29.0	39.0	37.9	35.0	42.0	35.3	34.0	38.0	26.9	24.0	30.0	31.2	27.0	35.0	30.0	26.0	34.0
2	PM10	µg/m ³	100 Max	71.6	64.0	80.0	76.8	72.0	85.0	67.7	66.0	71.0	59.9	56.0	62.0	66.6	61.0	72.0	62.1	58.0	66.0
3	Ozone	µg/m ³	100 Max	28.7	24.4	32.7	31.7	26.2	35.4	30.5	29.4	32.1	31.3	26.1	35.1	28.9	23.9	33.8	28.7	25.1	32.4
4	Ammonia	µg/m ³	400 Max	31.2	24.5	35.9	32.6	24.3	38.5	31.7	26.2	35.1	32.0	25.6	41.0	31.6	26.4	34.7	29.7	25.2	37.0
5	NOx	µg/m ³	80 Max	67.5	64.0	72.0	70.3	64.0	74.0	72.3	69.0	75.0	66.2	59.0	73.0	66.1	61.0	70.0	66.9	64.0	74.0
6	Benzene	µg/m ³	5 Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	Benzopyrene	ng/m ³	1 Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	SOx	µg/m ³	80 Max	37.6	32.0	45.0	37.1	32.0	44.0	39.7	38.0	43.0	39.3	29.0	46.0	34.0	28.0	41.0	33.9	30.0	41.0
9	Pb	µg/m ³	1 Max	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	As	ng/m ³	6 Max	0.3	0.2	0.4	0.3	0.2	0.3	0.2	0.1	0.2	0.2	0.1	0.3	0.2	0.1	0.3	0.2	0.2	0.4
11	Ni	ng/m ³	20 Max	8.3	5.8	11.6	8.5	7.6	10.4	6.9	6.6	7.2	6.7	5.4	7.5	7.6	6.1	9.4	6.9	6.0	9.4
12	CO	mg/m ³	2 Max													0.2	0.1	0.3			

- Note: 1. Customer Information: Indian Oil Corporation Limited, Paradip Refinery, HSE Department.
2. Sample details: Sample collected by QC personnel and received as such.
3. The results relate only to the samples collected.
4. All test/analyses performed at PDR Quality Control Laboratory as per applicable test methods, unless otherwise stated without any deviations to test method.
5. Customer confidential information shall be maintained as per customer agreement, if any.
6. This report shall not be produced except in full, without the written approval of Quality Control Laboratory, Paradip Refinery.
7. All test methods referred to in this certificate include a precision statement. The interpretation of results based on test method/ precision shall be used whenever applicable.
8. Laboratory Environmental Condition: 23±2 °C and 65 ± 10 %RH.


Dr. RC Sahu
Quality Control Manager
Indian Oil Corporation Ltd
Paradip Refinery

Annexure-6

Sulphur Balance

SULPHUR BALANCE

Oct-25

no. of days

31

INPUT

TOTAL CRUDE CHARGED	TMT/Month		1401.320
SULPHUR CONTENT OF CRUDE MIX	% WT		2.391
ADDITIONAL VGO INPUT	TMT/Month		0.000
SULPHUR CONTENT OF ADDITIONAL INPUT	% WT		0.000
INTERMEDIATE FEED STOCK BUILD-UP	TMT/Month		0.000
SULPHUR CONTENT OF ISD	% WT		0.000
SULPHUR CONTENT IN INPUT	TMT/Month		33.512

PRODUCTS MAKE	TMT/Month	AVG. SULPHUR IN PRODUCT, PPM	SULPHUR WT. %	SULPHUR CONTENT, TMT/Month
LPG	105.254	150	0.015	0.02
NAPHTHA	73.696	250	0.025	0.02
PROPYLENE/Fuel for PP	14.438	0.01	0.000	0.00
GASOLENE-88	0.000	20	0.002	0.00
REFORMATE	0.291	1	0.000	0.00
MS-VI	280.173	10	0.001	0.00
KERO / PCK	0.943	1000	0.100	0.00
ATF	42.887	1000	0.100	0.04
HSD	560.136	8.5	0.001	0.00
HF HSD	48.197	10	0.001	0.00
LCO	5.369	677	0.068	0.00
COKE	119.547	70000.0	7.0	8.37
SULPHUR PRODUCT	24.932			24.93
Sulphur content in product				33.390
ISD build up/line fill				
Sulphur in Input	33.512			
Sulphur in Product	33.390			
S' emission, TMT/Month	0.12			
SO2 emission, kg/hr	328.2			

SRU Recovery
99.51%

SULPHUR BALANCE

Nov-25

no. of days

30

INPUT

TOTAL CRUDE CHARGED	TMT/Month		1330.684
SULPHUR CONTENT OF CRUDE MIX	% WT		2.428
ADDITIONAL VGO INPUT	TMT/Month		0.000
SULPHUR CONTENT OF ADDITIONAL INPUT	% WT		0.000
INTERMEDIATE FEED STOCK BUILD-UP	TMT/Month		0.000
SULPHUR CONTENT OF ISD	% WT		0.000
SULPHUR CONTENT IN INPUT	TMT/Month		32.313

PRODUCTS MAKE	TMT/Month	AVG. SULPHUR IN PRODUCT, PPM	SULPHUR WT. %	SULPHUR CONTENT, TMT/Month
LPG	104.571	150	0.015	0.02
NAPHTHA	1.519	250	0.025	0.00
PROPYLENE/Fuel for PP + MEG	13.645	0.01	0.000	0.00
GASOLENE-88	0.000	20	0.002	0.00
REFORMATE	56.114	1	0.000	0.00
MS-VI	291.226	10	0.001	0.00
KERO / PCK	1.428	1000	0.100	0.00
ATF	53.735	1000	0.100	0.05
HSD	524.899	8.5	0.001	0.00
HF HSD	64.499	10	0.001	0.00
LCO	0.002	677	0.068	0.00
COKE	113.946	69500.0	6.95	7.92
SULPHUR PRODUCT	24.197			24.20
Sulphur content in product				32.195
ISD build up/line fill				
Sulphur in Input	32.313			
Sulphur in Product	32.195			
S' emission, TMT/Month	0.12			
SO2 emission, kg/hr	327.8			

SRU Recovery
99.51%

SULPHUR BALANCE

Dec-25

no. of days

31

INPUT

TOTAL CRUDE CHARGED	TMT/Month		1371.205
SULPHUR CONTENT OF CRUDE MIX	% WT		2.432
ADDITIONAL VGO INPUT	TMT/Month		0.000
SULPHUR CONTENT OF ADDITIONAL INPUT	% WT		0.000
INTERMEDIATE FEED STOCK BUILD-UP	TMT/Month		0.000
SULPHUR CONTENT OF ISD	% WT		0.000
SULPHUR CONTENT IN INPUT	TMT/Month		33.351

PRODUCTS MAKE	TMT/Month	AVG. SULPHUR IN PRODUCT, PPM	SULPHUR WT. %	SULPHUR CONTENT, TMT/Month
LPG	111.022	150	0.015	0.02
NAPHTHA	8.718	250	0.025	0.00
PROPYLENE/Fuel for PP + MEG	6.774	0.01	0.000	0.00
GASOLINE-88	0.000	20	0.002	0.00
REFORMATE	65.939	1	0.000	0.00
MS-VI	260.334	10	0.001	0.00
KERO / PCK	0.330	1000	0.100	0.00
ATF	58.470	1000	0.100	0.06
HSD	562.085	8.5	0.001	0.00
HF HSD	36.455	10	0.001	0.00
LCO	1.335	677	0.068	0.00
COKE	118.271	67000.0	6.70	7.92
SULPHUR PRODUCT	25.223			25.22
Sulphur content in product				33.234
ISD build up/line fill				
Sulphur in Input	33.351			
Sulphur in Product	33.234			
S' emission, TMT/Month	0.12			
SO2 emission, kg/hr	315.0			

SRU Recovery
99.54%

SULPHUR BALANCE

Jan-26

no. of days

31

INPUT

TOTAL CRUDE CHARGED	TMT/Month		1383.790
SULPHUR CONTENT OF CRUDE MIX	% WT		2.443
ADDITIONAL VGO INPUT	TMT/Month		0.000
SULPHUR CONTENT OF ADDITIONAL INPUT	% WT		0.000
INTERMEDIATE FEED STOCK BUILD-UP	TMT/Month		0.000
SULPHUR CONTENT OF ISD	% WT		0.000
SULPHUR CONTENT IN INPUT	TMT/Month		33.805

PRODUCTS MAKE	TMT/Month	AVG. SULPHUR IN PRODUCT, PPM	SULPHUR WT. %	SULPHUR CONTENT, TMT/Month
LPG	116.596	150	0.015	0.02
NAPHTHA	21.310	250	0.025	0.01
PROPYLENE/Fuel for PP + MEG	5.988	0.01	0.000	0.00
GASOLENE-88	0.000	20	0.002	0.00
REFORMATE	77.365	1	0.000	0.00
MS-VI	258.405	10	0.001	0.00
KERO / PCK	0.000	1000	0.100	0.00
ATF	37.482	1000	0.100	0.04
HSD	524.402	8.5	0.001	0.00
HF HSD	69.162	10	0.001	0.00
LCO	3.189	677	0.068	0.00
COKE	112.834	77500.0	7.75	8.74
SULPHUR PRODUCT	24.876			24.88
Sulphur content in product				33.691
ISD build up/line fill				
Sulphur in Input	33.805			
Sulphur in Product	33.691			
S' emission, TMT/Month	0.11			
SO2 emission, kg/hr	305.5			

SRU Recovery
99.55%

SULPHUR BALANCE

Feb-26

no. of days

28

INPUT

TOTAL CRUDE CHARGED	TMT/Month		1254.013
SULPHUR CONTENT OF CRUDE MIX	% WT		2.602
ADDITIONAL VGO INPUT	TMT/Month		0.000
SULPHUR CONTENT OF ADDITIONAL INPUT	% WT		0.000
INTERMEDIATE FEED STOCK BUILD-UP	TMT/Month		0.000
SULPHUR CONTENT OF ISD	% WT		0.000
SULPHUR CONTENT IN INPUT	TMT/Month		32.630

PRODUCTS MAKE	TMT/Month	AVG. SULPHUR IN PRODUCT, PPM	SULPHUR WT. %	SULPHUR CONTENT, TMT/Month
LPG	102.542	150	0.015	0.02
NAPHTHA	18.334	250	0.025	0.00
PROPYLENE/Fuel for PP + MEG	5.315	0.01	0.000	0.00
GASOLENE-88	0.000	20	0.002	0.00
REFORMATE	24.291	1	0.000	0.00
MS-VI	260.828	10	0.001	0.00
KERO / PCK	1.097	1000	0.100	0.00
ATF	42.133	1000	0.100	0.04
HSD	518.428	8.5	0.001	0.00
HF HSD	45.540	10	0.001	0.00
LCO	22.454	677	0.068	0.02
COKE	119.081	74900.0	7.49	8.92
SULPHUR PRODUCT	23.515			23.52
Sulphur content in product				32.520
ISD build up/line fill				
Sulphur in Input	32.630			
Sulphur in Product	32.520			
S' emission, TMT/Month	0.11			
SO2 emission, kg/hr	325.8			

SRU Recovery
99.54%

SULPHUR BALANCE

Mar-26

no. of days

31

INPUT

TOTAL CRUDE CHARGED	TMT/Month		1330.114
SULPHUR CONTENT OF CRUDE MIX	% WT		2.275
ADDITIONAL VGO INPUT	TMT/Month		0.000
SULPHUR CONTENT OF ADDITIONAL INPUT	% WT		0.000
INTERMEDIATE FEED STOCK BUILD-UP	TMT/Month		0.000
SULPHUR CONTENT OF ISD	% WT		0.000
SULPHUR CONTENT IN INPUT	TMT/Month		30.257

PRODUCTS MAKE	TMT/Month	AVG. SULPHUR IN PRODUCT, PPM	SULPHUR WT.%	SULPHUR CONTENT, TMT/Month
LPG	126.863	150	0.015	0.02
NAPHTHA	4.990	250	0.025	0.00
PROPYLENE/Fuel for PP + MEG	8.435	0.01	0.000	0.00
GASOLENE-88	0.000	20	0.002	0.00
REFORMATE	65.152	1	0.000	0.00
MS-VI	267.291	10	0.001	0.00
KERO / PCK	1.075	1000	0.100	0.00
ATF	21.967	1000	0.100	0.02
HSD	500.527	8.5	0.001	0.00
HF HSD	72.753	10	0.001	0.00
LCO	15.641	677	0.068	0.01
COKE	118.697	73900.0	7.39	8.77
SULPHUR PRODUCT	21.316			21.32
Sulphur content in product				30.149
ISD build up/line fill				
Sulphur in Input	30.257			
Sulphur in Product	30.149			
S' emission, TMT/Month	0.11			
SO2 emission, kg/hr	290.7			

SRU Recovery
99.50%

Annexure-7

LDAR Report

REPORT ON

LDAR MONITORING AT INDIAN OIL ADANI VENTURES LIMITED SOJ IOCL PARADIP DECEMBER' 2025

SUBMITTED TO



INDIAN OIL ADANI VENTURES LIMITED

(Formerly Indian Oiltanking Limited)

Paradip BOOT TRM 80005, Indian Oil Adani Ventures, BOOT-3 Terminal,
IOCL Refinery, Jagatsingpur, Paradip, Odisha, PIN-754141

SUBMITTETED BY:



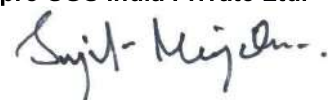
SGS India Private Limited

CS Plot-512 (P), Mouza, Hanspukuria,
Diamond Harbour Road, PO-Joka, South 24Parganas
Kolkata - 700104

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per pro SGS India Private Ltd.



Authorized Signatory



1 Introduction

SGS India Private Limited has been contracted to conduct LDAR monitoring at BOOT # 3 & SOJ of IOCL Paradip for 2021-2022 period. Accordingly the measurement of the identified fugitive emission sources within the study area to detect leaking components as per USEPA 21 Guideline were conducted during November-December 2021. Although the leak definition as per CPCB guideline is 3000 ppmv and 5000 ppmv, M/s IOT wanted SGS to report any source emission above 300 ppmv.

1.1 About Industry

Indian Oil Adani Ventures Limited (formally known as Indian Oil tanking) jointly owned by Indian Oil Corporation and APSEZ provides Infrastructure-led terminalling services to Petroleum, Petrochemical and Chemical companies in India since 1996. Over the past 22 years, the company has evolved into an integrated services provider with niche capabilities in Engineering, Build Capabilities, Operations and Maintenance (O&M) of Storage Terminals. Currently, we operate six terminals in India through various business models including BOO/BOOT (Build, Own, Operate/Transfer) and O&M.

The company brought the concept of independent terminalling in India for Petroleum products, wherein the operator does not own the product and provides services to users on a common user basis. It has pioneered the concepts of 'Build & Own' (BO), 'Build Own Operate' (BOO), BOO & Transfer (BOOT), Operations & Maintenance of third party terminals in India.

The company has also set up a first-of-its kind crude oil and petroleum product storage BOOT project inside Indian Oil Corporation's refinery at Paradip on India's East Coast, wherein the entire offsite storage of crude and finished products has been built.

PARADIP TERMINAL FACTS

Tank Capacity 1,513,968 cbm

Tanks 51

Tank Types Mild steel, pressure vessel steel

Access Types - Vessels, Tank Trucks, Pipeline, Berth

No. of Berths - 1

Products - Clean Petroleum Products, Crude Oil, Gases

Services - Pipeline connections to refineries, Tank-to-tank transfer, Vessel loading and unloading, Truck loading, Blending services, Homogenizing

2 Sampling Schedule & Report Number.

KE26-000012.001 From 23.12.2025 to 24.12.2025

3 Objective

The objective of the studies to Identifying potential fugitive emission sources and quantification of the fugitive emission during oil production in terminals.

A typical industry can emit tons per year of VOCs from leaking equipment, such as valves, connectors, pumps, sampling connections, compressors, pressure relief devices and open-ended lines etc. Process components covering all joints as mentioned above are monitored under "fugitive emission monitoring" program covering all the components in Boot # 3 & SOJ.

4 Present study

- a) Carry out onsite detection through physical scanning for leaks and vented emissions (if any) in the operating assets using portable analyzer according USEPA Method 21 (sniffing method).
- b) Monitoring and measurement of the identified fugitive emission sources within the study area and tagging the detected leaking components.
- c) The outcome of the study shall focus on the details the programme undertaken, methodology, findings, monitored fugitive emissions rates, conclusion and recommendations for improvement.

5 Scope of Work

- Fugitive emission monitoring at IOCL Paradip (Boot # 3 & SOJ) terminal.
- Monitoring and measurement of the identified fugitive emission sources (supplied by IOT) within the study area and tagging the detected leaking components as per USEPA method 21.

About LDAR:

Leak Detection and Repair (LDAR) is a program implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment. Several standards such as *Maximum Achievable Control Technology* (MACT) standards, *New Source Performance Standards* (NSPS), *National Emissions Standards for Hazardous Air Pollutants* (NESHAP) and Central Pollution Control Board (CPCB) require the monitoring and reporting of these fugitive emissions from process equipment.

Process components covering Boot # 3 and SOJ were monitored as LDAR and covered all the components in the process plant. The environmental regulations are prescribed LDAR programs as a means of reducing emissions have very specific standards and applied to a monitoring and repair program. The LDAR study included the following protocols:

- **Types of components (pumps, valves, connectors, Flanges etc.) to be monitored** – All the sources assumed to be leaking source are monitored as per the USEPA Method 21 Protocol.
- **Measured concentration in PPM that indicates a leak** – Emission source is measured at PPM (parts per million) level.
- **Frequency of monitoring** – As per EPA act 1986 page 409, Fugitive emission monitoring program is undertaken every year (including Heat Exchangers and Pump seal as a part of Quarterly Monitoring).
- Method of monitoring
- **Actions to be taken if a leak is discovered** – A leak source above the limit as per EPA act should be reported and repaired immediately and the sources emitting the leak under the limit should be reported and an appropriate action should be undertaken.

- **Length of time in which an initial attempt to repair the leak must be performed** – Depending upon the nature of leak source, a leak source above the limits as per EPA guidelines should be reported and repaired immediately.
- **Actions that must be taken if a leak cannot be repaired within guidelines** – A proper action should be undertaken as a leaking source contributes in air pollution.
- **Record-keeping and reporting requirements** – A proper record should be maintained so that the leak source can be monitored again to see discrepancies if any.

Affected Sources: Each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, flange and connector that contains or contacts a fluid or gas, that is exceeding more than 5000ppm of pump and compressor seals and 3000 ppm other components is an affected source.

Equipment Leak: A leak is defined as greater than or equal to 3,000 & 5000 ppmv as methane, for organic compounds, as determined by EPA Reference Method 21. Most of the emissions are from valves and connectors because these are most prevalent components and can number in the thousands. The major cause of emissions from valves and connectors is seal or gasket failure due to normal wear or improper maintenance. More than 90% of emissions from the leaking equipment with valves are being the most significant source. The open-ended lines and sampling connections account for as much as 5 – 10% of total VOC emissions from equipment leaks.

Minimum Requirements for an Acceptable Organic LDAR Program:

- Each affected source is screened initially using USEPA Method 21.
- Monthly visual inspections must be performed by industry on each affected source for signs of leakage (e.g. dripping liquid, spraying, misting, clouding, ice formation, distinctive odors, etc.).
- Monitoring of each affected source is to be conducting quarterly using Method 21.

All potential leak points associated with a component must be identified and screened for leaks. The detected leaks by Method 21 test was tagged and repaired. The leak sources are measured after repair and the same is recorded.

6 Methodology of the study:

USEPA Method – 21 was followed to monitor source emissions at IOT/IOCL Paradip.

6.1 Individual Source Surveys.

Leak Definition Based on Concentration. Place the probe inlet at the surface of the component interface where leakage could occur. Move the probe along the interface periphery while

observing the instrument readout. If an increased meter reading is observed, slowly sample the interface where leakage is indicated until the maximum meter reading is obtained. Leave the probe inlet at this maximum reading location for approximately two times the instrument response time. If the maximum observed meter reading is greater than the leak definition in the applicable regulation, record and report the results as specified in the regulation reporting requirements. Examples of the application of this general technique to specific equipment types are:

- Valves - The most common source of leaks from valves is the seal between the stem and housing. Place the probe at the interface where the stem exits the packing gland and sample the stem circumference. Also, place the probe at the interface of the packing gland take-up flange seat and sample the periphery. In addition, survey valve housings of multipart assembly at the surface of all interfaces where a leak could occur.

- **Flanges and Other Connections** - For welded flanges, place the probe at the outer edge of the flange-gasket interface and sample the circumference of the flange. Sample other types of nonpermanent joints (such as threaded connections) with a similar traverse.
- **Pumps and Compressors** - Conduct a circumferential traverse at the outer surface of the pump or compressor shaft and seal interface. If the source is a rotating shaft, position the probe inlet within 1 cm of the shaft-seal interface for the survey. If the housing configuration prevents a complete traverse of the shaft periphery, sample all accessible portions. Sample all other joints on the pump or compressor housing where leakage could occur.
- **Pressure Relief Devices** - The configuration of most pressure relief devices prevents sampling at the sealing seat interface. For those devices equipped with an enclosed extension, or horn, place the probe inlet at approximately the center of the exhaust area to the atmosphere.
- **Process Drains** - For open drains, place the probe inlet at approximately the center of the area open to the atmosphere. For covered drains, place the probe at the surface of the cover interface and conduct a peripheral traverse.
- **Access door seals**. Place the probe inlet at the surface of the door seal interface and conduct a peripheral traverse.

Calculation:

(Reference – EPA 1995 Protocol for Equipment Leak Emission Estimation Table 2-10)

Component Type	Default Zero Factor [Kg/hr]	Correlation Equation [Kg/hr]
Valves	[7.8E-06]	[2.29E-06(SV) ^{0.746}]
Pump Seals	[1.9E-05]	[5.03E-05(SV) ^{0.610}]
Others	[4.0E-06]	[1.36E-05(SV) ^{0.589}]
Connectors	[7.5E-06]	[1.53E-06(SV) ^{0.735}]
Flanges	[3.1E-07]	[4.61E-06(SV) ^{0.703}]
Open-ended Lines	[2.0E-06]	[2.20E-06(SV) ^{0.704}]

The default zero factors apply only when the screening value(SV) corrected for background equals 0 ppmv.

The correlation equations apply for actual screening values, corrected for background.

The “other” component type includes instruments, loading arms, pressure relief valves, vents, compressors, dump lever arms, diaphragms, drains, hatches, meters and polished rods stuffing boxes. This “other” component type should be applied for any component type other than connectors, flanges, open-ended lines, pumps or valves.

For example,

Reference USEPA-Method-21)

The screening value (SV) concentration in Valves is 2600 ppm

$$= \text{RF (\% of VOC Flow/100)} * 0.0000023 * \text{SV}^{0.746}$$

$$\text{RF} = \text{Response Factor} = 1$$

Response Factors of Different Volatiles (USEPA Method-21):	
Gasoline Vapors	1.05
Naphtha	1.0
Heavy Oil	1.1
Petrol & Diesel	0.8
Gasoline Vapors 2	0.7
Light Oil	1.0

% of VOC Flow = material passing on that particular pipe line.

0.00000227 = Correlation factor

SV = Screening Value in ppm

If we will apply all the values in the below formula

= RF (% of VOC Flow/100) *0.0000023*SV^0.746

= 1 (100/100) *0.0000023*2600^0.746

= 0.000350 kg/hr

Total hours of operation per year are 8760 (24 hours x 365 days)

The volatile emission = 3.0631692 Kgs/year.

SUMMARY OF THE STUDY

SGS has monitored more than One thousand eight hundred ninety three points in study area selected by IOT at IOCL Paradip SOJ area and more than one thousand points at the Berth at Paradip Port.

TEST RESULTS

SUMMARY SHEET OF TVOC EMISSION MEASUREMENT			
UNIT	NO. OF POINT MEASURE	TOTAL VOC EMISSION IN kg/Hr.	TOTAL VOC EMISSION IN kg/Year
Boot # 3	4799	0.003518	30.81463
SOJ	1550	0.000457	4.042831
TOTAL POINTS	6349	0.003975	34.85746

CONCLUSION:

The results are submitted component wise in the enclosed Annexure-1 As per CPCB guidelines no components detected with more than the standard values of 3000ppmv and 5000ppmv. Hence no recommendations are given for repairing of any leakage sources. However M/s IOT wanted SGS to report any source emission above 300 ppmv and accordingly SGS has tagged and reported for the points with emission of 300 ppmv and above.

Based on the concentration of VOC no points detected at SOJ in the month of December 2025.

Based on the calculation and concentrations of VOC in the equipment, we took default value 1 & 0.8 for Response Factor (RF) as per the product in the lines.

REPORT ON

LDAR MONITORING AT

INDIAN OIL ADANI VENTURES LIMITED

BOOT # 3 IOCL PARADIP

DECEMBER 2025

SUBMITTED TO



INDIAN OIL ADANI VENTURES LIMITED

(Formerly Indian Oiltanking Limited)

Paradip BOOT TRM 80005, Indian Oil Adani Ventures, BOOT-3 Terminal,
IOCL Refinery, Jagatsingpur, Paradip, Odisha, PIN-754141

SUBMITTED BY:



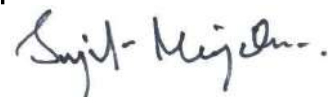
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Kolkata - 700104

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per pro SGS India Private Ltd.



Authorized Signatory



1 Introduction

SGS India Private Limited has been contracted to conduct LDAR monitoring at BOOT # 3 & SOJ of IOCL Paradip for 2021-2022 period. Accordingly the measurement of the identified fugitive emission sources within the study area to detect leaking components as per USEPA 21 Guideline were conducted during November-December 2021. Although the leak definition as per CPCB guideline is 3000 ppmv and 5000 ppmv, M/s IOT wanted SGS to report any source emission above 300 ppmv.

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The company has also set up a first-of-its kind crude oil and petroleum product storage BOOT project inside Indian Oil Corporation's refinery at Paradip on India's East Coast, wherein the entire offsite storage of crude and finished products has been built.

PARADIP TERMINAL FACTS

Tank Capacity 1,513,968 cbm

Tanks 51

Tank Types Mild steel, pressure vessel steel

Access Types - Vessels, Tank Trucks, Pipeline, Berth

No. of Berths - 1

Products - Clean Petroleum Products, Crude Oil, Gases

Services - Pipeline connections to refineries, Tank-to-tank transfer, Vessel loading and unloading, Truck loading, Blending services, Homogenizing

2 Sampling Schedule & Report Number

KE26-000013.001 From 24.12.2025 to 30.12.2025

3 Objective

The objective of the studies to Identifying potential fugitive emission sources and quantification of the fugitive emission during oil production in terminals.

A typical industry can emit tons per year of VOCs from leaking equipment, such as valves, connectors, pumps, sampling connections, compressors, pressure relief devices and open-ended lines etc. Process components covering all joints as mentioned above are monitored under "fugitive emission monitoring" program covering all the components in Boot # 3 & SOJ.

4 Present study

- a) Carry out onsite detection through physical scanning for leaks and vented emissions (if any) in the operating assets using portable analyzer according USEPA Method 21 (sniffing method).
- b) Monitoring and measurement of the identified fugitive emission sources within the study area and tagging the detected leaking components.
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5 Scope of Work

- Fugitive emission monitoring at IOCL Paradip (Boot # 3 & SOJ) terminal.
- Monitoring and measurement of the identified fugitive emission sources (supplied by IOT) within the study area and tagging the detected leaking components as per USEPA method 21.

About LDAR:

Leak Detection and Repair (LDAR) is a program implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment. Several standards such as *Maximum Achievable Control Technology* (MACT) standards, *New Source Performance Standards* (NSPS), *National Emissions Standards for Hazardous Air Pollutants* (NESHAP) and Central Pollution Control Board (CPCB) require the monitoring and reporting of these fugitive emissions from process equipment.

Process components covering Boot # 3 and SOJ were monitored as LDAR and covered all the components in the process plant. The environmental regulations are prescribed LDAR programs as a means of reducing emissions have very specific standards and applied to a monitoring and repair program. The LDAR study included the following protocols:

- **Types of components (pumps, valves, connectors, Flanges etc.) to be monitored** – All the sources assumed to be leaking source are monitored as per the USEPA Method 21 Protocol.
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Affected Sources: Each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, flange and connector that contains or contacts a fluid or gas, that is exceeding more than 5000ppm of pump and compressor seals and 3000 ppm other components is an affected source.

Equipment Leak: A leak is defined as greater than or equal to 3,000 & 5000 ppmv as methane, for organic compounds, as determined by EPA Reference Method 21. Most of the emissions are from valves and connectors because these are most prevalent components and can number in the thousands. The major cause of emissions from valves and connectors is seal or gasket failure due to normal wear or improper maintenance. More than 90% of emissions from the leaking equipment with valves are being the most significant source. The open-ended lines and sampling connections account for as much as 5 – 10% of total VOC emissions from equipment leaks.

Minimum Requirements for an Acceptable Organic LDAR Program:

- Each affected source is screened initially using USEPA Method 21.
- Monthly visual inspections must be performed by industry on each affected source for signs of leakage (e.g. dripping liquid, spraying, misting, clouding, ice formation, distinctive odors, etc.).
- Monitoring of each affected source is to be conducting quarterly using Method 21.

All potential leak points associated with a component must be identified and screened for leaks. The detected leaks by Method 21 test was tagged and repaired. The leak sources are measured after repair and the same is recorded.

6 Methodology of the study:

USEPA Method – 21 was followed to monitor source emissions at IOT/IOCL Paradip.

6.1 Individual Source Surveys.

Leak Definition Based on Concentration. Place the probe inlet at the surface of the component interface where leakage could occur. Move the probe along the interface periphery while

observing the instrument readout. If an increased meter reading is observed, slowly sample the interface where leakage is indicated until the maximum meter reading is obtained. Leave the probe inlet at this maximum reading location for approximately two times the instrument response time. If the maximum observed meter reading is greater than the leak definition in the applicable regulation, record and report the results as specified in the regulation reporting requirements. Examples of the application of this general technique to specific equipment types are:

- Valves - The most common source of leaks from valves is the seal between the stem and housing. Place the probe at the interface where the stem exits the packing gland and sample the stem circumference. Also, place the probe at the interface of the packing gland take-up flange seat and sample the periphery. In addition, survey valve housings of multipart assembly at the surface of all interfaces where a leak could occur.

- **Flanges and Other Connections** - For welded flanges, place the probe at the outer edge of the flange-gasket interface and sample the circumference of the flange. Sample other types of nonpermanent joints (such as threaded connections) with a similar traverse.
- **Pumps and Compressors** - Conduct a circumferential traverse at the outer surface of the pump or compressor shaft and seal interface. If the source is a rotating shaft, position the probe inlet within 1 cm of the shaft-seal interface for the survey. If the housing configuration prevents a complete traverse of the shaft periphery, sample all accessible portions. Sample all other joints on the pump or compressor housing where leakage could occur.
- **Pressure Relief Devices** - The configuration of most pressure relief devices prevents sampling at the sealing seat interface. For those devices equipped with an enclosed extension, or horn, place the probe inlet at approximately the center of the exhaust area to the atmosphere.
- **Process Drains** - For open drains, place the probe inlet at approximately the center of the area open to the atmosphere. For covered drains, place the probe at the surface of the cover interface and conduct a peripheral traverse.
- **Access door seals**. Place the probe inlet at the surface of the door seal interface and conduct a peripheral traverse.

Calculation:

(Reference – EPA 1995 Protocol for Equipment Leak Emission Estimation Table 2-10)

Component Type	Default Zero Factor [Kg/hr]	Correlation Equation [Kg/hr]
Valves	[7.8E-06]	[2.29E-06(SV) ^{0.746}]
Pump Seals	[1.9E-05]	[5.03E-05(SV) ^{0.610}]
Others	[4.0E-06]	[1.36E-05(SV) ^{0.589}]
Connectors	[7.5E-06]	[1.53E-06(SV) ^{0.735}]
Flanges	[3.1E-07]	[4.61E-06(SV) ^{0.703}]
Open-ended Lines	[2.0E-06]	[2.20E-06(SV) ^{0.704}]

The default zero factors apply only when the screening value(SV) corrected for background equals 0 ppmv.

The correlation equations apply for actual screening values, corrected for background.

The “other” component type includes instruments, loading arms, pressure relief valves, vents, compressors, dump lever arms, diaphragms, drains, hatches, meters and polished rods stuffing boxes. This “other” component type should be applied for any component type other than connectors, flanges, open-ended lines, pumps or valves.

For example,

Reference USEPA-Method-21)

The screening value (SV) concentration in Valves is 2600 ppm

$$= \text{RF (\% of VOC Flow/100)} * 0.0000023 * \text{SV}^{0.746}$$

$$\text{RF} = \text{Response Factor} = 1$$

Response Factors of Different Volatiles (USEPA Method-21):	
Gasoline Vapors	1.05
Naphtha	1.0
Heavy Oil	1.1
Petrol & Diesel	0.8
Gasoline Vapors 2	0.7
Light Oil	1.0

% of VOC Flow = material passing on that particular pipe line.

0.00000227 = Correlation factor

SV = Screening Value in ppm

If we will apply all the values in the below formula

= RF (% of VOC Flow/100) *0.0000023*SV^0.746

= 1 (100/100) *0.0000023*2600^0.746

= 0.002291 kg/hr

Total hours of operation per year are 8760 (24 hours x 365 days)

The volatile emission = 20.069133 Kgs/year.

SUMMARY OF THE STUDY

SGS has monitored more than four thousand three hundred fifty-seven points in study area selected by IOT at IOCL Paradip Boot # 3 area and more than one thousand points at the Berth at Paradip Port.

TEST RESULTS

SUMMARY SHEET OF TVOC EMISSION MEASUREMENT			
UNIT	NO. OF POINT MEASURE	TOTAL VOC EMISSION IN kg/Hr.	TOTAL VOC EMISSION IN kg/Year
Boot # 3	4799	0.003518	30.81463
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TOTAL POINTS	6349	0.003975	34.85746

CONCLUSION:

The results are submitted component wise in the enclosed Annexure-1 As per CPCB guidelines no components detected with more than the standard values of 3000ppmv and 5000ppmv. Hence no recommendations are given for repairing of any leakage sources. However M/s IOT wanted SGS to report any source emission above 300 ppmv and accordingly SGS has tagged and reported for the points with emission of 300 ppmv and above.

Based on the concentration of VOC no points detected at BOOT # 3 in the month of December 2025.

Based on the calculation and concentrations of VOC in the equipment, we took default value 1 & 0.8 for Response Factor (RF) as per the product in the lines.

REPORT ON
LDAR MONITORING AT
INDIAN OIL ADANI VENTURES LIMITED
SOJ IOCL PARADIP
MARCH' 2026

SUBMITTED TO



INDIAN OIL ADANI VENTURES LIMITED

(Formerly Indian Oiltanking Limited)

**Paradip BOOT TRM 80005, Indian Oil Adani Ventures, BOOT-3 Terminal,
IOCL Refinery, Jagatsingpur, Paradip, Odisha, PIN-754141**



SUBMITTED BY:



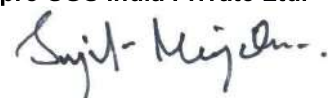
SGS India Private Limited

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Kolkata - 700104**

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per pro SGS India Private Ltd.



Authorized Signatory



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Tanks 51

Tank Types Mild steel, pressure vessel steel

Access Types - Vessels, Tank Trucks, Pipeline, Berth

No. of Berths - 1

Products - Clean Petroleum Products, Crude Oil, Gases

Services - Pipeline connections to refineries, Tank-to-tank transfer, Vessel loading and unloading, Truck loading, Blending services, Homogenizing

2 Sampling Schedule & Report Number.

KE26-000699.001 From 19.03.2026 to 20.03.2026

3 Objective

The objective of the studies to Identifying potential fugitive emission sources and quantification of the fugitive emission during oil production in terminals.

A typical industry can emit tons per year of VOCs from leaking equipment, such as valves, connectors, pumps, sampling connections, compressors, pressure relief devices and open-ended lines etc. Process components covering all joints as mentioned above are monitored under "fugitive emission monitoring" program covering all the components in Boot # 3 & SOJ.

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- a) Carry out onsite detection through physical scanning for leaks and vented emissions (if any) in the operating assets using portable analyzer according USEPA Method 21 (sniffing method).
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- **Frequency of monitoring** – As per EPA act 1986 page 409, Fugitive emission monitoring program is undertaken every year (including Heat Exchangers and Pump seal as a part of Quarterly Monitoring).
- Method of monitoring
- **Actions to be taken if a leak is discovered** – A leak source above the limit as per EPA act should be reported and repaired immediately and the sources emitting the leak under the limit should be reported and an appropriate action should be undertaken.

- **Length of time in which an initial attempt to repair the leak must be performed** – Depending upon the nature of leak source, a leak source above the limits as per EPA guidelines should be reported and repaired immediately.
- **Actions that must be taken if a leak cannot be repaired within guidelines** – A proper action should be undertaken as a leaking source contributes in air pollution.
- **Record-keeping and reporting requirements** – A proper record should be maintained so that the leak source can be monitored again to see discrepancies if any.

Affected Sources: Each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, flange and connector that contains or contacts a fluid or gas, that is exceeding more than 5000ppm of pump and compressor seals and 3000 ppm other components is an affected source.

Equipment Leak: A leak is defined as greater than or equal to 3,000 & 5000 ppmv as methane, for organic compounds, as determined by EPA Reference Method 21. Most of the emissions are from valves and connectors because these are most prevalent components and can number in the thousands. The major cause of emissions from valves and connectors is seal or gasket failure due to normal wear or improper maintenance. More than 90% of emissions from the leaking equipment with valves are being the most significant source. The open-ended lines and sampling connections account for as much as 5 – 10% of total VOC emissions from equipment leaks.

Minimum Requirements for an Acceptable Organic LDAR Program:

- Each affected source is screened initially using USEPA Method 21.
- Monthly visual inspections must be performed by industry on each affected source for signs of leakage (e.g. dripping liquid, spraying, misting, clouding, ice formation, distinctive odors, etc.).
- Monitoring of each affected source is to be conducting quarterly using Method 21.

All potential leak points associated with a component must be identified and screened for leaks. The detected leaks by Method 21 test was tagged and repaired. The leak sources are measured after repair and the same is recorded.

6 Methodology of the study:

USEPA Method – 21 was followed to monitor source emissions at IOT/IOCL Paradip.

6.1 Individual Source Surveys.

Leak Definition Based on Concentration. Place the probe inlet at the surface of the component interface where leakage could occur. Move the probe along the interface periphery while

observing the instrument readout. If an increased meter reading is observed, slowly sample the interface where leakage is indicated until the maximum meter reading is obtained. Leave the probe inlet at this maximum reading location for approximately two times the instrument response time. If the maximum observed meter reading is greater than the leak definition in the applicable regulation, record and report the results as specified in the regulation reporting requirements. Examples of the application of this general technique to specific equipment types are:

- Valves - The most common source of leaks from valves is the seal between the stem and housing. Place the probe at the interface where the stem exits the packing gland and sample the stem circumference. Also, place the probe at the interface of the packing gland take-up flange seat and sample the periphery. In addition, survey valve housings of multipart assembly at the surface of all interfaces where a leak could occur.

- **Flanges and Other Connections** - For welded flanges, place the probe at the outer edge of the flange-gasket interface and sample the circumference of the flange. Sample other types of nonpermanent joints (such as threaded connections) with a similar traverse.
- **Pumps and Compressors** - Conduct a circumferential traverse at the outer surface of the pump or compressor shaft and seal interface. If the source is a rotating shaft, position the probe inlet within 1 cm of the shaft-seal interface for the survey. If the housing configuration prevents a complete traverse of the shaft periphery, sample all accessible portions. Sample all other joints on the pump or compressor housing where leakage could occur.
- **Pressure Relief Devices** - The configuration of most pressure relief devices prevents sampling at the sealing seat interface. For those devices equipped with an enclosed extension, or horn, place the probe inlet at approximately the center of the exhaust area to the atmosphere.
- **Process Drains** - For open drains, place the probe inlet at approximately the center of the area open to the atmosphere. For covered drains, place the probe at the surface of the cover interface and conduct a peripheral traverse.
- **Access door seals**. Place the probe inlet at the surface of the door seal interface and conduct a peripheral traverse.

Calculation:

(Reference – EPA 1995 Protocol for Equipment Leak Emission Estimation Table 2-10)

Component Type	Default Zero Factor [Kg/hr]	Correlation Equation [Kg/hr]
Valves	[7.8E-06]	[2.29E-06(SV) ^{0.746}]
Pump Seals	[1.9E-05]	[5.03E-05(SV) ^{0.610}]
Others	[4.0E-06]	[1.36E-05(SV) ^{0.589}]
Connectors	[7.5E-06]	[1.53E-06(SV) ^{0.735}]
Flanges	[3.1E-07]	[4.61E-06(SV) ^{0.703}]
Open-ended Lines	[2.0E-06]	[2.20E-06(SV) ^{0.704}]

The default zero factors apply only when the screening value(SV) corrected for background equals 0 ppmv.

The correlation equations apply for actual screening values, corrected for background.

The “other” component type includes instruments, loading arms, pressure relief valves, vents, compressors, dump lever arms, diaphragms, drains, hatches, meters and polished rods stuffing boxes. This “other” component type should be applied for any component type other than connectors, flanges, open-ended lines, pumps or valves.

For example,

Reference USEPA-Method-21)

The screening value (SV) concentration in Valves is 2600 ppm

$$= \text{RF (\% of VOC Flow/100)} * 0.0000023 * \text{SV}^{0.746}$$

$$\text{RF} = \text{Response Factor} = 1$$

Response Factors of Different Volatiles (USEPA Method-21):	
Gasoline Vapors	1.05
Naphtha	1.0
Heavy Oil	1.1
Petrol & Diesel	0.8
Gasoline Vapors 2	0.7
Light Oil	1.0

% of VOC Flow = material passing on that particular pipe line.

0.00000227 = Correlation factor

SV = Screening Value in ppm

If we will apply all the values in the below formula

= RF (% of VOC Flow/100) *0.0000023*SV^0.746

= 1 (100/100) *0.0000023*2600^0.746

= 0.000350 kg/hr

Total hours of operation per year are 8760 (24 hours x 365 days)

The volatile emission = 3.0631692 Kgs/year.

SUMMARY OF THE STUDY

SGS has monitored more than One thousand eight hundred ninety three points in study area selected by IOT at IOCL Paradip SOJ area and more than one thousand points at the Berth at Paradip Port.

TEST RESULTS

SUMMARY SHEET OF TVOC EMISSION MEASUREMENT			
UNIT	NO. OF POINT MEASURE	TOTAL VOC EMISSION IN kg/Hr.	TOTAL VOC EMISSION IN kg/Year
Boot # 3	4799	0.000614	5.378504
South Oil Jetty	1550	0.000169	1.491868
TOTAL POINTS	6349	0.003975	6.870372

CONCLUSION:

The results are submitted component wise in the enclosed Annexure-1 As per CPCB guidelines no components detected with more than the standard values of 3000ppmv and 5000ppmv. Hence no recommendations are given for repairing of any leakage sources. However M/s IOT wanted SGS to report any source emission above 300 ppmv and accordingly SGS has tagged and reported for the points with emission of 300 ppmv and above.

Based on the concentration of VOC no points detected at SOJ in the month of March 2026.

Based on the calculation and concentrations of VOC in the equipment, we took default value 1 & 0.8 for Response Factor (RF) as per the product in the lines.

REPORT ON

LDAR MONITORING AT

INDIAN OIL ADANI VENTURES LIMITED

BOOT # 3 IOCL PARADIP

MARCH 2026

SUBMITTED TO



INDIAN OIL ADANI VENTURES LIMITED

(Formerly Indian Oiltanking Limited)

Paradip BOOT TRM 80005, Indian Oil Adani Ventures, BOOT-3 Terminal,
IOCL Refinery, Jagatsingpur, Paradip, Odisha, PIN-754141

SUBMITTED BY:



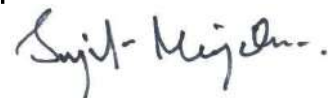
SGS India Private Limited

CS Plot-512 (P), Mouza, Hanspukuria,
Diamond Harbour Road, PO-Joka, South 24 Parganas
Kolkata - 700104

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per pro SGS India Private Ltd.



Authorized Signatory



1 Introduction

SGS India Private Limited has been contracted to conduct LDAR monitoring at BOOT # 3 & SOJ of IOCL Paradip for 2021-2022 period. Accordingly the measurement of the identified fugitive emission sources within the study area to detect leaking components as per USEPA 21 Guideline were conducted during November-December 2021. Although the leak definition as per CPCB guideline is 3000 ppmv and 5000 ppmv, M/s IOT wanted SGS to report any source emission above 300 ppmv.

1.1 About Industry

Indian Oil Adani Ventures Limited (formally known as Indian Oil tanking) jointly owned by Indian Oil Corporation and APSEZ provides Infrastructure-led terminalling services to Petroleum, Petrochemical and Chemical companies in India since 1996. Over the past 22 years, the company has evolved into an integrated services provider with niche capabilities in Engineering, Build Capabilities, Operations and Maintenance (O&M) of Storage Terminals. Currently, we operate six terminals in India through various business models including BOO/BOOT (Build, Own, Operate/Transfer) and O&M.

The company brought the concept of independent terminalling in India for Petroleum products, wherein the operator does not own the product and provides services to users on a common user basis. It has pioneered the concepts of 'Build & Own' (BO), 'Build Own Operate' (BOO), BOO & Transfer (BOOT), Operations & Maintenance of third party terminals in India.

The company has also set up a first-of-its kind crude oil and petroleum product storage BOOT project inside Indian Oil Corporation's refinery at Paradip on India's East Coast, wherein the entire offsite storage of crude and finished products has been built.

PARADIP TERMINAL FACTS

Tank Capacity 1,513,968 cbm

Tanks 51

Tank Types Mild steel, pressure vessel steel

Access Types - Vessels, Tank Trucks, Pipeline, Berth

No. of Berths - 1

Products - Clean Petroleum Products, Crude Oil, Gases

Services - Pipeline connections to refineries, Tank-to-tank transfer, Vessel loading and unloading, Truck loading, Blending services, Homogenizing

2 Sampling Schedule & Report Number.

KE26-000700.001 From 16.03.2026 to 21.03.2026

3 Objective

The objective of the studies to Identifying potential fugitive emission sources and quantification of the fugitive emission during oil production in terminals.

A typical industry can emit tons per year of VOCs from leaking equipment, such as valves, connectors, pumps, sampling connections, compressors, pressure relief devices and open-ended lines etc. Process components covering all joints as mentioned above are monitored under "fugitive emission monitoring" program covering all the components in Boot # 3 & SOJ.

4 Present study

- a) Carry out onsite detection through physical scanning for leaks and vented emissions (if any) in the operating assets using portable analyzer according USEPA Method 21 (sniffing method).
- b) Monitoring and measurement of the identified fugitive emission sources within the study area and tagging the detected leaking components.
- c) The outcome of the study shall focus on the details the programme undertaken, methodology, findings, monitored fugitive emissions rates, conclusion and recommendations for improvement.

5 Scope of Work

- Fugitive emission monitoring at IOCL Paradip (Boot # 3 & SOJ) terminal.
- Monitoring and measurement of the identified fugitive emission sources (supplied by IOT) within the study area and tagging the detected leaking components as per USEPA method 21.

About LDAR:

Leak Detection and Repair (LDAR) is a program implemented to comply with environmental regulations for reducing the fugitive emissions of targeted chemicals into the environment. Several standards such as *Maximum Achievable Control Technology* (MACT) standards, *New Source Performance Standards* (NSPS), *National Emissions Standards for Hazardous Air Pollutants* (NESHAP) and Central Pollution Control Board (CPCB) require the monitoring and reporting of these fugitive emissions from process equipment.

Process components covering Boot # 3 and SOJ were monitored as LDAR and covered all the components in the process plant. The environmental regulations are prescribed LDAR programs as a means of reducing emissions have very specific standards and applied to a monitoring and repair program. The LDAR study included the following protocols:

- **Types of components (pumps, valves, connectors, Flanges etc.) to be monitored** – All the sources assumed to be leaking source are monitored as per the USEPA Method 21 Protocol.
- **Measured concentration in PPM that indicates a leak** – Emission source is measured at PPM (parts per million) level.
- **Frequency of monitoring** – As per EPA act 1986 page 409, Fugitive emission monitoring program is undertaken every year (including Heat Exchangers and Pump seal as a part of Quarterly Monitoring).
- Method of monitoring
- **Actions to be taken if a leak is discovered** – A leak source above the limit as per EPA act should be reported and repaired immediately and the sources emitting the leak under the limit should be reported and an appropriate action should be undertaken.

- **Length of time in which an initial attempt to repair the leak must be performed** – Depending upon the nature of leak source, a leak source above the limits as per EPA guidelines should be reported and repaired immediately.
- **Actions that must be taken if a leak cannot be repaired within guidelines** – A proper action should be undertaken as a leaking source contributes in air pollution.
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Affected Sources: Each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, flange and connector that contains or contacts a fluid or gas, that is exceeding more than 5000ppm of pump and compressor seals and 3000 ppm other components is an affected source.

Equipment Leak: A leak is defined as greater than or equal to 3,000 & 5000 ppmv as methane, for organic compounds, as determined by EPA Reference Method 21. Most of the emissions are from valves and connectors because these are most prevalent components and can number in the thousands. The major cause of emissions from valves and connectors is seal or gasket failure due to normal wear or improper maintenance. More than 90% of emissions from the leaking equipment with valves are being the most significant source. The open-ended lines and sampling connections account for as much as 5 – 10% of total VOC emissions from equipment leaks.

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- Monitoring of each affected source is to be conducting quarterly using Method 21.

All potential leak points associated with a component must be identified and screened for leaks. The detected leaks by Method 21 test was tagged and repaired. The leak sources are measured after repair and the same is recorded.

6 Methodology of the study:

USEPA Method – 21 was followed to monitor source emissions at IOT/IOCL Paradip.

6.1 Individual Source Surveys.

Leak Definition Based on Concentration. Place the probe inlet at the surface of the component interface where leakage could occur. Move the probe along the interface periphery while

observing the instrument readout. If an increased meter reading is observed, slowly sample the interface where leakage is indicated until the maximum meter reading is obtained. Leave the probe inlet at this maximum reading location for approximately two times the instrument response time. If the maximum observed meter reading is greater than the leak definition in the applicable regulation, record and report the results as specified in the regulation reporting requirements. Examples of the application of this general technique to specific equipment types are:

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- **Flanges and Other Connections** - For welded flanges, place the probe at the outer edge of the flange-gasket interface and sample the circumference of the flange. Sample other types of nonpermanent joints (such as threaded connections) with a similar traverse.
- **Pumps and Compressors** - Conduct a circumferential traverse at the outer surface of the pump or compressor shaft and seal interface. If the source is a rotating shaft, position the probe inlet within 1 cm of the shaft-seal interface for the survey. If the housing configuration prevents a complete traverse of the shaft periphery, sample all accessible portions. Sample all other joints on the pump or compressor housing where leakage could occur.
- **Pressure Relief Devices** - The configuration of most pressure relief devices prevents sampling at the sealing seat interface. For those devices equipped with an enclosed extension, or horn, place the probe inlet at approximately the center of the exhaust area to the atmosphere.
- **Process Drains** - For open drains, place the probe inlet at approximately the center of the area open to the atmosphere. For covered drains, place the probe at the surface of the cover interface and conduct a peripheral traverse.
- **Access door seals**. Place the probe inlet at the surface of the door seal interface and conduct a peripheral traverse.

Calculation:

(Reference – EPA 1995 Protocol for Equipment Leak Emission Estimation Table 2-10)

Component Type	Default Zero Factor [Kg/hr]	Correlation Equation [Kg/hr]
Valves	[7.8E-06]	[2.29E-06(SV) ^{0.746}]
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The default zero factors apply only when the screening value(SV) corrected for background equals 0 ppmv.

The correlation equations apply for actual screening values, corrected for background.

The “other” component type includes instruments, loading arms, pressure relief valves, vents, compressors, dump lever arms, diaphragms, drains, hatches, meters and polished rods stuffing boxes. This “other” component type should be applied for any component type other than connectors, flanges, open-ended lines, pumps or valves.

For example,

Reference USEPA-Method-21)

The screening value (SV) concentration in Valves is 2600 ppm

$$= \text{RF (\% of VOC Flow/100)} * 0.0000023 * \text{SV}^{0.746}$$

$$\text{RF} = \text{Response Factor} = 1$$

Response Factors of Different Volatiles (USEPA Method-21):	
Gasoline Vapors	1.05
Naphtha	1.0
Heavy Oil	1.1
Petrol & Diesel	0.8
Gasoline Vapors 2	0.7
Light Oil	1.0

% of VOC Flow = material passing on that particular pipe line.

0.00000227 = Correlation factor

SV = Screening Value in ppm

If we will apply all the values in the below formula

= RF (% of VOC Flow/100) * 0.0000023 * SV^{0.746}

= 1 (100/100) * 0.0000023 * 2600^{0.746}

= 0.000350 kg/hr

Total hours of operation per year are 8760 (24 hours x 365 days)

The volatile emission = 3.0631692 Kgs/year.

SUMMARY OF THE STUDY

SGS has monitored more than One thousand eight hundred ninety three points in study area selected by IOT at IOCL Paradip SOJ area and more than one thousand points at the Berth at Paradip Port.

TEST RESULTS

SUMMARY SHEET OF TVOC EMISSION MEASUREMENT			
UNIT	NO. OF POINT MEASURE	TOTAL VOC EMISSION IN kg/Hr.	TOTAL VOC EMISSION IN kg/Year
Boot # 3	4799	0.000614	5.378504
South Oil Jetty	1550	0.000169	1.491868
TOTAL POINTS	6349	0.003975	6.870372

CONCLUSION:

The results are submitted component wise in the enclosed Annexure-1 As per CPCB guidelines no components detected with more than the standard values of 3000ppmv and 5000ppmv. Hence no recommendations are given for repairing of any leakage sources. However M/s IOT wanted SGS to report any source emission above 300 ppmv and accordingly SGS has tagged and reported for the points with emission of 300 ppmv and above.

Based on the concentration of VOC no points detected at SOJ in the month of March 2026.

Based on the calculation and concentrations of VOC in the equipment, we took default value 1 & 0.8 for Response Factor (RF) as per the product in the lines.

Annexure-8

Treated Effluent Water Quality Report



IndianOil

INDIAN OIL CORPORATION LIMITED

PARADIP REFINERY

QUALITY CONTROL LABORATORY

TEST REPORT



Source of sample: ETP to Sea Discharge (HCOD) Outlet				Method of collection: IS 3025 P:1							
Sample drawn by: Production				Report No: PDR/QC/MINAS/2025-2026/Q3-Q4							
Date of Sample:				24.10.2025	25.11.2025	25.12.2025	23.01.2026	23.02.2026	25.03.2026		
Sl No	Parameters	Test Method	UoM	Limits : MINAS		Sea Discharge (HCOD Outlet)					
1	pH	APHA 4500 H ⁺ B	...	6.0 -8.5		7.2	7.7	7.2	7.0	7.1	7.3
2	Oil & Grease	APHA 5520 D	mg/l	Max 5		<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
3	BOD, 3days @ 27°C	IS 3025 (P:44)	mg/l	Max 15		9	6	7	8	9	13
4	COD	APHA 5220 B	mg/l	Max 125		72	52	58	67	78	107
5	Total Suspended Solid	APHA 2540 D	mg/l	Max 20		<2.5	4.0	<2.5	<2.5	<2.5	<2.5
6	Phenols	APHA 5530 B&D	mg/l	Max 0.35		0.07	0.06	0.05	0.03	0.07	0.08
7	Sulphides	APHA 4500 S ²⁻ F	mg/l	Max 0.5		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8	CN	APHA 4500 CN/C&D	mg/l	Max 0.2		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
9	Ammonia as N	APHA 4500 NH ₃ B&F	mg/l	Max 15		3.3	3.6	4.0	2.4	2.6	3.5
10	TKN	APHA 4500 N org B	mg/l	Max 40		9.2	12	12.2	6.0	6.8	8.5
11	Phosphorus as P	APHA 4500 P D	mg/l	Max 3		0.009	0.016	0.002	0.015	0.01	0.008
12	Cr (Hexavalent)	APHA3500 Cr B	mg/l	Max 0.1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
13	Cr (Total)	APHA3030E &3111 B	mg/l	Max 2		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
14	Pb	APHA3030E &3111 B	mg/l	Max 0.1		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
15	Hg	APHA3030E &3112 B/ APHA 3125	mg/l	Max 0.01		0.002	0.004	<0.001	<0.001	0.001	0.001
16	Zn	APHA 3030E &3111 B	mg/l	Max 5		0.008	0.004	0.007	0.003	0.006	0.003
17	Ni	APHA 3030E &3111 B	mg/l	Max 1		0.003	0.003	<0.001	0.004	0.001	0.003
18	Cu	APHA 3030E &3111 B	mg/l	Max 1		0.005	0.002	0.002	0.005	<0.001	0.006
19	V	APHA3030E &3111 B&D	mg/l	Max 0.2		0.001	0.004	<0.001	<0.001	<0.001	0.001
20	Benzene	APHA 6200	mg/l	Max 0.1		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
21	Benzo(a)-pyrene	APHA 6440	mg/l	Max 0.2		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

Note: 1. Customer Information: Indian Oil Corporation Limited, Paradip Refinery, Production/HSE Department.

2. Sample details: Sample submitted by customer and received as such. Information provided with the sample may affect validity of results.

3. The results relate only to the samples submitted/ as received unless otherwise stated.

4. All tests/analyses performed at PDR Quality Control Laboratory as per applicable test methods, unless otherwise stated without any deviations to test method.

5. Customer confidential information shall be maintained as per customer agreement, if any.

6. This report shall not be produced except in full, without the written approval of Quality Control Laboratory, Paradip Refinery.

7. All test methods referred to in this certificate include a precision statement. The interpretation of results based on test method/ precision shall be used whenever applicable.

8. Laboratory Environmental Condition: 23±2 °C and 65 ± 10 %RH.

Dr. RC Sahu (QCM)

Annexure-9

Ground Water Quality Report



Indian Oil Corporation Limited
Paradip Refinery
Quality Control Laboratory



Source of sample: Ground Water: Secure Landfill (SLF), ETP				Method of collection: IS 3025 P-1				Report No: PDR/QC/Ground Water/2025-26/Q3-Q4			
Sample drawn by: Production/HSE				Date of Sample:				31.12.2025			
Date of Sample:				31.12.2025				28.03.2026			
S. No.	Parameters	Method	UOM	SLF-1	SLF-2	SLF-3	SLF-1	SLF-2	SLF-3		
1	pH (at 25°C)	APHA 4500 H ⁺ B	NA	6.7	6.6	7.0	8.5	7.8	8.2		
2	Oil and Grease	APHA 5520 D	mg/L	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0		
3	BOD 3 Days	IS 3025 (P-44)	mg/L	4	4	5	6	5	4		
4	COD	APHA 5220 B	mg/L	30	32	40	46	40	36		
5	Phenol	APHA 5530 B&D	mg/L	<0.001	<0.001	<0.001	0.04	0.03	0.02		
6	Sulphide	APHA 4500 S ²⁻ F	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		
7	Cyanide(CN ⁻)	APHA 4500 CN ⁻ C&D	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
8	Ammonical Nitrogen	APHA 4500 NH ₃ B&F	mg/L	0.16	0.21	0.32	0.90	0.91	0.41		
9	Amonia(NH3)		mg/L	0.20	0.25	0.26	0.74	1.10	0.50		
10	TKN	APHA4500 Norg B	mg/L	0.5	0.6	0.8	2.2	2.7	1.2		
11	Phosphate	APHA 4500 P D	mg/L	0.8	0.8	2.0	2.5	2.4	1.4		
12	Cr (VI)	APHA3500 Cr B	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		
13	Chromium (Cr)	APHA3030E & 3111B/ APHA 3125	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
14	Lead(Pb)		mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
15	Mercury(Hg)	APHA3112B/3125	mg/L	<0.001	<0.001	<0.001	<0.001	0.001	<0.001		
16	Znic(Zn)		mg/L	0.050	0.288	0.149	<0.001	0.025	0.049		
17	Nickel(Ni)	APHA 3030E & 3111B/ APHA 3125	mg/L	0.004	0.006	0.006	<0.001	<0.001	<0.001		
18	Copper(Cu)		mg/L	0.005	0.007	0.006	<0.001	0.002	0.002		
19	Vanadium(V)		mg/L	<0.001	<0.001	<0.001	<0.001	0.002	0.001		
20	Benzene in Water	APHA 6200	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		
21	Benzo Pyrene	APHA 6440	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		
22	Conductivity (at 25°C)	APHA 2510	µS/cm	1162	1172	2897	4890	4780	2980		
23	Total Hardness	APHA 2340	mg/L	121	125	300	525	504	294		
24	Turbidity	APHA 2130	NTU	0.4	1.2	3.2	8.6	4.1	2.7		
25	Alkalinity	APHA 2310	mg/L	34.4	30.6	76.4	133.2	88.8	99.9		

1. Customer Information: Indian Oil Corporation Limited, Paradip Refinery, Production/HSE Department.
2. Sample details: Sample submitted by customer and received as such. Information provided with the sample may affect validity of results.
3. The results relate only to the samples submitted/ as received unless otherwise stated.
4. All tests/analyses performed at PDR Quality Control Laboratory as per applicable test methods, unless otherwise stated without any deviations to test method.
5. Customer confidential information shall be maintained as per customer agreement, if any.
6. This report shall not be produced except in full, without the written approval of Quality Control Laboratory, Paradip Refinery.
7. All test methods referred to in this certificate include a precision statement. The interpretation of results based on test method/ precision shall be used whenever applicable.
8. Laboratory Environmental Condition: 23±2 °C and 65 ± 10 %RH.

Dr. RC Sahu (OCM)

Annexure-10

Occupational Health Report

Occupational Health

- a) Number of workers exposed beyond permissible limits of exposure of chemical and toxic substances specified in section 41-E (Second Schedule) of Factories Act 1948.

Unit/Installations with Location	Substance	Permissible limits of exposure as per Second Schedule (section 41-E) of Factories Act 1948		Number of workers exposed beyond permissible limit
		TWA (ppm, mg/m3)	STEL (ppm, mg/m3)	
-	H2S	10	15	NIL
	CO	35	400	NIL

Status of Periodic Medical Examination for workers exposed beyond permissible limits of chemical and toxic substances as mentioned above.

Number of workers for whom periodic medical examination planned during the year 2025-2026	Number of workers for whom periodic medical examination done during the quarter	% Overall Compliance
Units (Target annual)-372	3 rd & 4 th qtrs.	96.50%
Production-239	68	
P & U-72	05	
Mech. Maintenance-34	02	
Instrumentation-27	06	

- b) Number of workers exposed to sound levels beyond maximum exposure levels stipulated in the Factory Rules.

Unit/Installation with Location	Maximum exposure level stipulated in the Factory Rule	Number of workers exposed to sound levels beyond maximum exposure levels stipulated in Factory Rules.
Production P & U Mech. Maintenance Instrumentation	TWA-90dba STEL-115dba	NIL

- c) Status of Auditory Examination of the workers as identified above.

Number of workers for whom Auditory Examination planned during the year 2025-26 (3 rd & 4 th Quarter)	Number of workers for whom Auditory Examination done during the quarter	% Overall Compliance
P & U Mech. Maintenance	05 02	99.05%

- d) Notified disease as per Section 89 of Factories Act, 1948

Unit/Installation with location	Name of disease as per "Third Schedule" of Factories Act.	Number of workers identified	Date of intimation to the Factory Inspectorate
-	NIL	-	-

Occupational Health Physician

Dr. Ashok Kumar
 अतिरिक्त मुख्य चिकित्सा अधिकारी
 Additional Chief Medical Officer
 पारादीप रिफाइनरी (इंडियन ऑयल)
 Paradip Refinery (Indian Oil)
 पारादीप / Paradip - 754141 (Odisha)

Annexure-11

Marine Water Quality Report

Table: 26

Date: 26-11-2025

Ref: SV/IOCL-P/25-11/26

NAME AND ADDRESS

M/s. INDIAN OIL CORPORATION LIMITED,
Paradip Refinery Jhimani,
Jagatsinghipur District
Odisha-754141.

SAMPLE PARTICULARS

MARINE WATER

SOURCE OF COLLECTION

SOUTH OIL JETTY

SAMPLE COLLECTED BY

MUNARAJ SWAIN
(SV ENVIRO LABS & RESEARCH PVT LTD)

SAMPLE CODE

SV/25/7308 & 7309

DATE OF SAMPLING

18-11-2025

DATE OF SAMPLE RECEIVED AT LAB

20-11-2025

START DATE OF ANALYSIS

21-11-2025

END DATE OF ANALYSIS

25-11-2025

TEST REPORT

S.No	Parameter	Unit	Result		METHOD
			Surface	Bottom	
1.	pH	-	7.34	7.61	APHA, 4500-H+B
2.	Turbidity	NTU	9.0	15.0	APHA, 2130-B,
3.	Suspended Solids	mg/l	45.0	89.0	APHA, 2540-D,
4.	Colour	Hazen	3.2	7.4	APHA, 2120-C,
5.	Odour	-	Agreeable	Agreeable	APHA, 2150,
6.	Oil & Grease	mg/l	<1.0	<1.0	APHA 4500 N org B & F
7.	TOC	ppt	4.02	5.13	APHA, 5310-D
8.	BOD (3days at 27 ^o C)	mg/l	10.0	15.0	IS:3025 (Part-44)
9.	Dissolved oxygen	mg/l	5.8	4.4	APHA, 4500-C
10.	Phenolic Compounds as C ₆ H ₅ OH	mg/l	<0.005	<0.005	APHA 5530-C
11.	Sulphide (as S)	mg/l	<0.1	<0.1	APHA, 4500S2D
12.	Mercury as Hg	mg/l	<0.001	<0.001	APHA, 3120-B
13.	Lead as Pb	mg/l	<0.005	<0.005	APHA, 3120-B
14.	Cadmium as Cd	mg/l	<0.005	<0.005	APHA, 3120-B
15.	Zinc as Zn	mg/l	0.19	0.36	APHA, 3120-B
16.	Dissolved Iron	mg/l	0.46	0.58	APHA, 3120-B
17.	Dissolved Manganese	mg/l	0.04	0.13	APHA, 3120-B
18.	Floating Materials	mg/l	5.0	18.0	APHA, 2540-D
19.	Petroleum hydrocarbons	µg/l	0.48	0.60	APHA, 2540-D

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Table: 26

Ref: SV/IOCL-P/25-11/26

Date: 26-11-2025

NAME AND ADDRESS	:	M/s. INDIAN OIL CORPORATION LIMITED, Paradip Refinery Jhimani, Jagatsinghipur District Odisha-754141.
SAMPLE PARTICULARS	:	MARINE WATER
SOURCE OF COLLECTION	:	SOUTH OIL JETTY
SAMPLE COLLECTED BY	:	MUNARAJ SWAIN (SV ENVIRO LABS & RESEARCH PVT LTD)
SAMPLE CODE	:	SV/25/7308 & 7309
DATE OF SAMPLING	:	18-11-2025
DATE OF SAMPLE RECEIVED AT LAB	:	20-11-2025
START DATE OF ANALYSIS	:	21-11-2025
END DATE OF ANALYSIS	:	25-11-2025

TEST REPORT

S.No	Parameter	Unit	Result		METHOD
			Surface	Bottom	
1.	pH	-	7.34	7.61	APHA, 4500-H+B
2.	Turbidity	NTU	9.0	15.0	APHA, 2130-B,
3.	Suspended Solids	mg/l	45.0	89.0	APHA, 2540-D,
4.	Colour	Hazen	3.2	7.4	APHA, 2120-C,
5.	Odour	-	Agreeable	Agreeable	APHA, 2150,
6.	Oil & Grease	mg/l	<1.0	<1.0	APHA 4500 N org B & F
7.	TOC	ppt	4.02	5.13	APHA, 5310-D
8.	BOD (3days at 27 ^o C)	mg/l	10.0	15.0	IS:3025 (Part-44)
9.	Dissolved oxygen	mg/l	5.8	4.4	APHA, 4500-C
10.	Phenolic Compounds as C ₆ H ₅ OH	mg/l	<0.005	<0.005	APHA 5530-C
11.	Sulphide (as S)	mg/l	<0.1	<0.1	APHA, 4500S2D
12.	Mercury as Hg	mg/l	<0.001	<0.001	APHA, 3120-B
13.	Lead as Pb	mg/l	<0.005	<0.005	APHA, 3120-B
14.	Cadmium as Cd	mg/l	<0.005	<0.005	APHA, 3120-B
15.	Zinc as Zn	mg/l	0.19	0.36	APHA, 3120-B
16.	Dissolved Iron	mg/l	0.46	0.58	APHA, 3120-B
17.	Dissolved Manganese	mg/l	0.04	0.13	APHA, 3120-B
18.	Floating Materials	mg/l	5.0	18.0	APHA, 2540-D
19.	Petroleum hydrocarbons	µg/l	0.48	0.60	IS:3025 (Part-44)

SV ENVIRO LABS & RESEARCH PVT LTD
VSP-12
AUTHORIZED SIGNATORY

Ref: SV/IOCL-P/25-11/27

Date: 26-11-2025

NAME AND ADDRESS : M/s. INDIAN OIL CORPORATION LIMITED,
Paradip Refinery Jhimani,
Jagatsinghipur District
Odisha-754141.

SAMPLE PARTICULARS : MARINE WATER

SOURCE OF COLLECTION : 3KMS INSIDE SEA FROM THE LTL

SAMPLE COLLECTED BY : MUNARAJ SWAIN
(SV ENVIRO LABS & RESEARCH PVT LTD)

SAMPLE CODE : SV/25/7310 & 7311

DATE OF SAMPLING : 18-11-2025

DATE OF SAMPLE RECEIVED AT LAB : 20-11-2025

START DATE OF ANALYSIS : 21-11-2025

END DATE OF ANALYSIS : 25-11-2025

TEST REPORT

S.No	Parameter	Unit	Result		METHOD
			Surface	Bottom	
1.	pH	-	7.41	7.61	APHA, 4500-H+B
2.	Turbidity	NTU	9.0	18.0	APHA, 2130-B,
3.	Suspended Solids	mg/l	120	150	APHA, 2540-D,
4.	Colour	Hazen	5.0	7.0	APHA, 2120-C,
5.	Odour	-	Agreeable	Agreeable	APHA, 2150,
6.	Oil & Grease	mg/l	<1.0	<1.0	APHA 4500 N org B & F
7.	TOC	ppt	6.11	7.52	APHA, 5310-D
8.	BOD (3days at 27°C)	mg/l	14.0	19.0	IS:3025 (Part-44)
9.	Dissolved oxygen	mg/l	5.6	3.7	APHA, 4500-C
10.	Phenolic Compounds as C ₆ H ₅ OH	mg/l	<0.005	<0.005	APHA 5530-C
11.	Sulphide (as S)	mg/l	<0.1	<0.1	APHA, 4500S2D
12.	Mercury as Hg	mg/l	<0.001	<0.001	APHA, 3120-B
13.	Lead as Pb	mg/l	<0.005	<0.005	APHA, 3120-B
14.	Cadmium as Cd	mg/l	<0.005	<0.005	APHA, 3120-B
15.	Zinc as Zn	mg/l	0.41	0.61	APHA, 3120-B
16.	Dissolved Iron	mg/l	0.80	1.02	APHA, 3120-B
17.	Dissolved Manganese	mg/l	0.24	0.35	APHA, 3120-B
18.	Floating Materials	mg/l	11.0	26.0	APHA, 2540-D
19.	Petroleum hydrocarbons	µg/l	0.67	0.72	USEPA 3510 C & 8100

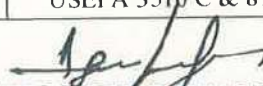

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Table: 27

SOURCE OF COLLECTION

:

SOUTH OIL JETTY

Biological Parameters					
S.No	PARAMETERS	UNITS	RESULTS		METHODS
			Surface	Bottom	
1	Primary Productivity	mg C/m ³ /hr	6.76	6.65	APHA 10300 D
2	Total Biomass	ml /100m ³	8.14	8.48	APHA 10200 I
3	Fecal Coliforms	MPN/100ml	130	90	IS 1622

Table: 28

SOURCE OF COLLECTION

:

3KMS INSIDE SEA FROM THE LTL

Biological Parameters					
S.No	PARAMETERS	UNITS	RESULTS		METHODS
			Surface	Bottom	
1	Primary Productivity	mg C/m ³ /hr	6.46	6.32	APHA 10300 D
2	Total Biomass	ml /100m ³	9.30	9.61	APHA 10200 I
3	Fecal Coliforms	MPN/100ml	120	70	IS 1622

Table: 29

SOURCE OF COLLECTION : SOUTH OIL JETTY

S.No	SPECIES	UNITS	ZOOPLANKTON		METHODS
			RESULTS		
			Surface	Bottom	
Group : Decapoda					APHA 24 th Edition 10200 G
1	Brachyuran larvae	nos/ltr	636	805	
2	Zoea larvae	nos/ltr	896	1920	
3	Schizopod larvae	nos/ltr	-	-	
4.	Protozoa of A.indicus	nos/ltr	92	172	
5.	Post larvae of P.indicus	nos/ltr	-	-	
6.	A. caridean	nos/ltr	04	15	
Group :Copepod					
7	Copepods	nos/ltr	49580	54720	
Group :Cumaceae					
8	Cumaceae	nos/ltr	95	124	
Group :Sergestidae					
9	Lucifer Sps.	nos/ltr	145	492	
10	Isopoda	nos/ltr	28	42	
11	Euphausiadae (furcilla)	nos/ltr	-	-	
12	Nematoda	nos/ltr	84	131	
13	Fish egg	nos/ltr	374	458	
14	Phyllosoma larvae	nos/ltr	35	125	
15	Bippinaria larvae	nos/ltr	-	-	
16	Actinotrocha larvae	nos/ltr	-	-	
17	Polychaeta's	nos/ltr	245	491	
18	Echinoderm larvae	nos/ltr	1165	1875	
19	Mysids	nos/ltr	392	650	
20	Gastropod larvae	nos/ltr	75	124	




Table: 30

SOURCE OF COLLECTION

3KMS INSIDE SEA FROM THE LTL

S.No	SPECIES	UNITS	ZOOPLANKTON		METHODS
			RESULTS		
			Surface	Bottom	
Group : Decapoda					APHA 24 th Edition 10200 G
1	Brachyuran larvae	nos/ltr	1024	1264	
2	Zoea larvae	nos/ltr	2910	3240	
3	Schizopod larvae	nos/ltr	-	-	
4.	Protozoa of A.indicus	nos/ltr	130	240	
5.	Post larvae of P.indicus	nos/ltr	-	-	
6.	A. caridean	nos/ltr	11	53	
Group :Copepod					
7	Copepods	nos/ltr	60110	66890	
Group :Cumaceae					
8	Cumaceae	nos/ltr	211	424	
Group :Sergestidae					
9	Lucifer Sps.	nos/ltr	686	762	
10	Isopoda	nos/ltr	35	57	
11	Euphausiadae (furcilla)	nos/ltr	-	-	
12	Nematoda	nos/ltr	130	214	
13	Fish egg	nos/ltr	240	332	
14	Phyllosoma larvae	nos/ltr	115	142	
15	Bippinaria larvae	nos/ltr	-	-	
16	Actinotrocha larvae	nos/ltr	-	-	
17	Polychaeta's	nos/ltr	790	1262	
18	Echinoderm larvae	nos/ltr	2070	2532	
19	Mysids	nos/ltr	910	1350	
20	Gastropod larvae	nos/ltr	40	84	


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 VSP-12


Table: 31

SOURCE OF COLLECTION

SOUTH OIL JETTY

S.No	SPECIES	UNITS	PHYTOPLANKTON		METHODS
			RESULTS		
			Surface	Bottom	
Group : Bacillariophyta					APHA 24 th Edition 10200 F
1	Bacteriastrium Varians	nos/ml	33	62	
2	Chaetoceros Didymus	nos/ml	34	75	
3	Chaetoceros Decipiens	nos/ml	16	22	
4	BiddulphiaMobiliensis	nos/ml	28	46	
5	Ditylumbrightwellii	nos/ml	Nil	Nil	
6	Gyrosigmasp	nos/ml	07	13	
7	Cladophyllsp	nos/ml	Nil	Nil	
8	Coscinodiscuscentralis	nos/ml	24	40	
9	Coscinodiscusgranii	nos/ml	29	41	
10	Cylcotellasp	nos/ml	Nil	Nil	
11	Hemidiscushardmanianus	nos/ml	53	82	
12	Lauderiaannulata	nos/ml	35	45	
13	Pyrophacushorologium	nos/ml	Nil	Nil	
14	Pleurosigmaangulatum	nos/ml	Nil	Nil	
15	Leptocylindrusdanicus	nos/ml	21	06	
16	Guinardiaflaccida	nos/ml	Nil	Nil	
17	Rhizosoleniaalata	nos/ml	18	46	
18	Rhizosoleniaimbricata	nos/ml	Nil	Nil	
19	Rhizosoleniasemispina	nos/ml	39	72	
20	Thalassionemanitzschioides	nos/ml	26	41	
21	Triceratiumreticulatum	nos/ml	Nil	Nil	
Group : Dinophyceae					
22	Ceratiumtrichoceros	nos/ml	06	14	
23	Ceratiumfurca	nos/ml	24	63	
24	Ceratiummacroceros	nos/ml	07	23	
25	Ceraciumlongipes	nos/ml	05	12	
Group : Golden Algae (.....Chrysophyta)					
26	Distephenus speculum	nos/ml	21	32	
Group : Blue Green Algae(Cyanophyta)					
27	Trichodesmiumerythraeum	nos/ml	18	42	

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Table: 32

SOURCE OF COLLECTION

3KMS INSIDE SEA FROM THE LTL

S.No	SPECIES	UNITS	PHYTOPLANKTON		METHODS
			RESULTS		
			Surface	Bottom	
Group : Bacillariophyta					APHA 24 th Edition 10200 F
1	Bacteriastrum Varians	nos/ml	58	81	
2	Chaetoceros Didymus	nos/ml	65	55	
3	Chaetoceros Decipiens	nos/ml	31	59	
4	BiddulphiaMobiliensis	nos/ml	42	62	
5	Ditylumbrightwellii	nos/ml	Nil	Nil	
6	Gyrosigmasp	nos/ml	15	21	
7	Cladophyllsp	nos/ml	Nil	Nil	
8	Coscinodiscuscentralis	nos/ml	32	49	
9	Coscinodiscusgranii	nos/ml	45	63	
10	Cylcotellasp	nos/ml	Nil	Nil	
11	Hemidiscushardmanianus	nos/ml	66	83	
12	Lauderiaannulata	nos/ml	27	38	
13	Pyrophacushorologium	nos/ml	Nil	Nil	
14	Pleurosigmaangulatum	nos/ml	Nil	Nil	
15	Leptocylindrusdanicus	nos/ml	19	35	
16	Guinardiaflaccida	nos/ml	Nil	Nil	
17	Rhizosoleniaalata	nos/ml	29	52	
18	Rhizosoleniaimbricata	nos/ml	Nil	Nil	
19	Rhizosoleniasemispina	nos/ml	61	75	
20	Thalassionemanitzschoides	nos/ml	31	55	
21	Triceratiumreticulatum	nos/ml	Nil	Nil	
Group : Dinophyceae					
22	Ceratiumtrichoceros	nos/ml	21	35	
23	Ceratiumfurca	nos/ml	43	66	
24	Ceratiummacroceros	nos/ml	13	18	
25	Ceraciumlongipes	nos/ml	12	15	
Group : Golden Algae (.....Chrysophyta)					
26	Distephenus speculum	nos/ml	23	34	
Group : Blue Green Algae(Cyanophyta)					
27	Trichodesmiumerythraeum	nos/ml	35	49	

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 VISAKHAPATNAM
 15/08/2012
 AUTHORIZED SIGNATORY

Table: 33

SOURCE OF COLLECTION : SOUTH OIL JETTY

S.No	PARAMETER	UNITS	SEDIMENT RESULTS		METHODS
			Surface	Bottom	
1	Sand	%	67	73	SV/Lab/SOP/S&S-005
2	Silt	%	29	24	
3	Clay	%	4	3	

Table: 34

SOURCE OF COLLECTION : 3KMS INSIDE SEA FROM THE LTL

S.No	PARAMETER	UNITS	SEDIMENT RESULTS		METHODS
			Surface	Bottom	
1	Sand	%	55	61	SV/Lab/SOP/S&S-005
2	Silt	%	34	27	
3	Clay	%	11	12	

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V&P-02
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TEST REPORT

Name of the Customer: M/s. INDIAN OIL CORPORATION LIMITED, Paradip Refinery Jhimani, Jagatsinghipur District, Odisha – 754141.	Test Report No	SV/IOCL/26/104
	Sample Registration No	SV/26/01/WAT/233
	Date of Sampling	30.01.2026
	Date of Receipt	31.01.2026
	Start Date of Analysis	02.02.2026
Discipline: Chemical	End Date of Analysis	06.02.2026
Group: Water	Issue Date	11.02.2026
Product: Marine Water	Sample Condition when received	Found OK
Qty: 5 ltrs 2 No's	Source of Collection	South Oil Jetty
Packing: Sealed Plastic Bottles	Sample Collected by	Mr. Munaraj Swain (SV)

Sample Tested As Received Basis

S.No	Parameter	Unit	Result		METHOD
			Surface	Bottom	
1.	pH	-	7.21	7.45	APHA, 4500-H+B, 24 th Ed., 2023
2.	Turbidity	NTU	7.0	12.0	APHA, 2130-B, 24 th Ed., 2023
3.	Temperature	°C	27.9	27.5	APHA, 2550 – B, 24 th Ed., 2023
4.	Suspended Solids	mg/l	32.0	74.0	APHA, 2540-D, 24 th Ed., 2023
5.	Colour	Hazen	2.8	6.0	APHA, 2120-C, 24 th Ed., 2023
6.	Odour	-	Agreeable	Agreeable	APHA, 2150, 24 th Ed., 2023
7.	Oil & Grease	mg/l	<1.0	<1.0	APHA 4500 N org B & F 24 th Ed. 2023
8.	TOC	ppt	3.65	4.78	APHA, 5310-D, 24 th Ed., 2023
9.	BOD (3days at 27 ^o C)	mg/l	<10.0	10.0	IS:3025 (Part-44)
10.	Dissolved oxygen	mg/l	6.0	4.6	APHA, 4500-C, 24 th Ed., 2023,
11.	Phenolic Compounds as	mg/l	<0.005	<0.005	APHA 5530-C, 24 th Ed., 2023
12.	Sulphide (as S)	mg/l	<0.1	<0.1	APHA, 4500S2D, 24 th Ed., 2023
13.	Mercury as Hg	mg/l	<0.001	<0.001	APHA, 3120-B, 24 th Ed., 2023
14.	Lead as Pb	mg/l	<0.005	<0.005	APHA, 3120-B, 24 th Ed., 2023
15.	Cadmium as Cd	mg/l	<0.005	<0.005	APHA, 3120-B, 24 th Ed., 2023
16.	Iron	mg/l	0.39	0.46	APHA, 3120-B, 24 th Ed., 2023
17.	Manganese	mg/l	0.02	0.10	APHA, 3120-B, 24 th Ed., 2023
18.	Floating Materials	mg/l	4.0	15.0	APHA, 2540-D, 24 th Ed., 2023

Page No: 1 of 5



**TEST REPORT**

Name of the Customer: M/s. INDIAN OIL CORPORATION LIMITED, Paradip Refinery Jhimani, Jagatsinghipur District, Odisha – 754141.	Test Report No	SV/IOCL/26/104
	Sample Registration No	SV/26/01/WAT/233
	Date of Sampling	30.01.2026
	Date of Receipt	31.01.2026
	Start Date of Analysis	02.02.2026
Discipline: Chemical	End Date of Analysis	06.02.2026
Group: Water	Issue Date	11.02.2026
Product: Marine Water	Sample Condition when received	Found OK
Qty: 5 ltrs 2 No's	Source of Collection	South Oil Jetty
Packing: Sealed Plastic Bottles	Sample Collected by	Mr. Munaraj Swain (SV)

Disclaimer:

1. Interpretation of Results: Nil; Deviation from test Method and Conditions: Nil.
2. Results are applicable only to the Submitted sample.
3. Sampling was done by laboratory.
4. The test document cannot be reproduced in any way, except in content, without the prior approval in writing of the laboratory
5. Technical Manager has authorized and maintained record for the verification test method. analysis of the results & if any statement of conformity and interpretation before releasing the tests Report
6. The retention period of the sample is 15 days from receipt unless otherwise specified by the client


Verified by
K. Srinivas
(Sr. Chemist)



End of report


Authorized Signatory
B. Ravi Prasad
(Lab Incharge)





TEST REPORT

Name of the Customer: M/s. INDIAN OIL CORPORATION LIMITED, Paradip Refinery Jhimani, Jagatsinghipur District, Odisha – 754141.	Test Report No	SV/IOCL/26/104
	Sample Registration No	SV/26/01/WAT/233
	Date of Sampling	30.01.2026
	Date of Receipt	31.01.2026
	Start Date of Analysis	02.02.2026
	End Date of Analysis	09.02.2026
Discipline: Biological	Issue Date	11.02.2026
Group: Water	Sample Condition when received	Found OK
Product: Marine Water	Source of Collection	South Oil Jetty
Qty: 10 Ltr	Sample Collected by	Mr. Munaraj Swain (SV)
Packing: Sealed Carboy bottle		

S.No	Parameter	Unit	Result		METHOD
			Surface	Bottom	
Biological Parameters					
1.	Primary Productivity	mg C/m³/hr	6.82	6.38	APHA 10300 D
2.	Total Biomass	ml /100m³	8.43	8.54	APHA 10200 I
3.	Fecal Coliforms	MPN/100ml	140	80	IS 1622

S.No	SPECIES	UNITS	ZOOPLANKTON		METHODS
			RESULTS		
			Surface	Bottom	
Group : Decapoda					APHA 24 th Edition 10200 G
1	Brachyuran larvae	nos/ltr	639	810	
2	Zoea larvae	nos/ltr	892	1910	
3	Schizopod larvae	nos/ltr	-	-	
4.	Protozoa of A.indicus	nos/ltr	90	169	
5.	Post larvae of P.indicus	nos/ltr	-	-	
6.	A. caridean	nos/ltr	03	12	
Group :Copepod					
7.	Copepods	nos/ltr	49568	54708	
Group :Cumaceae					
8.	Cumaceae	nos/ltr	93	127	
Group :Sergestidae					
9.	Lucifer Sps.	nos/ltr	148	497	
10.	Isopoda	nos/ltr	30	45	
11.	Euphausiadae (furcilla)	nos/ltr	-	-	
12.	Nematoda	nos/ltr	86	134	
13.	Fish egg	nos/ltr	379	462	
14.	Phyllosoma larvae	nos/ltr	38	128	
15.	Bippinaria larvae	nos/ltr	-	-	
16.	Actinotrocha larvae	nos/ltr	-	-	
17.	Polychaeta's	nos/ltr	247	493	
18.	Echinoderm larvae	nos/ltr	1169	1880	
19.	Mysids	nos/ltr	394	652	
20.	Gastropod larvae	nos/ltr	77	127	





TEST REPORT

Name of the Customer:	Test Report No	SV/IOCL/26/104
M/s. INDIAN OIL CORPORATION LIMITED,	Sample Registration No	SV/26/01/WAT/233
Paradip Refinery Jhimani, Jagatsinghipur	Date of Sampling	30.01.2026
District, Odisha – 754141.	Date of Receipt	31.01.2026
	Start Date of Analysis	02.02.2026
Discipline: Biological	End Date of Analysis	09.02.2026
Group: Water	Issue Date	11.02.2026
Product: Marine Water	Sample Condition when received	Found OK
Qty: 10 Ltr	Source of Collection	South Oil Jetty
Packing: Sealed Carboy bottle	Sample Collected by	Mr. Munaraj Swain (SV)

S.No	SPECIES	UNITS	PHYTOPLANKTON		METHODS
			RESULTS		
			Surface	Bottom	
Group : Bacillariophyta					APHA 24 th Edition 10200 F
1.	Bacteriastrum Varians	nos/ml	34	64	
2.	Chaetoceros Didymus	nos/ml	36	77	
3.	Chaetoceros Decipiens	nos/ml	17	24	
4.	BiddulphiaMobiliensis	nos/ml	30	47	
5.	Ditylumbrightwellii	nos/ml	Nil	Nil	
6.	Gyrosigma sp	nos/ml	08	15	
7.	Cladophyll sp	nos/ml	Nil	Nil	
8.	Coscinodiscuscentralis	nos/ml	26	42	
9.	Coscinodiscusgranii	nos/ml	30	43	
10.	Cylcotellasp	nos/ml	Nil	Nil	
11.	Hemidiscushardmanianus	nos/ml	54	84	
12.	Lauderiaannulata	nos/ml	37	47	
13.	Pyrophacushorologium	nos/ml	Nil	Nil	
14.	Pleurosigmaangulatum	nos/ml	Nil	Nil	
15.	Leptocylindrudanicus	nos/ml	23	08	
16.	Guinardiaflaccida	nos/ml	Nil	Nil	
17.	Rhizosoleniaalata	nos/ml	20	47	
18.	Rhizosoleniaimbricata	nos/ml	Nil	Nil	
19.	Rhizosoleniasemispina	nos/ml	40	74	
20.	Thalassionemanitzschioides	nos/ml	28	43	
21.	Triceratiumreticulatum	nos/ml	Nil	Nil	
Group : Dinophyceae					
22.	Ceratiumtrichoceros	nos/ml	08	16	
23.	Ceratiumfurca	nos/ml	26	65	
24.	Ceratiummacroceros	nos/ml	08	24	
25.	Ceraciumlongipes	nos/ml	06	13	
Group : Golden Algae (Chrysophyta)					
26.	Distephenus speculum	nos/ml	22	34	
Group : Blue Green Algae(Cyanophyta)					
27.	Trichodesmiumerythraeum	nos/ml	20	44	





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TEST REPORT

Name of the Customer:	Test Report No	SV/IOCL/26/104
M/s. INDIAN OIL CORPORATION LIMITED,	Sample Registration No	SV/26/01/WAT/233
Paradip Refinery Jhimani, Jagatsinghipur	Date of Sampling	30.01.2026
District, Odisha - 754141.	Date of Receipt	31.01.2026
	Start Date of Analysis	02.02.2026
Discipline: Biological	End Date of Analysis	09.02.2026
Group: Water	Issue Date	11.02.2026
Product: Marine Water	Sample Condition when received	Found OK
Qty: 500 ml	Source of Collection	South Oil Jetty
Packing: Sealed Carboy bottle	Sample Collected by	Mr. Munaraj Swain (SV)

S.No	BENTHOS SPECIES	UNITS	RESULTS
Organisms			
I. Nematoda			
1	Oncholaimussp	nos/m ²	47
2	Tricomasp	nos/m ²	35
II. Foraminifera			
1	Ammoniaebecarii	nos/m ²	17
2	Quinquinasp	nos/m ²	13
3	Discorbinellasp	nos/m ²	32
4	Bolivinaspathulata	nos/m ²	23
5	Elphidiumsp	nos/m ²	14
6	Noniondepressula	nos/m ²	19
III. Molluscs-Bivalvia			
1	Meretrixveligers	nos/m ²	30
2	Anadoraveligers	nos/m ²	19
	Total No. of individuals	nos/m²	249

Disclaimer:

1. Interpretation of Results: Nil; Deviation from test Method and Conditions: Nil.
2. Results are applicable only to the Submitted sample.
3. Sampling was done by laboratory.
4. The test document cannot be reproduced in any way, except in content, without the prior approval in writing of the laboratory
5. Technical Manager has authorized and maintained record for the verification test method, analysis of the results & if any statement of conformity and interpretation before releasing the tests Report
6. The retention period of the sample is 15 days from receipt unless otherwise specified by the client


Verified by
P. Upendra
(Microbiologist)



End of report


Authorized Signatory
A. Sam Prasanth
(Sr. Microbiologist)

Page No: 5 of 5

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PAN: ABQCS0643F
CIN: U74909AP2025PTC119098





TEST REPORT

Name of the Customer: M/s. INDIAN OIL CORPORATION LIMITED, Paradip Refinery Jhimani, Jagatsinghipur District, Odisha – 754141.	Test Report No	SV/IOCL/26/105
	Sample Registration No	SV/26/01/WAT/234
	Date of Sampling	30.01.2026
	Date of Receipt	31.01.2026
	Start Date of Analysis	02.02.2026
Discipline: Chemical	End Date of Analysis	06.02.2026
Group: Water	Issue Date	11.02.2026
Product: Marine Water	Sample Condition when received	Found OK
Qty: 5 ltrs 2 No's	Source of Collection	3KMS Inside Sea From the LTL
Packing: Sealed Plastic Bottles	Sample Collected by	Mr. Munaraj Swain (SV)

Sample Tested As Received Basis

S.No	Parameter	Unit	Result		METHOD
			Surface	Bottom	
1.	pH	-	7.33	7.50	APHA, 4500-H+B, 24 th Ed., 2023
2.	Turbidity	NTU	7.0	15.0	APHA, 2130-B, 24 th Ed., 2023
3.	Temperature		27.6	27.3	APHA, 2550 - B, 24 th Ed., 2023
4.	Suspended Solids	mg/l	110	134	APHA, 2540-D, 24 th Ed., 2023
5.	Colour	Hazen	4.0	6.0	APHA, 2120-C, 24 th Ed., 2023
6.	Odour	-	Agreeable	Agreeable	APHA, 2150, 24 th Ed., 2023
7.	Oil & Grease	mg/l	<1.0	<1.0	APHA 4500 N org B & F 24 th Ed., 2023
8.	TOC	ppt	6.02	7.28	APHA, 5310-D, 24 th Ed., 2023
9.	BOD (3days at 27 ^o C)	mg/l	10.0	14.0	IS:3025 (Part-44)
10.	Dissolved oxygen	mg/l	5.8	4.0	APHA, 4500-C, 24 th Ed., 2023,
11.	Phenolic Compounds as	mg/l	<0.005	<0.005	APHA 5530-C, 24 th Ed., 2023
12.	Sulphide (as S)	mg/l	<0.1	<0.1	APHA, 4500S2D, 24 th Ed., 2023
13.	Mercury as Hg	mg/l	<0.001	<0.001	APHA, 3120-B, 24 th Ed., 2023
14.	Lead as Pb	mg/l	<0.005	<0.005	APHA, 3120-B, 24 th Ed., 2023
15.	Cadmium as Cd	mg/l	<0.005	<0.005	APHA, 3120-B, 24 th Ed., 2023
16.	Iron	mg/l	0.76	0.87	APHA, 3120-B, 24 th Ed., 2023
17.	Manganese	mg/l	0.24	0.35	APHA, 3120-B, 24 th Ed., 2023
18.	Floating Materials	mg/l	10.0	24.0	APHA, 2540-D, 24 th Ed., 2023



**TEST REPORT**

Name of the Customer: M/s. INDIAN OIL CORPORATION LIMITED, Paradip Refinery Jhimani, Jagatsinghipur District, Odisha – 754141.	Test Report No	SV/IOCL/26/105
	Sample Registration No	SV/26/01/WAT/234
	Date of Sampling	30.01.2026
	Date of Receipt	31.01.2026
	Start Date of Analysis	02.02.2026
Discipline: Chemical	End Date of Analysis	06.02.2026
Group: Water	Issue Date	11.02.2026
Product: Marine Water	Sample Condition when received	Found OK
Qty: 5 ltrs 2 No's	Source of Collection	3KMS Inside Sea From the LTL
Packing: Sealed Plastic Bottles	Sample Collected by	Mr. Munaraj Swain (SV)

Disclaimer:

1. Interpretation of Results: Nil; Deviation from test Method and Conditions: Nil.
2. Results are applicable only to the Submitted sample.
3. Sampling was done by laboratory.
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5. Technical Manager has authorized and maintained record for the verification test method, analysis of the results & if any statement of conformity and interpretation before releasing the tests Report
6. The retention period of the sample is 15 days from receipt unless otherwise specified by the client


Verified by
K. Srinivas
(Sr. Chemist)




Authorized Signatory
B. Ravi Prasad
(Lab Incharge)

*****End of report*****



TEST REPORT

Name of the Customer: M/s. INDIAN OIL CORPORATION LIMITED, Paradip Refinery Jhimani, Jagatsinghipur District, Odisha – 754141.	Test Report No	SV/IOCL/26/105
	Sample Registration No	SV/26/01/WAT/234
	Date of Sampling	30.01.2026
	Date of Receipt	31.01.2026
	Start Date of Analysis	02.02.2026
Discipline: Biological	End Date of Analysis	09.02.2026
Group: Water	Issue Date	11.02.2026
Product: Marine Water	Sample Condition when received	Found OK
Qty: 10 Ltr	Source of Collection	3KMS Inside Sea From the LTL
Packing: Sealed Carboy bottle	Sample Collected by	Mr. Munaraj Swain (SV)

S.No	Parameter	Unit	Result		METHOD
			Surface	Bottom	
Biological Parameters					
1.	Primary Productivity	mg C/m ³ /hr	6.38	6.25	APHA 10300 D
2.	Total Biomass	ml /100m ³	9.32	6.58	APHA 10200 I
3.	Fecal Coliforms	MPN/100ml	110	60	IS 1622

S.No	SPECIES	UNITS	ZOOPLANKTON		METHODS
			RESULTS		
			Surface	Bottom	
Group : Decapoda					APHA 24 th Edition 10200 G
1	Brachyuran larvae	nos/ltr	1032	1268	
2	Zoea larvae	nos/ltr	2915	3244	
3	Schizopod larvae	nos/ltr	-	-	
4	Protozoa of A.indicus	nos/ltr	133	243	
5	Post larvae of P.indicus	nos/ltr	-	-	
6	A. caridean	nos/ltr	13	55	
Group :Copepod					
7	Copepods	nos/ltr	60118	66896	
Group :Cumaceae					
8	Cumaceae	nos/ltr	214	427	
Group :Sergestidae					
9	Lucifer Sps.	nos/ltr	688	764	
10	Isopoda	nos/ltr	37	60	
11	Euphausiadae (furcilla)	nos/ltr	-	-	
12	Nematoda	nos/ltr	133	216	
13	Fish egg	nos/ltr	242	336	
14	Phyllosoma larvae	nos/ltr	117	145	
15	Bippinaria larvae	nos/ltr	-	-	
16	Actinotrocha larvae	nos/ltr	-	-	
17	Polychaeta's	nos/ltr	792	1266	
18	Echinoderm larvae	nos/ltr	2073	2535	
19	Mysids	nos/ltr	913	1354	
20	Gastropod larvae	nos/ltr	41	86	





TEST REPORT

Name of the Customer:	Test Report No	SV/IOCL/26/105
M/s. INDIAN OIL CORPORATION LIMITED,	Sample Registration No	SV/26/01/WAT/234
Paradip Refinery Jhimani, Jagatsinghipur	Date of Sampling	30.01.2026
District, Odisha – 754141.	Date of Receipt	31.01.2026
	Start Date of Analysis	02.02.2026
Discipline: Biological	End Date of Analysis	09.02.2026
Group: Water	Issue Date	11.02.2026
Product: Marine Water	Sample Condition when received	Found OK
Qty: 10 Ltr	Source of Collection	3KMS Inside Sea From the LFL
Packing: Sealed Carboy bottle	Sample Collected by	Mr. Munaraj Swain (SV)

S.No	SPECIES	UNITS	PHYTOPLANKTON		METHODS
			RESULTS		
			Surface	Bottom	
Group : Bacillariophyta					APHA 24 th Edition 10200 F
1.	Bacteriastrum Varians	nos/ml	59	83	
2.	Chaetoceros Didymus	nos/ml	67	56	
3.	Chaetoceros Decipiens	nos/ml	33	61	
4.	Biddulphia Mobiliensis	nos/ml	43	64	
5.	Ditylumbrightwellii	nos/ml	Nil	Nil	
6.	Gyrosigma sp	nos/ml	17	23	
7.	Cladophyll sp	nos/ml	Nil	Nil	
8.	Coscinodiscus centralis	nos/ml	33	51	
9.	Coscinodiscus granii	nos/ml	47	65	
10.	Cylcotella sp	nos/ml	Nil	Nil	
11.	Hemidiscus hardmanianus	nos/ml	68	85	
12.	Lauderia annulata	nos/ml	29	40	
13.	Pyrophacus horologium	nos/ml	Nil	Nil	
14.	Pleurosigma angulatum	nos/ml	Nil	Nil	
15.	Leptocylindrus danicus	nos/ml	20	36	
16.	Guinardia flaccida	nos/ml	Nil	Nil	
17.	Rhizosolenia alata	nos/ml	30	54	
18.	Rhizosolenia imbricata	nos/ml	Nil	Nil	
19.	Rhizosolenia semispina	nos/ml	63	77	
20.	Thalassionema nitzschioides	nos/ml	32	57	
21.	Triceratium reticulatum	nos/ml	Nil	Nil	
Group : Dinophyceae					
22.	Ceratium trichoceros	nos/ml	23	37	
23.	Ceratium furca	nos/ml	44	68	
24.	Ceratium macroceros	nos/ml	14	19	
25.	Ceratium longipes	nos/ml	13	17	
Group : Golden Algae (.....Chrysophyta)					
26.	Distephenus speculum	nos/ml	24	36	
Group : Blue Green Algae (Cyanophyta)					
27.	Trichodesmium erythraeum	nos/ml	37	51	





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Researching for better Environmental Solutions



TEST REPORT

Name of the Customer: M/s. INDIAN OIL CORPORATION LIMITED, Paradip Refinery Jhimani, Jagatsinghipur District, Odisha – 754141.	Test Report No	SV/IOCL/26/105
	Sample Registration No	SV/26/01/WAT/234
	Date of Sampling	30.01.2026
	Date of Receipt	31.01.2026
	Start Date of Analysis	02.02.2026
Discipline: Biological	End Date of Analysis	09.02.2026
Group: Water	Issue Date	11.02.2026
Product: Marine Water	Sample Condition when received	Found OK
Qty: 10 Ltr	Source of Collection	3KMS Inside Sea From the LTL
Packing: Sealed Carboy bottle	Sample Collected by	Mr. Munaraj Swain (SV)

S.No	BENTHOS SPECIES	UNITS	RESULTS
Organisms			
I. Nematoda			
1	Oncholaimussp	nos/m ²	51
2	Tricomasp	nos/m ²	39
II. Foraminifera			
1	Ammonia beccarii	nos/m ²	11
2	Quinquelina sp	nos/m ²	17
3	Discorbina sp	nos/m ²	34
4	Bolivina spathulata	nos/m ²	26
5	Elphidium sp	nos/m ²	18
6	Nonion depressula	nos/m ²	19
III. Molluscs-Bivalvia			
1	Meretrix veligers	nos/m ²	32
2	Anadara veligers	nos/m ²	19
	Total No. of individuals	nos/m²	266

Disclaimer:

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6. The retention period of the sample is 15 days from receipt unless otherwise specified by the client


 Verified by
P. Upendra
 (Microbiologist)



End of report


 Authorized Signatory
A. Sam Prasanth
 (Sr. Microbiologist)

Page No: 5 of 5

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CIN: U74909AP2025PTC119098



Annexure-12

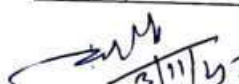
Noise Survey Report

NOISE MONITORING DATA OCTOBER 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
1	SRU	089 KM 1	15	115	95.3
		089 PM 003 B	15	115	97.1
		088 K 001	15	115	94.8
		087 V 001	15	115	87.7
		087 WHB 001	15	115	90.2
		087 Sulphur Pit	15	115	93.1
		087 E 003	15	115	88.4
		086 E 003	15	115	85.6
		086 K 001	15	115	102.3
		085 Pump	15	115	100.0
		84P01 A	15	115	83.5
		83P01 B	15	115	97.9
		087 K 001	15	115	103.7

NOISE MONITORING DATA OCTOBER 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
2	ETP	Aeration Blower	15	115	99.2
		230 Air Compressor	15	115	88.1
		231 Air Compressor	15	115	95.2

NOISE MONITORING DATA OCTOBER 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
3	DHDT	RGC AREA	15	115	94.6
		HCDS Compressor Area	15	115	90.8

NOISE MONITORING DATA OCTOBER 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
4	ROG-PSA	ROG COMPRESSOR AREA	15	115	98.5
		FG COMPRESSOR AREA	15	115	100.3


 Dr. Anil Kumar
 Occupational Health Physician
 Addl. Chief Medical Officer
 Paradip Refinery, Indian Oil
 Paradip, Odisha

Nibedita Nayak
 Industrial Hygienist
INDUSTRIAL HYGIENIST
VKPRMS HOSPITAL
 Paradip Refinery.

NOISE MONITORING DATA OCTOBER 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
5	VGO-HDT	RGC AREA	15	115	100.7
		Atmospheric Column bottom Pump P12 RESIDUE	15	115	88.5
		MHC Feed Pumps-020 P1 A/B	15	115	92.7
		Wash Water Pumps-020 P2 A/B	15	115	88.8
		VGO Wash Pumps- 020 P3 A/B	15	115	95.4
		HDT Feed Pumps-020 P16 A/B	15	115	97.2
		Atmospheric Column Furnace FD Fans-020 KM 2A	15	115	89.6
		HP Amine Pump-020 P19 B	15	115	87.3
		Atmospheric Column Furnace-020 F 001	15	115	97.6

NOISE MONITORING DATA OCTOBER 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
6	DCU	30 P45 B	15	115	83.5
		30 P7 A	15	115	91.8
		30 P13 A/B	15	115	90.2
		30 P1 A/B	15	115	88.4
		30 P11 A/B	15	115	93.7
		Compressor House GF	15	115	100.0
		30 C 008	15	115	84.8
		CHS Coke Yard	15	115	90.5
		RRLS Silo Building	15	115	85.3
		Bitumen Loading station	15	115	93.6
		72m CDS	15	115	88.5
		030-F-001	15	115	85.2
		030-F-002	15	115	86.7

NOISE MONITORING DATA OCTOBER 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
7	Alkylation-Butamer	24K001 COMPRESSOR	15	115	101.5
		24/P15/PV200	15	115	86.0
		24 P109 B	15	115	93.8
		24R101 Reactor Area	15	115	84.7
		DIOS AREA 24P1A	15	115	90.6
		Product pump area 24 P11A	15	115	92.3
		Butamer feed pump 25-P-1A	15	115	93.5

Occupational Health Physician

Dr. ASHOK KUMAR

अतिरिक्त मुख्य चिकित्सा अधिकारी

Additional Chief Medical Officer

(Signature)

(Date)

Nibedita Nayak
Industrial Hygienist

INDUSTRIAL HYGIENIST
VKPRMS HOSPITAL
Paradip Refinery.

NOISE MONITORING DATA OCTOBER 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
8	HGU	Compressor House	15	115	75.8
		057-K-003 A	15	115	74.0
		57-K-001 B	15	115	80.5
		P-06 A/B	15	115	89.3
		P-01 A/B	15	115	92.7
		H2 Product outlet control Val PV-1801	15	115	95.5
		PSA	15	115	96.0
		P-07 A/B	15	115	90.6
		Reformer Ground	15	115	93.4


 डॉ. अशोक कुमार
 Occupational Health Physician
 Dr. ASHOK KUMAR
 अतिरिक्त मुख्य चिकित्सा अधिकारी
 Additional Chief Medical Officer
 पारादीप रिफाइनरी (इंडियन ऑयल)
 Paradip Refinery (Indian Oil)
 पारादीप / Paradip - 754141 (Odisha)

Nibedita Nayak
 Industrial Hygienist
 INDUSTRIAL HYGIENIST
 VKPRMS HOSPITAL
 Paradip Refinery

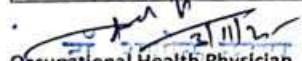
TOXIC GAS MONITORING DATA FOR MONTH OF OCTOBER 2025

SRU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.8
H2S(ppm)	15	10	0.3
CO(ppm)	100	35	0
VOC(ppm)	25	10	1.2

ETP			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.8
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	3.1

DCU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0.1
CO(ppm)	100	35	0
VOC(ppm)	25	10	1.0

DHDT			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	4.1


 Occupational Health Physician
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 Additional Chief Medical Officer
 (Refinery (Indian Oil))
 Paradip Refinery (Odisha)

Industrial Hygienist
Nibedita Nayak
INDUSTRIAL HYGIENIST
VKPRMS HOSPITAL
 Paradip Refinery

VGO-HDT			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	2.0

Alkylaton-Butamer			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0.1
CO(ppm)	100	35	0
VOC(ppm)	25	10	1.5


डॉ. अशीष कुमार
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Nibedita Nayak
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INDUSTRIAL HYGIENIST
VKPRMS HOSPITAL
Paradip Refinery.

NOISE MONITORING DATA NOV 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
1	AVU	P3 A/B	15	115	95.8
		P22 A/B	15	115	97.3
		P25 A/B	15	115	92.7
		KM 04 A/B	15	115	85.9
		P7 A/B	15	115	90.6
		P2 A/B	15	115	77.3
		Compressor House	15	115	85.4
		P13 A/B	15	115	86.9
		P10 A/B	15	115	97.2
		P30 A/B	15	115	98.3
		F 101	15	115	84.2
		F-002	15	115	83.6
		KM 01A/B	15	115	85.0
		P7 C	15	115	98.0

NOISE MONITORING DATA NOV 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
2	SRU	089 KM 1	15	115	97.6
		089 PM 003 B	15	115	94.3
		088 K 001	15	115	91.2
		087 V 001	15	115	85.6
		087 WHB 001	15	115	88.5
		087 Sulphur Pit	15	115	89.7
		087 E 003	15	115	86.7
		086 E 003	15	115	85.0
		086 K 001	15	115	102.3
		085 Pump	15	115	100.0
		84P01 A	15	115	84.5
		83P01 B	15	115	97.1
		087 K 001	15	115	100.2

NOISE MONITORING DATA NOV 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
3	ETP	Aeration Blower	15	115	99.2
		230 Air Compressor	15	115	89.1
		231 Air Compressor	15	115	95.2

Occupational Health Physician

डॉ. अमर कुमार

DR. AMAR KUMAR

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Industrial Hygienist

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NOISE MONITORING DATA NOV 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
4	DHDT	RGC AREA	15	115	85.2
		HCDS Compressor Area	15	115	92.2

NOISE MONITORING DATA NOV 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
5	ROG-PSA	ROG COMPRESSOR AREA	15	115	100.8
		FG COMPRESSOR AREA	15	115	101.2

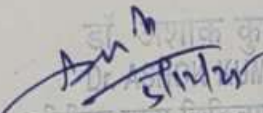
NOISE MONITORING DATA NOV 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
6	VGO-HDT	RGC AREA	15	115	98.3
		Atmospheric Column bottom Pump P12 RESIDUE	15	115	85.5
		MHC Feed Pumps-020 P1 A/B	15	115	93.4
		Wash Water Pumps-020 P2 A/B	15	115	89.2
		VGO Wash Pumps- 020 P3 A/B	15	115	91.8
		HDT Feed Pumps-020 P16 A/B	15	115	95.3
		Atmospheric Column Furnace FD Fans-020 KM 2A	15	115	84.1
		HP Amine Pump-020 P19 B	15	115	86.2
		Atmospheric Column Furnace-020 F 001	15	115	87.8

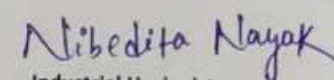
डॉ. अशोक कुमार
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NOISE MONITORING DATA NOV 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
7	DCU	30 P45 B	15	115	84.8
		30 P7 A	15	115	90.7
		30 P13 A/B	15	115	91.0
		30 P1 A/B	15	115	86.2
		30 P11 A/B	15	115	90.5
		Compressor House GF	15	115	99.4
		30 C 008	15	115	84.9
		CHS Coke Yard	15	115	82.1
		RRLS Silo Building	15	115	83.8
		Bitumen Loading station	15	115	90.2
		72m CDS	15	115	89.1
		030-F-001	15	115	87.5
		030-F-002	15	115	85.2

NOISE MONITORING DATA NOV 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
8	Polypropylene Area	72-KM-901 A/B/C	15	115	97.0
		73-KM-901 A/B/C	15	115	90.5
		72-KM-804 A/B	15	115	89.6
		72-KM-801 A/B	15	115	91.1
		73-KM-801 A/B	15	115	93.7
		73-KM-804 A/B	15	115	90.5
		72-KM-301	15	115	84.1
		73-KM-301	15	115	86.5
		71-KM-601	15	115	83.4
		Extruder Area ground floor	15	115	90.2
		Powder conveying comp. line-1	15	115	99.2
		Powder conveying comp. line-2	15	115	90.4
		Pellet conveying comp. Area	15	115	92.1
		Dryer blower Area in PP line-1	15	115	89.5
		Dryer blower Area in PP line-2	15	115	90.3


Anil Kumar
 Occupational Health Physician
 Additional Chief Medical Officer
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 Paradip Refinery

NOISE MONITORING DATA NOV 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
9	Alkylation-Butamer	24K001 COMPRESSOR	15	115	101.2
		24/P15/PV200	15	115	82.8
		24 P109 B	15	115	93.9
		24R101 Reactor Area	15	115	89.1
		DIOS AREA 24P1A	15	115	90.2
		Product pump area 24 P11A	15	115	92.0
		Butamer feed pump 25-P-1A	15	115	93.6

NOISE MONITORING DATA NOV 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
10	SARU	SARU Blower 28K05 Area	15	115	94.3
		SARU Strong Acid area 28P05	15	115	84.2
		SARU Weak Acid area 28P01	15	115	84.0

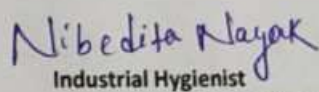
Occupational Health Physician

Industrial Hygienist

NOISE MONITORING DATA NOV 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
11	CPP	GT 1	15	115	94.8
		GT 3	15	115	96.2
		Boiler 2	15	115	88.6
		Pump House	15	115	92.3
		BFP Building	15	115	96.2
		CPP Building Entrance	15	115	80.3
		HRS 3	15	115	82.9
		HRS /FOPH cabin	15	115	61.5
		UB-1 & 2 Area	15	115	86.7
		New GIS (Outside)	15	115	84.5
		HHP Steam line spectacle blind Area	15	115	107.2
		UB-5 HHP Steam Header	15	115	82.8

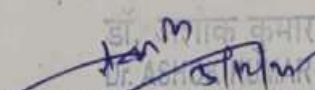
डॉ. अमोक्त कुमार

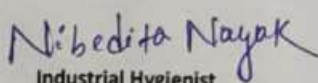
 ASHOK KUMAR
 Additional Chief Medical Officer
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Nibedita Nayak

 Industrial Hygienist
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Paradip Refinery.

NOISE MONITORING DATA NOV 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
12	FCCU	Reactor Reslor	15	115	98.4
		Near J-Bend & CKN CV (Coke Naphtha)	15	115	103.2
		Bottom Pump P 10A/B/C (A,C - Run)	15	115	100.8
		Furnace Area (Inline)	15	115	88.1
		ID Fan Area (Run)	15	115	80.3
		FD Fan Area (Run)	15	115	86.2
		023 P 14 (Run)	15	115	95.5
		023 P 18 (Run)	15	115	99.2
		023 P 02 Back of P18	15	115	92.8
		023 P 001 A (Run)	15	115	93.6
		023 P 28A (Run)	15	115	90.6
		V 10,11,13	15	115	87.5
		WGC KOD V12 Vessel GF	15	115	97.5
		WGC Compressor PF	15	115	100.7
		WGC Near Surface Condenser	15	115	107.6
		MAB GF NEAR Turbine Valve	15	115	105.9
		MAB PF (Compressor) Turning Gear	15	115	105.4
		PRT Turbine LO Pump	15	115	97.5
		PRT Expander Area	15	115	88.1
		Seal Air Blower 23-KM-2131A (Run)	15	115	103.1
		Flue Gas Cooler (23-FGC-001) Area	15	115	87.6

COMPRESSOR HOUSE NOISE MONITORING DATA NOV 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
13	UCR (U-122)	Dryer-1	15	115	109.7
		Dryer-3	15	115	109.5
		LP Compressor-C	15	115	94.3
		Operator cabin	15	115	65.5
		LP Compressor-A	15	115	90.2
		LP Compressor-E	15	115	94.1
		Air Compressor House Area	15	115	85.6


Dr. Ashok Kumar
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 Additional Chief Medical Officer
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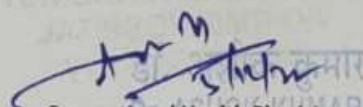
TOXIC GAS MONITORING DATA FOR MONTH OF NOV 2025

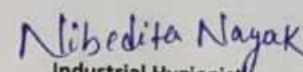
AVU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL (%)	N/A	N/A	0
OXY (%)	N/A	N/A	20.8
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0.3

SRU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.8
H2S(ppm)	15	10	1.0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0

ETP			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.8
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0.5

DCU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	1.4


Dr. Anil Kumar
 Occupational Health Physician
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DHD			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H ₂ S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0

VGO-HDT			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H ₂ S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	1.5

Alkylation-Butamer			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H ₂ S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	2.3

FCCU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H ₂ S(ppm)	15	10	1.0
CO(ppm)	100	35	0
VOC(ppm)	25	10	3.1

डॉ. शोभा कुमार
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Nibedita Nayak
 Industrial Hygienist
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 VKPRMS HOSPITAL
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NOISE MONITORING DATA DEC 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
1	AVU	P3 A/B	15	115	94.5
		P22 A/B	15	115	100.9
		P25 A/B	15	115	97.3
		KM 04 A/B	15	115	86.5
		P7 A/B	15	115	99.2
		P2 A/B	15	115	90.3
		Compressor House	15	115	84.5
		P13 A/B	15	115	90.7
		P10 A/B	15	115	97.0
		P30 A/B	15	115	98.5
		F 101	15	115	84.1
		F-002	15	115	83.3
		KM 01A/B	15	115	87.9
		P7 C	15	115	96.5

NOISE MONITORING DATA DEC 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
2	SRU	088 K 001	15	115	93.6
		087 V 001	15	115	85.4
		087 WHB 001	15	115	86.8
		087 Sulphur Pit	15	115	91.3
		087 E 003	15	115	88.1
		086 E 003	15	115	85.5
		086 K 001	15	115	103.4
		085 Pump	15	115	100.0
		84P01 A	15	115	84.5
		83P01 B	15	115	97.2
		087 K 001	15	115	104.6

NOISE MONITORING DATA DEC 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
3	SRU-III	90-KM-01	15	115	85.0
		88-V-01	15	115	86.3
		88-WHB-001	15	115	88.5
		U-88 Sulphur pit	15	115	89.2
		88-E-03	15	115	94.2

Occupational Health Physician

(Signature)
ASHOK KUMAR
 Medical Officer
 Chief Medical Officer
 Paradip Refinery (IndianOil)
 Paradip Refinery (IndianOil)

Industrial Hygienist

(Signature)
Nibedita Nayak
INDUSTRIAL HYGIENIST
VKPRMS HOSPITAL
Paradip Refinery.

NOISE MONITORING DATA DEC 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
4	ETP	Aeration Blower	15	115	96.8
		230 Air Compressor	15	115	87.2
		231 Air Compressor	15	115	103.0

NOISE MONITORING DATA DEC 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
5	DHDT	RGC AREA	15	115	84.9
		HCDS Compressor Area	15	115	96.8

NOISE MONITORING DATA DEC 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
6	ROG-PSA	ROG COMPRESSOR AREA	15	115	97.6
		FG COMPRESSOR AREA	15	115	98.5

NOISE MONITORING DATA DEC 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
7	VGO-HDT	RGC AREA	15	115	98.6
		Atmospheric Column bottom Pump P12 RESIDUE	15	115	86.9
		MHC Feed Pumps-020 P1 A/B	15	115	93.7
		Wash Water Pumps-020 P2 A/B	15	115	87.1
		VGO Wash Pumps- 020 P3 A/B	15	115	88.5
		HDT Feed Pumps-020 P16 A/B	15	115	96.7
		Atmospheric Column Furnace FD Fans-020 KM 2A	15	115	83.8
		HP Amine Pump-020 P19 B	15	115	88.3
		Atmospheric Column Furnace-020 F 001	15	115	81.6

Occupational Health Physician

Nibedita Nayak
INDUSTRIAL HYGIENIST
VKPRMS HOSPITAL
Boudha, P.O.

NOISE MONITORING DATA DEC 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
8	DCU	30 P45 B	15	115	88.5
		30 P7 A	15	115	92.6
		30 P13 A/B	15	115	90.1
		30 P1 A/B	15	115	87.4
		30 P11 A/B	15	115	91.3
		Compressor House GF	15	115	100.5
		30 C 008	15	115	81.9
		CHS Coke Yard	15	115	90.2
		RRLS Silo Building	15	115	82.3
		Bitumen Loading station	15	115	90.5
		72m CDS	15	115	88.1
		030-F-001	15	115	87.5
		030-F-002	15	115	85.3

NOISE MONITORING DATA DEC 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
9	Alkylation_ Butamer	24K001 COMPRESSOR	15	115	101.1
		24/P15/PV200	15	115	82.6
		24 P109 B	15	115	92.6
		24R101 Reactor Area	15	115	89.5
		DIOS AREA 24P1A	15	115	90.1
		Product pump area 24 P11A	15	115	89.2
		Butamer feed pump 25-P-1A	15	115	92.3

NOISE MONITORING DATA DEC 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
10	SARU	SARU Blower 28K05 Area	15	115	95.5
		SARU Strong Acid area 28P05	15	115	84.1
		SARU Weak Acid area 28P01	15	115	84.3


Dr. Anil Kumar
 Occupational Health Physician
 Additional Chief Medical Officer
 Paradip Refinery (IndianOil)
 Paradip - 754141 (Odisha)


Nibedita Nayak
 Industrial Hygienist
 VKPRMS HOSPITAL
 Paradip Refinery.

COMPRESSOR HOUSE NOISE MONITORING DATA DEC 2025					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per OISD	Readings in dBA
11	UCR (U-122)	Dryer-1	15	115	108.3
		Dryer-3	15	115	109.5
		LP Compressor-C	15	115	92.3
		Operator cabin	15	115	65.2
		LP Compressor-A	15	115	91.2
		LP Compressor-E	15	115	95.4
		Air Compressor House Area	15	115	85.7

Anu M
6/11/26
Occupational Health Physician

Dr. ANHOK KUMAR
Medical Officer
पारादीप रिफाइनरी (इंडियन ऑइल)
Paradip Refinery (Indian Oil)
पारादीप / Paradip - 754141 (Odisha)

Nibedita Nayak
Industrial Hygienist
INDUSTRIAL HYGIENIST
VKPRMS HOSPITAL
Paradip Refinery.

TOXIC GAS MONITORING DATA FOR MONTH OF DEC 2025

AVU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL (%)	N/A	N/A	0
OXY (%)	N/A	N/A	20.8
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0.1

SRU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.8
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0

ETP			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.8
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	1

DCU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	1.5


Dr. Anil Kumar
 Occupational Health Physician
 Addl. Medical Officer
 Paradip Refinery (IndianOil)
 Paradip - 754141 (Odisha)


Nibedita Nayak
 Industrial Hygienist
INDUSTRIAL HYGIENIST
VKPRMS HOSPITAL
 Paradip Refinery.

DHDT			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0

VGO-HDT			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	1.2

Alkylation-Butamer			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	2.0


Dr. M. Gliza
 Occupational Health Physician
 Additional Chief Officer
 भारतीय रिफाइनरी (इंडियन ऑइल)
 Paradip Refinery (Indian Oil)
 पारादीप / Paradip - 754141 (Odisha)


Nibedita Nayak
 Industrial Hygienist
INDUSTRIAL HYGIENIST
VKPRMS HOSPITAL
 Paradip Refinery.

NOISE MONITORING DATA JAN 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
1	AVU	P3 A/B	15	85	95.8
		P22 A/B	15	85	90.7
		P25 A/B	15	85	95.2
		KM 04 A/B	15	85	86.1
		P7 A/B	15	85	90.3
		P2 A/B	15	85	89.2
		Compressor House	15	85	84.8
		P13 A/B	15	85	90.5
		P10 A/B	15	85	91.3
		P30 A/B	15	85	95.4
		F 101	15	85	79.5
		F-002	15	85	84.0
		KM 01A/B	15	85	88.3
		P7 C	15	85	92.7

NOISE MONITORING DATA JAN 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
2	SRU	088 K 001	15	85	92.5
		087 V 001	15	85	87.8
		087 WHB 001	15	85	86.9
		087 Sulphur Pit	15	85	90.4
		087 E 003	15	85	87.5
		086 E 003	15	85	85.0
		086 K 001	15	85	97.6
		085 Pump	15	85	99.3
		84P01 A	15	85	84.3
		83P01 B	15	85	95.1
		087 K 001	15	85	98.6

NOISE MONITORING DATA JAN 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
3	SRU-III	90-KM-01	15	85	80.1
		88-V-01	15	85	86.9
		88-WHB-001	15	85	88.3
		U-88 Sulphur pit	15	85	92.5
		88-E-03	15	85	91.5

Dr. ASHOK KUMAR

Occupational Health Physician

Additional Civil Medical Officer

(निदेशक (अतिरिक्त))

Industrial Hygienist

Nibedita Nayak

INDUSTRIAL HYGIENIST

NOISE MONITORING DATA JAN 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
4	ETP	Aeration Blower	15	85	95.7
		230 Air Compressor	15	85	85.3
		231 Air Compressor	15	85	100.0

NOISE MONITORING DATA JAN 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
5	DHDT	RGC AREA	15	85	80.5
		HCDS Compressor Area	15	85	89.3

NOISE MONITORING DATA JAN 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
6	ROG-PSA	ROG COMPRESSOR AREA	15	85	96.9
		FG COMPRESSOR AREA	15	85	98.7

NOISE MONITORING DATA JAN 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
7	VGO-HDT	RGC AREA	15	85	97.1
		Atmospheric Column bottom Pump P12 RESIDUE	15	85	85.5
		MHC Feed Pumps-020 P1 A/B	15	85	90.4
		Wash Water Pumps-020 P2 A/B	15	85	84.5
		VGO Wash Pumps- 020 P3 A/B	15	85	91.0
		HDT Feed Pumps-020 P16 A/B	15	85	92.4
		Atmospheric Column Furnace FD Fans-020 KM 2A	15	85	84.4
		HP Amine Pump-020 P19 B	15	85	83.2
		Atmospheric Column Furnace-020 F 001	15	85	81.6

Occupational Health Physician

Dr. ASHOK KUMAR
अधिकारी
Medical Officer

Nibedita Nayak
Industrial Hygienist

INDUSTRIAL HYGIENIST
VKPRMS HOSPITAL
Gandhinagar, Sec-17, Chandigarh

NOISE MONITORING DATA JAN 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
8	DCU	30 P45 B	15	85	80.7
		30 P7 A	15	85	81.2
		30 P13 A/B	15	85	88.6
		30 P1 A/B	15	85	85.7
		30 P11 A/B	15	85	90.1
		Compressor House GF	15	85	99.3
		30 C 008	15	85	81.5
		CHS Coke Yard	15	85	82.4
		RRLS Silo Building	15	85	82.3
		Bitumen Loading station	15	85	88.9
		72m CDS	15	85	86.3
		030-F-001	15	85	85.0
		030-F-002	15	85	81.5

NOISE MONITORING DATA JAN 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
9	Alkylation_ Butamer	24K001 COMPRESSOR	15	85	100.3
		24/P15/PV200	15	85	83.3
		24 P109 B	15	85	92.5
		24R101 Reactor Area	15	85	85.8
		DIOS AREA 24P1A	15	85	83.6
		Product pump area 24 P11A	15	85	88.7
		Butamer feed pump 25-P-1A	15	85	90.5

NOISE MONITORING DATA JAN 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
10	SARU	SARU Blower 28K05 Area	15	85	93.6
		SARU Strong Acid area 28P05	15	85	84.2
		SARU Weak Acid area 28P01	15	85	83.7

Occupational Health Physician

Nibedita Nayak
Industrial Hygienist

INDUSTRIAL HYGIENIST
VIRUPATI HOSPITAL
Refinery.

COMPRESSOR HOUSE NOISE MONITORING DATA JAN 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
11	UCR (U-122)	Dryer-1	15	85	109.2
		Dryer-3	15	85	109.4
		LP Compressor-C	15	85	92.0
		Operator cabin	15	85	65.8
		LP Compressor-A	15	85	88.7
		LP Compressor-E	15	85	86.5
		LP Compressor-B	15	85	91.5
		Air Compressor House Area	15	85	85.6

NOISE MONITORING DATA JAN 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
12	CPP	GT 1	15	85	94.6
		GT 3	15	85	95.9
		Boiler 2	15	85	85.0
		Pump House	15	85	88.5
		BFP Building	15	85	99.6
		CPP Building Entrance	15	85	80.2
		HRSB 3	15	85	71.9
		HRSB & FOPH Operator Cabin	15	85	65.3
		UB-1 & 2 Area	15	85	85.8
		New GIS (Outside)	15	85	71.5
		HHP Steam line spectacle blind Area	15	85	95.6
		UB-5 HHP Steam Header	15	85	80.0

NOISE MONITORING DATA JAN 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
13	HGU	Compressor House	15	85	75.6
		57-K-001 B	15	85	80.0
		P-06 A/B	15	85	83.6
		H2 Product outlet control Val PV-1801	15	85	83.1
		PSA	15	85	80.5
		P-07 A/B	15	85	85.7
		Reformer Ground	15	115	98.5

Occupational Health Physician

Dr. ASHOK KUMAR

Medical Officer
(Occupational Health)

Industrial Hygienist

Nibedita Nayak

INDUSTRIAL HYGIENIST
VKPRMS HOSPITAL

NOISE MONITORING DATA JAN 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
14	Polypropylene Area	72-KM-901 A/B/C	15	85	91.4
		73-KM-901 A/B/C	15	85	90.7
		72-KM-804 A/B	15	85	90.2
		72-KM-801 A/B	15	85	91.6
		73-KM-801 A/B	15	85	84.2
		73-KM-804 A/B	15	85	83.4
		72-KM-301	15	85	84.5
		73-KM-301	15	85	85.6
		71-KM-601	15	85	83.8
		Extruder Area ground floor	15	85	92.3
		Powder conveying comp. line-1	15	85	95.6
		Powder conveying comp. line-2	15	85	89.2
		Pellet conveying comp. Area	15	85	88.7
		Dryer blower Area in PP line-1	15	85	89.5
		Dryer blower Area in PP line-1	15	85	90.2

NOISE MONITORING DATA JAN 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
15	FCCU	Reactor Resior	15	85	95.2
		Near J-Bend & CKN CV (Coke Naphtha)	15	85	101.3
		Bottom Pump P 10A/B/C (A,C - Run)	15	85	97.5
		Furnace Area (Inline)	15	85	87.7
		ID Fan Area (Run)	15	85	80.1
		FD Fan Area (Run)	15	85	85.5
		023 P 14 (Run)	15	85	95.3
		023 P 18 (Run)	15	85	98.8
		023 P 02 Back of P18	15	85	93.7
		023 P 001 A (Run)	15	85	92.1
		023 P 28A (Run)	15	85	90.0
		V 10,11,13	15	85	86.4
		WGC KOD V12 Vessel GF	15	85	96.2
		WGC Compressor PF	15	85	100.5
		WGC Near Surface Condenser	15	85	103.8
		MAB GF NEAR Turbine Valve	15	85	102.6
		MAB PF (Compressor) Turning Gear	15	85	102.3
		PRT Turbine LO Pump	15	85	95.1
		PRT Expander Area	15	85	88.3
		Seal Air Blower 23-KM-2131A (Run)	15	85	100.5
		Flue Gas Cooler (23-FGC-001) Area	15	85	87.3

TOXIC GAS MONITORING DATA FOR MONTH OF JAN 2026

AVU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL (%)	N/A	N/A	0
OXY (%)	N/A	N/A	20.8
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0.5

SRU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.8
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0

ETP			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.8
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	1

DCU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	1.3

डॉ. अशोक कुमार
Occupational Health Physician

अतिरिक्त चिकित्सा अधिकारी
Additional Medical Officer

Nibedita Nayak
Industrial Hygienist

INDUSTRIAL HYGIENIST
VKPRMS HOSPITAL

DHDT			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0

VGO-HDT			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	1.0

Alkylation-Butamer			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0

FCCU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.8
H2S(ppm)	15	10	0.5
CO(ppm)	100	35	0
VOC(ppm)	25	10	0.2

डॉ. अशोक कुमार
 Dr. ASHOK KUMAR
 Occupational Health Physician
 Additional Medical Officer
 Indian Oil Corporation (India) Limited
 Indian Oil Corporation (India) Limited

Nibedita Nayak
 Industrial Hygienist
 INDUSTRIAL HYGIENIST
 VKPRMS HOSPITAL

NHT-CCR			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	1.2

KHDS			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0

HGU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0

SARU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	2.0

डॉ. अशोक कुमार
Dr. ASHOK KUMAR

अभियांत्रिकी चिकित्सा अधिकारी
Occupational Health Physician
Additional CHN Medical Officer

Nibedita Nayak
Industrial Hygienist

NHT			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
Benzene (ppm)	25	10	18.64

CCR			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
Benzene (ppm)	25	10	1.17


Dr. ANURAG KUMAR
 Occupational Health Physician
 Additional Chief Medical Officer
 पारादीप रिफाइनरी (इंडियन ऑयल)
 Paradip Refinery (Indian Oil)
 पारादीप / Paradip - 754141 (Odisha)


Nibedita Nayak
 Industrial Hygienist
INDUSTRIAL HYGIENIST
VKPRMS HOSPITAL
 Paradip Refinery.

NOISE MONITORING DATA FEB 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
1	AVU	P3 A/B	15	85	94.6
		P22 A/B	15	85	98.7
		P25 A/B	15	85	92.5
		KM 04 A/B	15	85	86.3
		P7 A/B	15	85	90.1
		P2 A/B	15	85	88.7
		Compressor House	15	85	85.9
		P13 A/B	15	85	88.5
		P10 A/B	15	85	90.2
		P30 A/B	15	85	94.1
		F 101	15	85	83.6
		F-002	15	85	83.2
		KM 01A/B	15	85	82.9
		P7 C	15	85	90.3

NOISE MONITORING DATA FEB 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
2	SRU	088 K 001	15	85	92.3
		087 V 001	15	85	83.7
		087 WHB 001	15	85	85.4
		087 Sulphur Pit	15	85	88.3
		087 E 003	15	85	86.3
		086 E 003	15	85	85.2
		086 K 001	15	85	97.5
		085 Pump	15	85	99.2
		84P01 A	15	85	84.2
		83P01 B	15	85	92.8
		087 K 001	15	85	96.7

NOISE MONITORING DATA FEB 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
3	SRU-III	90-KM-01	15	85	79.4
		88-V-01	15	85	84.2
		88-WHB-001	15	85	88.1
		U-88 Sulphur pit	15	85	89.3
		88-E-03	15	85	90.1

Occupational Health Physician

[Signature]
10/3/26

Industrial Hygienist

Nibedita Nayak
INDUSTRIAL HYGIENIST
VKPRMS HOSPITAL
Paradip Refinery.

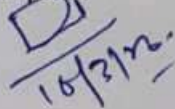
NOISE MONITORING DATA FEB 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
4	ETP	Aeration Blower	15	85	90.8
		230 Air Compressor	15	85	85.7
		231 Air Compressor	15	85	100.1

NOISE MONITORING DATA FEB 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
5	DHDT	RGC AREA	15	85	80.3
		HCDS Compressor Area	15	85	90.7

NOISE MONITORING DATA FEB 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
6	ROG-PSA	ROG COMPRESSOR AREA	15	85	96.8
		FG COMPRESSOR AREA	15	85	99.3

NOISE MONITORING DATA FEB 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
7	VGO-HDT	RGC AREA	15	85	98.2
		Atmospheric Column bottom Pump P12 RESIDUE	15	85	85.7
		MHC Feed Pumps-020 P1 A/B	15	85	90.1
		Wash Water Pumps-020 P2 A/B	15	85	85.1
		VGO Wash Pumps- 020 P3 A/B	15	85	86.8
		HDT Feed Pumps-020 P16 A/B	15	85	93.5
		Atmospheric Column Furnace FD Fans-020 KM 2A	15	85	83.3
		HP Amine Pump-020 P19 B	15	85	85.4
		Atmospheric Column Furnace-020 F 001	15	85	83.5

Occupational Health Physician


16/3/26

Nibedita Nayak
Industrial Hygienist

INDUSTRIAL HYGIENIST
VKPRMS HOSPITAL
Paradip Refinery.

NOISE MONITORING DATA FEB 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
8	DCU	30 P45 B	15	85	80.5
		30 P7 A	15	85	85.2
		30 P13 A/B	15	85	87.1
		30 P1 A/B	15	85	85.8
		30 P11 A/B	15	85	90.2
		Compressor House GF	15	85	98.5
		30 C 008	15	85	80.9
		CHS Coke Yard	15	85	82.7
		RRLS Silo Building	15	85	83.0
		Bitumen Loading station	15	85	87.6
		72m CDS	15	85	87.9
		030-F-001	15	85	79.3
		030-F-002	15	85	80.0

NOISE MONITORING DATA FEB 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
9	Alkylation-Butamer	24K001 COMPRESSOR	15	85	100.2
		24/P15/PV200	15	85	83.6
		24 P109 B	15	85	93.6
		24R101 Reactor Area	15	85	89.7
		DIOS AREA 24P1A	15	85	84.1
		Product pump area 24 P11A	15	85	88.3
		Butamer feed pump 25-P-1A	15	85	90.2

Occupational Health Physician

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10/3/21

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Paradip Refinery.

COMPRESSOR HOUSE NOISE MONITORING DATA FEB 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
10	UCR (U-122)	Dryer-1	15	85	109.3
		Dryer-3	15	85	110.2
		LP Compressor-C	15	85	85.3
		LP Compressor-D	15	85	93.2
		Operator cabin	15	85	68.6
		LP Compressor-A	15	85	91.2
		LP Compressor-E	15	85	90.0
		LP Compressor-B	15	85	85.2
		Air Compressor House Area	15	85	85.4

NOISE MONITORING DATA FEB 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
11	CPP	GT 1	15	85	95.4
		GT 3	15	85	96.1
		Boiler 2	15	85	85.3
		Pump House	15	85	88.2
		BFP Building	15	85	94.8
		CPP Building Entrance	15	85	75.5
		HRSB 3	15	85	80.1
		HRSB & FOPH Operator Cabin	15	85	65.0
		UB-1 & 2 Area	15	85	84.1
		New GIS (Outside)	15	85	77.2
		HHP Steam line spectacle blind Area	15	85	84.5
		UB-5 HHP Steam Header	15	85	82.8

NOISE MONITORING DATA FEB 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
12	HGU	Compressor House	15	85	85.6
		57-K-001 B	15	85	75.0
		P-06 A/B	15	85	84.5
		P-03 A/B	15	85	85.7
		H2 Product outlet control Val PV-1801	15	85	83.2
		PSA	15	85	84.7
		P-07 A/B	15	85	80.9
		Reformer Ground	15	115	99.6

Occupational Health Physician

[Signature]
15/3/2020

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NOISE MONITORING DATA FEB 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
13	Polypropylene Area	72-KM-901 A/B/C	15	85	92.7
		73-KM-901 A/B/C	15	85	95.4
		72-KM-804 A/B	15	85	85.8
		72-KM-801 A/B	15	85	84.3
		73-KM-801 A/B	15	85	82.6
		73-KM-804 A/B	15	85	83.8
		72-KM-301	15	85	84.7
		73-KM-301	15	85	85.8
		71-KM-601	15	85	84.2
		Extruder Area ground floor	15	85	94.6
		Powder conveying comp. line-1	15	85	93.7
		Powder conveying comp. line-2	15	85	89.7
		Pellet conveying comp. Area	15	85	90.0
		Dryer blower Area in PP line-1	15	85	91.2
		Dryer blower Area in PP line-1	15	85	90.3

NOISE MONITORING DATA FEB 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Readings in dBA
14	NHT-CCR	RU Compressor	15	85	90.7
		42 K4 Compressor	15	85	93.5
		42 K2 Compressor	15	85	94.5
		42 K3 Compressor	15	85	92.4
		42 K1 Compressor	15	85	90.8
		42 K2 Discharge	15	85	95.3
		42 AC 4C	15	85	97.1
		42 AC 4B	15	85	88.6
		42 AC 3A	15	85	94.2
		42 AC 1H	15	85	90.3
		42 AC 1A	15	85	95.2
		42 AC 7	15	85	87.1
		Near 041-P-05A/B & 041-P-03A/B	15	85	91.3

Occupational Health Physician

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10/3/22

Nibedita Nayak
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Paradip Refinery.

NOISE MONITORING DATA FEB 2026					
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T45 Reg. PNGRB	Readings in dBA
15	KHDS	P-001A	15	85	84.6
		F-001	15	85	76.5
		K-001B	15	85	73.8
		P-002A	15	85	80.0
		P-004A	15	85	84.2
		AC-001	15	85	85.1
		AC-002	15	85	83.4
		Compressor Area	15	85	77.9
		Furnace Area(Inline)	15	85	73.7
		In between TS-1 & Compressor shed area	15	85	71.5
		TS-1 area ground floor	15	85	70.3
		TS-2 area ground floor	15	85	72.9

Occupational Health Physician

[Signature]
10/2/26

Nibedita Nayak
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Paradip Refinery.

TOXIC GAS MONITORING DATA FOR MONTH OF FEB 2026

AVU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL (%)	N/A	N/A	0
OXY (%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0.1

SRU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0

ETP			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.8
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	1.3

DCU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0

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18/3/26

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DHDT			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.8
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0.3

VGO-HDT			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	1.4

Alkylation-Butamer			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0

NHT-CCR			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0.1

Occupational Health Physician

10/3/22

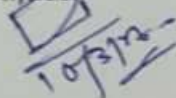
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Paradip Refinery.

KHDS			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0

HGU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0.3

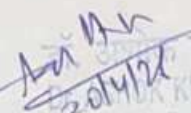
Occupational Health Physician

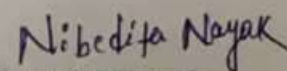

10/3/22

Nibedita Nayak
Industrial Hygienist
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Paradip Refinery.

NOISE MONITORING DATA MARCH 2026						
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Standard for 15 min duration as per OISD	Readings in dBA
1	AVU	P3 A/B	15	85	115	92.3
		P22 A/B	15	85	115	99.5
		P25 A/B	15	85	115	95.8
		KM 04 A/B	15	85	1115	85.4
		P7 A/B	15	85	115	90.6
		P2 A/B	15	85	115	88.3
		Compressor House	15	85	115	84.7
		P13 A/B	15	85	115	86.2
		P10 A/B	15	85	115	90.1
		P30 A/B	15	85	115	95.2
		F 101	15	85	115	83.9
		F-002	15	85	115	83.5
		KM 01A/B	15	85	115	82.5
		P7 C	15	85	115	90.4

NOISE MONITORING DATA MARCH 2026						
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Standard for 15 min duration as per OISD	Readings in dBA
2	SRU	088 K 001	15	85	115	91.6
		087 V 001	15	85	115	83.3
		087 WHB 001	15	85	115	85.2
		087 Sulphur Pit	15	85	115	86.5
		087 E 003	15	85	115	87.8
		086 E 003	15	85	115	85.1
		086 K 001	15	85	115	97.2
		085 Pump	15	85	115	98.0
		84P01 A	15	85	115	84.3
		83P01 B	15	85	115	92.7
		087 K 001	15	85	115	95.3


 Anil Kumar
 अतिरिक्त मुख्य चिकित्सा अधिकारी
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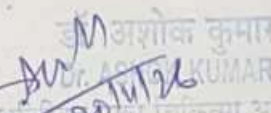

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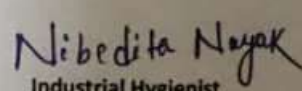
NOISE MONITORING DATA MARCH 2026						
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Standard for 15 min duration as per OISD	Readings in dBA
3	SRU-III	90-KM-01	15	85	115	78.5
		88-V-01	15	85	115	87.6
		88-WHB-001	15	85	115	89.4
		U-88 Sulphur pit	15	85	115	88.2
		88-E-03	15	85	115	90.0

NOISE MONITORING DATA MARCH 2026						
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Standard for 15 min duration as per OISD	Readings in dBA
4	ETP	Aeration Blower	15	85	115	90.3
		230 Air Compressor	15	85	115	85.8
		231 Air Compressor	15	85	115	100.0

NOISE MONITORING DATA MARCH 2026						
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Standard for 15 min duration as per OISD	Readings in dBA
5	DHDT	RGC AREA	15	85	115	88.6
		HCDS Compressor Area	15	85	115	92.5

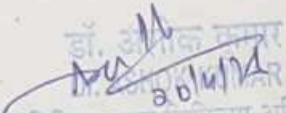
NOISE MONITORING DATA MARCH 2026						
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Standard for 15 min duration as per OISD	Readings in dBA
6	ROG-PSA	ROG COMPRESSOR AREA	15	85	115	100.7
		FG COMPRESSOR AREA	15	85	115	99.4

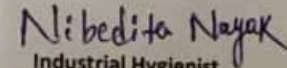

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 Paradip, Paradip - 754141 (Odisha)


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 Paradip Refinery.

NOISE MONITORING DATA MARCH 2026						
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Standard for 15 min duration as per OISD	Readings in dBA
7	VGO-HDT	RGC AREA	15	85	115	93.4
		Atmospheric Column bottom Pump P12 RESIDUE	15	85	115	85.0
		MHC Feed Pumps-020 P1 A/B	15	85	115	90.3
		Wash Water Pumps-020 P2 A/B	15	85	115	85.3
		VGO Wash Pumps- 020 P3 A/B	15	85	115	88.9
		HDT Feed Pumps-020 P16 A/B	15	85	115	93.7
		Atmospheric Column Furnace FD Fans-020 KM 2A	15	85	115	85.5
		HP Amine Pump-020 P19 B	15	85	115	84.2
		Atmospheric Column Furnace-020 F 001	15	85	115	82.0

NOISE MONITORING DATA MARCH 2026						
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T4S Reg. PNGRB	Standard for 15 min duration as per OISD	Readings in dBA
8	DCU	30 P45 B	15	85	115	81.5
		30 P7 A	15	85	115	88.3
		30 P13 A/B	15	85	115	88.5
		30 P1 A/B	15	85	115	85.2
		30 P11 A/B	15	85	115	89.7
		Compressor House GF	15	85	115	98.8
		30 C 008	15	85	115	83.6
		CHS Coke Yard	15	85	115	85.5
		RRLS Silo Building	15	85	115	84.9
		Bitumen Loading station	15	85	115	87.8
		72m CDS	15	85	115	89.1
		030-F-001	15	85	115	79.6
		030-F-002	15	85	115	80.2


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 Paradip Refinery.

NOISE MONITORING DATA MARCH 2026						
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T45 Reg. PNGRB	Standard for 15 min duration as per OISD	Readings in dBA
9	Alkylation _Butamer	24K001 COMPRESSOR	15	85	115	98.3
		24/P15/PV200	15	85	115	83.2
		24 P109 B	15	85	115	93.5
		24R101 Reactor Area	15	85	115	89.1
		DIOS AREA 24P1A	15	85	115	84.6
		Product pump area 24 P11A	15	85	115	86.8
		Butamer feed pump 25-P-1A	15	85	115	91.3

COMPRESSOR HOUSE NOISE MONITORING DATA MARCH 2026						
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T45 Reg. PNGRB	Standard for 15 min duration as per OISD	Readings in dBA
10	UCR (U-122)	Dryer-1	15	85	115	110.2
		Dryer-3	15	85	115	110.5
		LP Compressor-C	15	85	115	92.6
		Operator cabin	15	85	115	67.9
		LP Compressor-A	15	85	115	90.2
		LP Compressor-E	15	85	115	96.8
		LP Compressor-B	15	85	115	92.8
		Air Compressor House Area	15	85	115	88.6

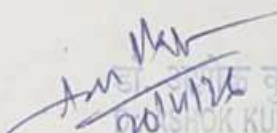
NOISE MONITORING DATA MARCH 2026						
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T45 Reg. PNGRB	Standard for 15 min duration as per OISD	Readings in dBA
11	CPP	GT 1	15	85	115	96.5
		GT 3	15	85	115	94.2
		Pump House	15	85	115	87.3
		BFP Building	15	85	115	91.3
		CPP Building Entrance	15	85	115	75.6
		HRS 3	15	85	115	81.2
		HRS & FOPH Operator Cabin	15	85	115	65.3
		UB-1 & 2 Area	15	85	115	81.3
		New GIS (Outside)	15	85	115	79.5
		HHP Steam line spectacle blind Area	15	85	115	95.2
		UB-5 HHP Steam Header	15	85	115	82.9

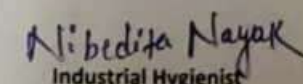
डॉ. अशोक कुमार
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Paradip Refinery

NOISE MONITORING DATA MARCH 2026						
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T45 Reg. PNGRB	Standard for 15 min duration as per OISD	Readings in dBA
12	Polypropylene Area	72-KM-901 A/B/C	15	85	115	78.7
		73-KM-901 A/B/C	15	85	115	89.3
		72-KM-804 A/B	15	85	115	86.6
		72-KM-801 A/B	15	85	115	96.5
		73-KM-801 A/B	15	85	115	76.6
		73-KM-804 A/B	15	85	115	74.3
		72-KM-301	15	85	115	84.7
		73-KM-301	15	85	115	70.7
		71-KM-601	15	85	115	89.8
		Extruder Area ground floor	15	85	115	90.5
		Powder conveying comp. line-1	15	85	115	89.7
		Powder conveying comp. line-2	15	85	115	90.2
		Pellet conveying comp. Area	15	85	115	89.5
		Dryer blower Area in PP line-1	15	85	115	90.5
		Dryer blower Area in PP line-2	15	85	115	90.1

NOISE MONITORING DATA MARCH 2026						
Sl. No.	Area	Location	Avg. Time of Reading (min)	Standard for 15 min duration as per T45 Reg. PNGRB	Standard for 15 min duration as per OISD	Readings in dBA
13	NHT-CCR	RU Compressor	15	85	115	92.5
		42 K4 Compressor	15	85	115	91.6
		42 K2 Compressor	15	85	115	94.3
		42 K3 Compressor	15	85	115	90.8
		42 K1 Compressor	15	85	115	90.0
		42 K2 Discharge	15	85	115	96.2
		42 AC 4C	15	85	115	97.5
		42 AC 4B	15	85	115	89.1
		42 AC 3A	15	85	115	94.1
		42 AC 1H	15	85	115	90.7
		42 AC 1A	15	85	115	95.0
		42 AC 7	15	85	115	87.5
		Near 041-P-05A/B & 041-P-03A/B	15	85	115	91.6


अनशोक कुमार
ANSHOK KUMAR
 अतिरिक्त मुख्य चिकित्सा अधिकारी
 Occupational Health Physician
 Additional Chief Medical Officer
 पारादीप रिफाइनरी (इंडियन ऑयल)
 Paradip Refinery (IndianOil)
 पारादीप/1 paradi-754101 (Odisha)


Nibedita Nayak
 Industrial Hygienist
INDUSTRIAL HYGIENIST
VKPRMS HOSPITAL
 Paradip Refinery.

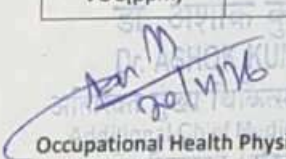
TOXIC GAS MONITORING DATA FOR MONTH OF MARCH 2026

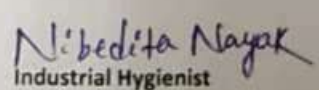
AVU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL (%)	N/A	N/A	0
OXY (%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0.3

SRU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0.1

ETP			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.8
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0.3

DCU			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0


Dr. Anshu Kumar
 Occupational Health Physician
 Paradip Refinery (IndianOil)
 Paradip / Paradip-754114 (Odisha)


Nibedita Nayak
 Industrial Hygienist
INDUSTRIAL HYGIENIST
VKPRMS HOSPITAL
 Paradip Refinery

DHDT			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.8
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0.1

VGO-HDT			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	1.3

Alkylation-Butamer			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0

NHT-CCR			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
LEL(%)	N/A	N/A	0
OXY(%)	N/A	N/A	20.9
H2S(ppm)	15	10	0
CO(ppm)	100	35	0
VOC(ppm)	25	10	0.2

डॉ. अशोक कुमार
 Dr. ASHOK KUMAR
 20/6/26
 Additional Chief Medical Officer
 Occupational Health Physician
 Paradip Refinery (Indian Oil)
 पारादीप - Paradip - 756141 (Odisha)

Nibedita Nayak
 Industrial Hygienist
 INDUSTRIAL HYGIENIST
 VKPRMS HOSPITAL
 Paradip Refinery.

NHT			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
Benzene(ppm)	N/A	N/A	6.7

CCR			
Toxic Gas	STEL_Alarm_Std.	TWA Alarm_Std.	REAL_Peak_Obs.
Benzene(ppm)	N/A	N/A	4.3

डॉ. नमो कुमार
 Dr. NAMO KUMAR
 20/11/26
 अतिरिक्त चिकित्सा अधिकारी
 Additional Chief Medical Officer
 पारादीप रिफाइनरी (भारतीय तेल)
 Paradip Refinery (Indian Oil)
 पारादीप - 754101 (ओडिशा)
 Occupational Health Physician

Nibedita Nayak
 Industrial Hygienist

INDUSTRIAL HYGIENIST
 VKPRMS HOSPITAL

Annexure-13

Soil Analysis Report



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TC - 16178

TEST REPORT

Name of the Customer:	ULR. No.	TC161782600000110F
M/s. INDIAN OIL CORPORATION LIMITED,	Test Report No	SV/IOCL/26/53
Paradip Refinery Jhimani, Jagatsinghipur	Sample Registration No	SV/26/01/SO/137
District, Odisha - 754141.	Date of Sampling	16.01.2026
	Date of Receipt	19.01.2026
	Start Date of Analysis	20.01.2026
Discipline: Chemical	End Date of Analysis	24.01.2026
Group: Pollution & Environment	Issue Date	27.01.2026
Product: Soil	Sample Condition when received	Found OK
Qty: 5 Kgs	Source of Collection	PRRPL
Packing : Sealed Zip Lock Cover	Sample Collected by	Mr. Munaraj Swain (SV)

Sample Tested As Received Basis

S.No.	Parameters	Units	Result	Method
1.	pH (1:2.5)	-	7.81	IS 2720 (Part-26):1987
2.	Electrical Conductivity (1:2)	µmhos/cm	1917	IS 14767:2002
3.	Organic Matter	%	0.72	Methods Manual Soil Testing in India. Ministry of Agriculture : 2011
4.	Available Potassium	kg/ha	124	Methods Manual Soil Testing in India. Ministry of Agriculture : 2011
5.	Available Sodium	kg/ha	342	Methods Manual Soil Testing in India. Ministry of Agriculture : 2011
6.	Available Phosphorous	kg/ha	<0.1	Methods Manual Soil Testing in India. Ministry of Agriculture : 2011
7.	Exchangeable Calcium and Magnesium	meq/100gm	3.38	Methods Manual Soil Testing in India. Ministry of Agriculture : 2011
8.	Cation Exchange Capacity	meq/100gm	17.11	Methods Manual Soil Testing in India. Ministry of Agriculture : 2011

Disclaimer:

1. Interpretation of Results: Nil; Deviation from test Method and Conditions: Nil.
2. Results are applicable only to the Submitted sample.
3. Sampling was done by laboratory.
4. The test document cannot be reproduced in any way, except in content, without the prior approval in writing of the laboratory
5. Technical Manager has authorized and maintained record for the verification test method, analysis of the results & if any statement of conformity and interpretation before releasing the tests Report
6. The retention period of the sample is 15 days from receipt unless otherwise specified by the client

Verified by
K. Srinivas
(Sr. Chemist)



Authorized Signatory
B. Ravi Prasad
(Lab Incharge)

Page No: 1 of 1

Corporate Office and Laboratory: Enviro House, B-1, Block-B, IDA, Autonagar, Visakhapatnam - 530012
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Website: www.svenviolabs.com
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Contacts
0891-2755528, +91 7207664444

PAN: ABQCS0643F
CIN: U74909AP2025PTC119098





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TEST REPORT

Name of the Customer: M/s. INDIAN OIL CORPORATION LIMITED, Paradip Refinery Jhimani, Jagatsinghipur District, Odisha – 754141.	Test Report No	SV/IOCL/26/54
	Sample Registration No	SV/26/01/SO/137
	Date of Sampling	16.01.2026
	Date of Receipt	19.01.2026
	Start Date of Analysis	20.01.2026
	End Date of Analysis	24.01.2026
Discipline: Chemical	Issue Date	27.01.2026
Group: Pollution & Environment	Sample Condition when received	Found OK
Product: Soil	Source of Collection	PRRPL
Qty: 5 Kgs	Sample Submitted by	Mr. Munaraj Swain (SV)
Packing : Sealed Zip Lock Cover		

Sample Tested As Received Basis

S.No.	Parameters	Units	Result	Method
1.	Available Sulphur	mg/kg	<0.1	Methods Manual Soil Testing in India, Ministry of Agriculture : 2011
2.	Available Nitrogen	mg/kg	72	Methods Manual Soil Testing in India, Ministry of Agriculture : 2011
3.	Oil & Grease	mg/kg	2.0	Soxhlet Extraction
4.	Phenolic Compound	mg/kg	<0.01	Colorimetric

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(Sr. Chemist)



Authorized Signatory
B. Ravi Prasad
(Lab Incharge)

End of report

Page No: 1 of 1

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TC - 16178

TEST REPORT

Name of the Customer: M/s. INDIAN OIL CORPORATION LIMITED, Paradip Refinery Jhimani, Jagatsinghipur District, Odisha – 754141.	ULR. No.	TC161782600000111F
	Test Report No	SV/IOCL/26/55
	Sample Registration No	SV/26/01/SO/138
	Date of Sampling	16.01.2026
	Date of Receipt	19.01.2026
	Start Date of Analysis	20.01.2026
Discipline: Chemical	End Date of Analysis	24.01.2026
Group: Pollution & Environment	Issue Date	27.01.2026
Product: Soil	Sample Condition when received	Found OK
Qty: 5 Kgs	Source of Collection	Near South Pond (Back side of ETP Sub Station – 333S)
Packing : Sealed Zip Lock Cover	Sample Collected by	Mr. Munaraj Swain (SV)

Sample Tested As Received Basis

S.No.	Parameters	Units	Result	Method
1.	pH (1:2.5)	-	8.01	IS 2720 (Part-26):1987
2.	Electrical Conductivity (1:2)	µmhos/cm	2087	IS 14767:2002
3.	Organic Matter	%	0.51	Methods Manual Soil Testing in India, Ministry of Agriculture : 2011
4.	Available Potassium	kg/ha	133	Methods Manual Soil Testing in India, Ministry of Agriculture : 2011
5.	Available Sodium	kg/ha	373	Methods Manual Soil Testing in India, Ministry of Agriculture : 2011
6.	Available Phosphorous	kg/ha	<0.1	Methods Manual Soil Testing in India, Ministry of Agriculture : 2011
7.	Exchangeable Calcium and Magnesium	meq/100gm	2.68	Methods Manual Soil Testing in India, Ministry of Agriculture : 2011
8.	Cation Exchange Capacity	meq/100gm	18.69	Methods Manual Soil Testing in India, Ministry of Agriculture : 2011

Disclaimer:

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K. Srinivas
(Sr. Chemist)



Authorized Signatory
B. Ravi Prasad
(Lab Incharge)
Page No: 1 of 1

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Contacts

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PAN: ABQCS0643F

CIN: U74909AP2025PTC119098



**TEST REPORT**

Name of the Customer: M/s. INDIAN OIL CORPORATION LIMITED, Paradip Refinery Jhimani, Jagatsinghipur District, Odisha – 754141.	Test Report No	SV/IOCL/26/56
	Sample Registration No	SV/26/01/SO138
	Date of Sampling	16.01.2026
	Date of Receipt	19.01.2026
	Start Date of Analysis	20.01.2026
	End Date of Analysis	24.01.2026
Discipline: Chemical	Issue Date	27.01.2026
Group: Pollution & Environment	Sample Condition when received	Found OK
Product: Soil	Source of Collection	Near South Pond (Back side of ETP Sub Station – 333S)
Qty: 5 Kgs	Sample Submitted by	Mr. Munaraj Swain (SV)
Packing : Sealed Zip Lock Cover		

Sample Tested As Received Basis

S.No.	Parameters	Units	Result	Method
1.	Available Sulphur	mg/kg	<0.1	Methods Manual Soil Testing in India, Ministry of Agriculture : 2011
2.	Available Nitrogen	mg/kg	74	Methods Manual Soil Testing in India, Ministry of Agriculture : 2011
3.	Oil & Grease	mg/kg	8.0	Soxhlet Extraction
4.	Phenolic Compound	mg/kg	<0.01	Colorimetric

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Verified by
K. Srinivas
(Sr. Chemist)



Authorized Signatory
B. Ravi Prasad
(Lab Incharge)

*****End of report*****



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TC - 16178

TEST REPORT

Name of the Customer: M/s. INDIAN OIL CORPORATION LIMITED, Paradip Refinery Jhimani, Jagatsinghipur District. Odisha – 754141.	ULR. No.	TC161782600000112F
	Test Report No	SV/IOCL/26/57
	Sample Registration No	SV/26/01/SO/139
	Date of Sampling	16.01.2026
	Date of Receipt	19.01.2026
	Start Date of Analysis	20.01.2026
Discipline: Chemical	End Date of Analysis	24.01.2026
Group: Pollution & Environment	Issue Date	27.01.2026
Product: Soil	Sample Condition when received	Found OK
Qty: 5 Kgs	Source of Collection	Secured Land Fill
Packing : Sealed Zip Lock Cover	Sample Collected by	Mr. Munaraj Swain (SV)

Sample Tested As Received Basis

S.No.	Parameters	Units	Result	Method
1.	pH (1:2.5)	-	8.21	IS 2720 (Part-26): 1987
2.	Electrical Conductivity (1:2)	µmhos/cm	1917	IS 14767:2002
3.	Organic Matter	%	0.65	Methods Manual Soil Testing in India, Ministry of Agriculture : 2011
4.	Available Potassium	kg/ha	144	Methods Manual Soil Testing in India, Ministry of Agriculture : 2011
5.	Available Sodium	kg/ha	348	Methods Manual Soil Testing in India, Ministry of Agriculture : 2011
6.	Available Phosphorous	kg/ha	<0.1	Methods Manual Soil Testing in India, Ministry of Agriculture : 2011
7.	Exchangeable Calcium and Magnesium	meq/100gm	2.88	Methods Manual Soil Testing in India, Ministry of Agriculture : 2011
8.	Cation Exchange Capacity	meq/100gm	17.48	Methods Manual Soil Testing in India, Ministry of Agriculture : 2011

Disclaimer:

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TEST REPORT

Name of the Customer: M/s. INDIAN OIL CORPORATION LIMITED, Paradip Refinery Jhimani, Jagatsinghipur District, Odisha – 754141.	Test Report No	SV/IOCL/26/58
	Sample Registration No	SV/26/01/SO139
	Date of Sampling	16.01.2026
	Date of Receipt	19.01.2026
	Start Date of Analysis	20.01.2026
	End Date of Analysis	24.01.2026
Discipline: Chemical	Issue Date	27.01.2026
Group: Pollution & Environment	Sample Condition when received	Found OK
Product: Soil	Source of Collection	Secured Land Fill
Qty: 5 Kgs	Sample Submitted by	Mr. Munaraj Swain (SV)
Packing : Sealed Zip Lock Cover		

Sample Tested As Received Basis

S.No.	Parameters	Units	Result	Method
1.	Available Sulphur	mg/kg	<0.1	Methods Manual Soil Testing in India, Ministry of Agriculture : 2011
2.	Available Nitrogen	mg/kg	81	Methods Manual Soil Testing in India, Ministry of Agriculture : 2011
3.	Oil & Grease	mg/kg	4.0	Soxhlet Extraction
4.	Phenolic Compound	mg/kg	<0.01	Colorimetric

Disclaimer:

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Verified by
K. Srinivas
(Sr. Chemist)



End of report

Authorized Signatory
B. Ravi Prasad
(Lab Incharge)



Annexure-14

Forest Clearance

26-5-2000
MD, IDCO

SRI A.K. MAHARAJA

DGM (EIA)

CAMP: BBSR

90

No. 8-64/98 - FC
Government of India
Ministry of Environment and Forests
(F.C. Division)

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

Dated: the 23rd May, 2000

To
The Secretary (Forests)
Government of Orissa,
Bhubaneswar.

Subject: Diversion of 36.5 ha. of forest land for Eastern India Refinery project at
Paradeep under Mangrove Forest Division, Rajnagar in Jagatsingpur of Orissa

Sir,

I am directed to refer to the State Government, Forest and Environment Department's letters no.10F(Cons)13/97, 14241/F&E dated 18.7.98, no.10F(Cons)-3/99(PL) 5405/F&E dtd. 1/4/2000 and 10F(Cons)-3/99 (PL) 7463 dt. 16.5.2000 on the above mentioned subject seeking prior approval of the Central Government in accordance with Section-2 of the Forest (Conservation) Act, 1980 and to say that the proposal has been examined by the Advisory Committee constituted by the Central Government under Section-3 of the aforesaid Act.

and in pursuance of the proposal of the State Government and on the basis of the recommendations of the above mentioned Advisory Committee, the Central Government hereby conveys its approval under Section-2 of the Forest (Conservation) Act, 1980 for diversion of 36.5 ha. of forest land for Eastern India Refinery project at Paradeep under Mangrove forest division, Rajnagar in Jagatsingpur of Orissa subject to the following conditions:-

- i. Legal status of forest land shall remain unchanged.
- ii. Compensatory afforestation will be carried out over 183 ha. of degraded forest land at the project cost.
- iii. While carrying out afforestation for creation of green belt, efforts should be made to plant local floral species and also the species yielding more of non wood timber products. Such plantation should be carried out in consultation with the concerned Division Forest Officer.
- iv. No forest land shall be used for rehabilitation of rustees.

- v. The user agency will make arrangements for free supply of fuelwood preferably alternate energy source to labourers and staff working on the project site so as to avoid any pressure on the adjacent forest areas.
- vi. The scheme submitted by the State Govt. for studies on the "Population dynamics of the nesting Olive Ridley Turtles" at Gahirmatha coast of Orissa shall be finalised by the State Govt. in consultation with Wildlife Institute of India and shall be sent to this Ministry for approval.
- vii. The approval under the Forest (Conservation) Act, 1980 is subject to the clearance under Environmental Protection Act, 1986.
- viii. Any other condition that the State Govt. or the Chief Conservator of Forests (Central), Regional Office, Bhubaneswar may impose from time to time in the interest of afforestation and protection & improvement of the flora and fauna in the area.

Yours faithfully,

(J.P. Misra)

Assistant Inspector General of Forests

Copy to:

1. The Principal Chief Conservator of Forests, Government of Orissa, Bhubaneswar.
2. The Nodal Officer, Office of the PCCF, Government of Orissa, Bhubaneswar.
3. The Chief Conservator of Forests (Central), Regional Office, Bhubaneswar.
4. Regional Office (HQ), New Delhi.
5. The Managing Director, Eastern India Refinery Projects, IDCU, IDCO Towers, Jampalli, Bhubaneswar, ORISSA.
6. Guard File

(J. P. Misra)

Assistant Inspector General of Forests