

**BEFORE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE BENCH AT CHENNAI
ORIGINAL APPLICATION NO. 73 OF 2021**

IN THE MATTER OF:

VISAKHA PAWAN PRAJA KARMIKA SANGAM Applicant

Versus

UNION OF INDIA & ORS ... Respondents

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Filed through


SRAVAN KUMAR
SM. KOTHAI MUTHU MEENAL
 COUNSEL FOR THE APPLICANT
 104, 1st Floor, 14, School Lane
 Bengali Market, New Delhi- 110001
 Mobile: 9811237009, 97152 16186
 Email: advsravan@gmail.com

Chennai

3.10.2021

**BEFORE NATIONAL GREEN TRIBUNAL
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IN THE MATTER OF:

VISAKHA PAWAN PRAJA KARMIKA SANGAM Applicant
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REPLY AFFIDAVIT ON BEHALF OF APPLICANT

I, Mr. Ganga Raju Kola S/o Kola Appalaraju, H.No. 60-33-49, Ambedkar Colony, Malkapuram, Vishakhapatnam, Andhra Pradesh-530011, aged about 49 years presently in Andhra Pradesh do hereby solemnly affirm and declare as under:

1. That I am the Secretary of the Applicant Association in the above mentioned application and I am fully conversant with the facts and circumstances of the case and therefore competent and authorized to swear this affidavit.
2. That the Joint Committee appoint by this Hon'ble Tribunal has confirmed the violations and non-compliances of conditions imposed by MoEF and APPCB as alleged by the Applicant herein. It has mentioned in the Concluding remarks of the report that;

"a). the Unit is not complying the majority of conditions stipulated in Environmental Clearances granted to Vishakha Refinery.

b). The unit s not complying with the majority of consent & authorization conditions issued by APPCB on March 9, 2021; these are the same conditions given by APPCB at the time of consent & authorization renewal.

c). APPCB had issued 16 points directions for non-compliance on March 19, 2020; the unit is not complying for 6 points and partially complied for one point even after one year.

d). The committee had monitored stack emissions at five stacks, manual ambient air quality monitoring at three locations and CAAQM using mobile van at two locations. The stack emissions are meeting prescribed standards, the ambient air quality for PM10, PM2.5 parameter is exceeding at all the five locations, at one point near the ETP-IV area the concentration value of SO2 is exceeding the standards." *H. G. D.*

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Though the Committee consisting of enforcing agencies such as MoEF, CPCB and APPCB have confirmed the pollution and non-compliance of the **majority mandatory conditions** imposed in Environment Clearances and Consent For Operation(CFO) by MoEF and APPCB, neither the Committee has recommended closer of the Unit/stopping of the producton/expansion of the Unit, nor the enforcing agencies have taken coercive action against the Polluting industry.

3. That the Applicant would like to place objections/remarks on the Joint Committee reports in the following tabular form:

Remarks of the Joint Committee Report dated 26.5.2021	Objections by the Applicant
<p>Concluding Remarks at page 25:</p> <p>a). the Unit is not complying the majority of conditions stipulated in Environmental Clearances granted to Vishakha Refinery.</p> <p>b). The unit is not complying with the majority of consent & authorization conditions issued by APPCB on March 9, 2021; these are the same conditions given by APPCB at the time of consent & authorization renewal.</p> <p>c). APPCB had issued 16 points directions for non-compliance on March 19, 2020; the unit is not complying for 6 points and partially complied for one point even after one year.</p> <p>d). The committee had monitored stack emissions at five stacks, manual ambient air quality monitoring at three locations and CAAQM using mobile van at two locations. The stack emissions are meeting prescribed standards, the ambient air quality for PM10, PM2.5 parameter is exceeding at all the five locations, at one point near the ETP-IV area the concentration value of SO2 is exceeding the standards.</p>	<p>No coercive steps taken or proposed by the Joint Committee or enforcing agencies such as MoEF, CPCB and APPCB except recommending nominal Environmental Compensation against the Unit.</p>

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Observations: at page 21 of the report:

"ii. The unit has three ETPs for treating the different streams of effluents generated. ETP-I is of the capacity 3,230 KLD, ETP-II (7,800 KLD) and ETP-IV of 4320 KLD capacity. During inspection, ETP-I & ETP-IV were fully operational, but ETP-II was partially operational and was diverted to ETP-IV for further operation. It may be noted that the design capacity of ETP-IV is smaller compared to ETP-II, hence complete treatment cannot be achieved. This is also reflected in the analysis results of ETP-IV outlet (Table 13). The chance of bypass is highly possible, however during inspection no by-pass of effluents was observed.

iii. In the ETP-II area, the TPI was broken down and the thick black slurry like effluent was spilled all over and was filled in the drains. The drains near ETP-II sector were filled with water and white sand like material.

iv. The storm water drains near the final outlets I & II were filled with water and when enquired, it was told that rain water. The small tank is constructed near the guard pond and it was observed that about 4 inches oily mark was visible. The water filled in this tank is transported to the rain water harvesting tanks through tankers.

v. The unit has not provided closed collection system to handle the odours of effluent streams. The oil-water separators and equalization tanks are not covered to trap the VOCs. Hence, during inspection a strong odour of VOCs was sensed by the Committee members in the ETP-I & IV, near bio-remediation ponds and at guard pond.

vi. The guard pond is filled with treated effluent of ETP-I & II and one through cooling water. It was observed that the oil was floating on the surface of the guard pond near the inlet of ETP treated water.

ix. During inspection, it was noticed spillages in the sludge processing area and scatter of sludge near the sludge lagoon ponds. The sludge lagoon ponds were not covered and the VOC

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measured by hand held instrument showed 8-9 PPM. In this area strong VOC was sensed by the committee members. The industry representatives informed that it is only local and is not carried to other area of the refinery.

xi. However, during inspection it was noticed that the 5 bins were empty and the remaining bins was filled with sludge, but on top of the sludge high oil sludge along with biofilms was dumped. The sludge was too dried and appears that it was not tilled and aerated for the growth of bacteria for the treatment.

xiii. It has been observed that project had display board at the main entrance gate. However, the critical parameters viz., stack emission, ambient air quality monitoring, water, noise, VOC, etc. data are not being displayed.

xiv. Thick black smoke emissions from the flare stacks were observed during inspection of the refinery. APPCB officials have also recorded in their reports during inspection of the refinery on 16.7.2020 and 30.11.2020, which indicate escape of incomplete and unburnt aromatic and aliphatic hydrocarbon emissions into the atmosphere.

xv. Refinery does not have inventory of unrecoverable volatile organics venting through the flare stacks for burning.

xvi. It has been observed that, vide ED dated 3.2.2004 and 2.9.2009 project was under expansion from 7.5 to 10.0 MMTPA. As per EC dated 11.2.2016, project is under expansion from 8.33 MMTPA to 15.0 MMTPA. However, during inspection, no information has been provided for expansion of project from 7.5 to 8.33 MMTPA.

xvii. It has been observed that the PAs are submitting the six monthly compliance reports with respect to latest EC dated 11.2.2016 only. However, compliance status of earlier granted EC's and monitored data of air, water, noise, etc. are not being submitted.

xviii. Compliance of standards/norms in terms of fugitive emissions and VOC emissions monitoring at ETP area are not being implemented as per Oil Refinery Industry notified under the Environment (Protection)

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<p><u>Rules, 1986 vide G.S.R. 186 (E) dated 18th March, 2008.</u></p> <p>xix. <u>The project had not provided a mobile laboratory with adequate facility to monitor ambient air quality outside the refinery premises. The condition has been imposed in the EC dated 30.5.1995. However, till date mobile laboratory was not provided.</u></p> <p>xx. As per C/O, there were 35 stacks were present in the project. However, continuous online stack monitoring facilities were provided for 32 stacks only.</p> <p>xxi. Monitoring of process emissions viz., SO₂, NO_x, HC (Methane & Non-methane), VOCs and Benzene from various units is not being done.</p> <p>xxii. The monthly Sulphur balance sheet of the refinery along with six monthly compliance reports. (sentence incomplete).</p> <p>xxiii. Facilities for monitoring of HS, mercaptan, non-methane-HC and Benzene at all CAAQ monitoring stations is not being provided.</p> <p>xxiv. The comprehensive water audit reports on annual basis are not being submitted to Ministry's Integrated Regional Office.</p> <p>xxv. It has been observed that the PAs are in process of developing green belt in and around the plant premises. However, it has been observed that the plantation around the project area is not satisfactory.</p> <p>xxvi. uploading of environmental statement for each financial year ending 31st March in Form-V on company's website is not being done.</p>	
<p>Development of 33 % total area as green belt:</p> <p>The Committee stated in the suggestion section of the report at page 25 that;</p> <p><u>"xii. To develop 33 % of total area as a green belt along the industry premises to stop the odour issues as well as to eliminate the fugitive emissions. The unit may plant the</u></p>	<p>The condition of Environment Clearance dated 30.5.1995 of MoEF states that;</p> <p>"17. The density of green belt within the plant area should be increased using native plant species in consultation with the local DFO."</p> <p>The Specific condition No. (viii) of Environment Clearance dated 7.3.2008</p>

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odour eliminating plants suitable for refinery industry."

of MoEF states that;

"viii. Greenbelt shall be provided to mitigate the effects of fugitive emissions all around the plant in a minimum of 33 % of the plant area in consultation with DFO as per CPCB guidelines.

It is submitted that the Union Ministry of Environment, Forest and CC mandated 33 % Green Belt as specific condition in all the Environment Clearances to safeguard the people living adjacent to the unit from the odour and other pollutions of the unit. But that is not implemented by the unit and admitted in their counter that the unit does not have sufficient land for plantation. The Specific condition in the EC of September, 2009 is reproduced as under:

"xviii. Greenbelt should be developed to mitigate the effect of fugitive emission all around the plant in a minimum 33% plant area in consultation with DFO as per CPCB guidelines."

In the compliance report filed by the Joint Committee also mentioned as under:

"Thick green belt shall be maintained all along the boundary of the industry with minimum area of 33 %. Existing Green belt shall not be disturbed in the proposed expansion/ construction activity.

Status : Not complied.

The industry has planted trees only on southern side, there is hardly any tree available at other three sides. There is no 33 % area of green belt in the industry."

That the HPCL Industry in its Counter Affidavit categorically stated at para 9.(ix) page 6 that it lacks sufficient space for the mandatory 33 % plantation within the industry premises. The relevant extracts states that

"ix. As there is shortage of space in refinery, for this shortfall in greenbelt, tree plantation on a massive scale has been carried out in various locations of

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	<p><u>Visakha" program. The Green Visakha and Vanam Manam programs were taken up by Respondents Visakha Refinery as per the directives of APPCB.</u></p> <p><u>It was communicated to MoEF that a plantation of 4,50,000 saplings out of targeted plantation of 6,50,000 saplings completed in 2015 as part of Green Visakha program. The balance 2,00,000 saplings plantation was completed in 2016.</u></p> <p><u>In addition, plantation of 10,000 saplings was competed in 2019 under Vanam Manam program."</u></p> <p>Since the unit itself stated on oath that it is not having sufficient land for maintaining the requisite 33 % Green belt and the compliance report also confirms that there is no green belt on 3 sides of the plant, the enforcing authorities are bound to restrict the unit's capacity according to the availability of natural resources, remediation measures including maintaining mandatory 33 % Green belt within the plant area to control odour and air pollution.</p> <p>But the MoEF, APPCB have allowed the unit for the massive expansion of the capacity even though the unit failed to comply the bare minimum conditions according to the Environment Clearance.</p> <p>It is further shocking that the Joint Committee consisting of MoEF, CPCB and APPCB have not proposed/initiated action against the Unit as it is a Central Government Public Sector Unit. This is completely illegal and contrary to the Environment (Protection) Act, 1986 and Article 14, 21 of the Constitution of India.</p>
<p>Compliance of IISc Report of 2016:</p> <p>The Recommendations made by the IISc, Bengaluru are:</p> <p>i. Even if industries follow good practices and maintain emission within the limits, there are possibilities of episodic odour issues. In such cases, it is the responsibility of each and every industry in the region towards community to cooperate and participate</p>	<p>Except reproducing few recommendations of IISc, Bengaluru report, Joint Committee has not made any remarks or observations.</p> <p>It is submitted that the Industry and APPCB have assigned the task of conducting study to IISc, Bengaluru in 2012 after PCB and District Administration received many public complaint in October-November, 2011. After prolonged study conducted by</p>

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<p>in taking the odour problem in Visakhapatnam area.</p> <p>ii. APPCB being nodal agency, should form an odour squad comprising members from APPCB, each stakeholder industry, prominent community members and experts in environment field. The task of the squad should include:</p> <ul style="list-style-type: none"> • In case of any episode, the APPCB nominate to inform all members about the complaint and location. • The squad to visit the site and take ambient air samples in Tedler bags which should be stored under appropriate conditions and transported immediately (for GC-MC analysis) to recognized laboratory. • Upon received the complaints from the squad, each industry should check for abnormal emissions or operating conditions if any, in their industry and report to APPCB and take necessary actions. <p>iii. APPCB should initiate a community medical study to correlate the mortality rate before and after the odour episode for compare the data during non-episodal to evaluate the hazard.</p>	<p>IISc for four years, it has submitted the report in 2016.</p> <p>But till now the recommendations of the IISc have not implemented by Industry. It is evident from the counter affidavit of the Industry at page number 8, para 9.(iii) that "in line with the directions issued by the Task Force of APPCB, Respondent has placed a Purchase Order on M/s Glens Innovation Labs Pvt. Ltd, Chennai, for conducting odour study at Respondents' Visakha Refinery, which will be wetted by IIT-Madras. The work will commence in April, 2021."</p> <p>Further in the table at Annexure 1 of the Counter of Respondent Industry shows that the recommendations of IISc were not implemented. The responsibility for stopping odour/implementing IISc recommendations was thrown on APPCB and Odour squad by the industry.</p> <p>That the Joint Committee has not verified this aspect of compliance of IISc, Bengaluru report.</p> <p>That in the Compliance report at page 187 of JC Report, it was mentioned that;</p> <p>"16. Odour control systems shall be improved at the Merox plants and ETP areas. The industry shall not cause any odour nuisance problem.</p> <p>Status: Not complied.</p> <p>During the inspection, committee experienced strong VOC odour at all the ETPs and also at the guard ponds. The Merox plant was not in operation, hence could not be verified.</p> <p>The Industry has not installed VOC Stripper in ETP System"</p>
<p>Air pollution:</p> <p><u>"The results shows that the values of Pm10 & PM2.5 values are exceeding the 24 hour average standards. The SO2 value at the North-est corner of the industry near ETP-IV is exceeding the standard. The values of SO2 & NOx, though not exceeding the standard limits, found far higher than the values obtained at the locations elsewhere in Visakhapatnam city. This</u></p>	<p>The Specific Condition (iv) of EC dated 2.9.2009 mandated the Industry that "the Company shall undertake measures for control of dust emission during construction and traffic congestion."</p> <p>This condition is clearly violated by the Unit.</p>

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<p><u>indicates that there are leaks in the process systems through which, PM10, PM2.5, SO2, NOx etc. are find their way into the ambient air as fugitive emissions.</u></p> <p>Water Pollution:</p> <p>"From the analysis results, it is observed that the values of Total suspended Solids, Biochemical Oxygen Demand and Ammonical Nitrogen are exceeding the stipulated standards for the sample collected ETP-IV (ACF outlet) and TSS Value in ETP-I outlet.</p>	
<p>Non-compliance of Conditions ECs & Corporate Social Responsibility:</p> <p>The Joint Committee has not referred anything about the following aspects mandated in Environment clearances;</p> <ul style="list-style-type: none"> • Corporate Responsibility for Environmental Protection (CREF) • scheme for social upliftment in surrounding villages • Charter on Corporate Responsibility for Environment Protection (CREP). • Rs. 150 Crores shall be earmarked towards the Enterprise Social responsibility based on Public Hearing • Adequate funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures • Corporate Social Responsibility 	<p>The condition of Environment Clearance dated 30.5.1995 of MoEF states that;</p> <p>"18. Various socio-economic schemes should be initiated by HPCL so as to improve the socio-economic environment in the region.</p> <p>The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory. The above stipulated condition will be monitored by the Ministry's Regional Office."</p> <p>The General condition No. xi of Environment Clearance dated 7.3.2008 of MoEF states that;</p> <p>"xi. The project proponent shall have a scheme for social upliftment in surrounding villages with reference to contribution in road construction, education, health centers, sanitation facilities, drinking water supply, community awareness and employment to local people whenever and wherever possible both for technical and non-technical jobs. CSR activities will be undertaken by involving local villages and administration.</p> <p>The Specific condition No. xxi of Environment Clearance dated 2.9.2009 of MoEF states that;</p> <p>"xiii. The company should strictly follow the recommendation mentioned in the charter on Corporate Responsibility for Environmental Protection (CREF) for the oil refineries."</p> <p>The Specific condition No. xxi of</p>

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Environment Clearance dated 11.2.2016 of MoEF states that;

"xxi. The company shall strictly follow all the recommendation mentioned in the Charter on Corporate Responsibility for Environment Protection (CREP).

xxv. As proposed, Rs. 60 Crores shall be earmarked towards the Enterprise Social responsibility based on Public Hearing issues and item wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office at Chennai. Implementation of such program shall be ensured accordingly in a time bound manner.

General Conditions:

vi. Adequate funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures and shall be used to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purposes.

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

Similarly in the General Conditions of EC dated indicates that;

6.0. The Ministry may revoke or suspend the clearance, if implementation of any of the above condition is not satisfactory."

It is humbly submitted that the Unit has not spent the above allocations for pollution control measures, providing safe and healthy environment and livelihood to residents living in neighboring villages.

That the Unit is not disclosing the works undertaken under CSR/CREP/CREF schemes. The entire money which is supposed to spend on pollution control measures, remedial action plan and livelihood, health facilities to the people living in the surrounding areas has been diverted to some other places.

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	<p>That the MoEF and CFOs though mentions that the EC/approval will be revoked if the Unit does not implement any of the conditions. But that is not implemented by regulatory agencies.</p>
<p>Fire Accidents:</p> <p>A fire accident occurred at M/s. HPCL, Visakha Refinery in Crude Distillation Unit-III (CDU- II) on May25, 2021 at 15.10 hrs.</p>	<p>That the ECs and CFO granted to PP categorically mandates the unit to take all safeguards to prevent accidents.</p> <p>But the recent accident on 25.5.2021 took place due to lack of maintenances of the pipelines resulted leakage and created massive fire accident.</p> <p>Though this lacuna was found by MoEF, CPCB and APPCB, they did not take action on the unit or responsible person.</p> <p>Prior to the accident of 25.5.2021, there were several accidents occurred in the Unit.</p> <p>It is further submitted that the Unit does not obtain NoC from Fire department. This was evident from the compliance report attached to the Joint Committee report.</p>
<p>Setting up of Laboratory:</p> <p>JC found that lab was not setup from 1995.</p>	<p>The condition of Environment Clearance dated 30.5.1995 of MoEF states that;</p> <p>"21. The project Authority should set up laboratory facility for collection and analysis of samples under the supervision of competent technical personnel, who will directly report to the Chief Executive."</p> <p>This condition has been violated by the project proponent for the past 26 years. But no action was taken by the MoEF and APPCB and the Joint committee also not made any recommendation for non-compliance.</p>
<p>Environment Compensation proposed by Joint Committee:</p> <p>"ii. Number of days of violations (N): The number of days for which violation took place is considered as the period between the day of violation observed and day of compliance verified by the CPCB/APPCB. From the available records, APFCB issued directions to HPCL on March 19, 2020 and committee verified the compliance on March 25, 2021. Based on the criteria, 371 days (from 19.3.2020 to 25.3.2021 including both the days) is considered for calculator of period of violation for</p>	<p>The Joint Committee has adopted very lenient view against M/s. HPCL Refinery though the Unit is found to be violating most of the conditions of MoEF and APPCB. That the JC on the one hand stated that some of the conditions are not complied from 1995.</p> <p>It is shocking that being the member of Joint Committee, APPCB has not revealed the actual date of violations.</p> <p>It is humbly submitted that the complaints on Odour pollution and other violations were received by APPCB in October-November of 2011.</p>

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<p>estimating EC.</p> <p>v. Factor in Rupees(R) (Rs): As per the environmental compensation estimation guidelines, factor of rupees may be minimum of Rs. 100/- and maximum of Rs. 500/-. The Committee decided to take rupee factor as Rs. 100/- for estimating environmental compensation as there was no environmental damage caused by these non-compliances.</p> <p>Period of non-compliance 19.3.2020 to 25.3.2021 i.e. 371 days.</p> <p>Total EC for violation: 89,04,000/-</p>	<p>On the directions of APPCB, IISc, Bengaluru was engaged by M/s. HPCL to conduct studies.</p> <p>It is further submitted that the APPCB was also issued directions on 3.10.2021 based on the inspections conducted on 27.7.2016. This order of APPCB was annexed by the Applicant at page number 151 of the Original Application.</p> <p>But the Joint Committee without verifying the complete record, considered only 371 days as days of violation. It is further submitted that Joint Committee chose to impose Rs. 100 per day against Respondent industry though there is provision for imposing Rs. 500 per day according to CPCB formula.</p> <p>The above approach is completely illegal and violative of Article 14, 21 of the Constitution of India.</p> <p>Further, it is submitted that according to the compliance chart placed at page no. 183 of the Joint Committee report categorically indicates that the Industry is not complying the mandatory conditions of EC and CFO. Though the JC found that the violations are still continuing, it has chosen to impose fine for only 371 days.</p> <p>In case of OA No. 148 of 2021, the Joint Committee consisting of MoEF, CPCB and other have imposed Environment Compensation for the entire period right from starting of works of irrigation project to as on the day of filing the report before the Hon'ble Tribunal.</p> <p>This formula must be implemented in the present case in hand.</p> <p>True copy of the Joint Committee Report filed in OA No. 148 of 2021 dated 30.9.2021 is annexed as ANNEXURE A1.</p>
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4. It is humbly submitted that Applicant has annexed an Order passed by the Ld. Principal Bench of this Hon'ble Tribunal with regard to pollution caused by Indian Oil Corporation (IOCL) refinery at Panipat at page no. 378 of Original Application. The relevant extracts of the Order dated 24.7.2020 in OA No. 738 of 2018 (PB) are reproduced as under:

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"2. Violation of environmental norms was established from report dated 15.11.2013 by a joint team comprising Central Pollution Control Board (CPCB), Haryana State Pollution Control Board (HSPCB) and Deputy Commissioner, Panipat which found that the samples from the Effluent Treatment Plant (ETP) of the unit were found to be noncompliant. Ambient air quality was exceeding the norms. VOCs were resulting in irritation to eyes and odour which was observed by the joint team during inspection. Untreated effluent was found to be discharged in the green belt areas. Unit was not complying with the conditions of recycling and reusing treated water. ETP was not being operated efficiently and was not adequate. Untreated effluents were being stored in open storage lagoon without VOC recovery system. The ground water samples were not complying with the norms.

3. After noting the finding of the joint Committee, the Tribunal directed remedial action and sought a further report from the joint Committee. Further report was furnished on 09.05.2019 showing continued violation of law. The joint Committee assessed compensation in monetary terms at Rs. 17.31 Crores to which IOCL filed objections and directed the deposit of the amount within one month. This order was affirmed by the Hon'ble Supreme Court in Civil Appeal No. 5108/2019 filed by the IOCL leaving it open to the IOCL to raise objections before this Tribunal.

4. The State PCB in its report dated 16.08.2019 submitted that prosecution was initiated against the unit and the responsible officers on 05.08.2019. Status of prosecution is not known. The CPCB gave its further report dated 09.08.2019 on assessment of damage and cost of restoration with respect to Oxygen depletion and Pollution caused to the surface water due to illegal discharge of effluent. CSIR-NEERI also gave its report dated 02.08.2019 on assessment of damage caused to public health & environment. The CGWB gave its report dated 05.09.2019 on assessment of damage caused to ground water and cost of restoration. The said reports were considered on the last hearing on 26.11.2019. The Tribunal observed:-

"11 The report of CPCB concludes the liability for environmental compensation as follows:

"The following may also be incorporated in the Conclusion Section

The environmental compensation (EC) calculated by the Joint team is as under:

- i) EC for Oxygen depletion and Pollution caused to the surface water due to illegal discharge of effluent: **Rs. 26.90 Crores**
- ii) EC for damage caused to public health & environment : **Rs. 92.59 Crores**
- iii) EC on account of damage caused to ground water : **Rs. 540 Crores**

Total Environmental Compensation as calculated by the Joint team is : 26.90 + 92.59 + 540 = Rs. 659.49 Crores, out of which IOCL has already deposited Rs. 17.31 Crores, as interim compensation in compliance of Hon'ble NGT Order.

Therefore, balance environmental compensation to be deposited is: 659.49-17.31 = Rs. 642.18 Crores, if approved by Hon'ble NGT.

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8. Learned counsel for the CPCB and the State PCB dispute the self-serving claim of compliance by the IOCL contrary to the report of the joint committee based on site inspection, it is further submitted that the timelines were going

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upto March, 2022 to remedy storm water contamination and other long timelines even after two years of directions and monitoring by this Tribunal. It is submitted that the stand of the IOCL shows lack of sensitiveness to the fundamental rights of the inhabitants to clean environment. The IOCL is either denying its responsibility or delaying performance of its obligation. In these circumstances, IOCL be required to deposit the compensation assessed for damage already caused to the environment and public health so that remedial steps can be taken.

9. We find merit in the stand of the CPCB and the State PCB in view of independent joint Committee report showing continued discharge of pollution by the IOCL in water bodies. The IOCL has failed to take effective and adequate steps even during long interval available after the last hearing though such action was expected. It was on that expectation that requirement of paying assessed compensation was deferred. A PSU has to be model of compliance with the environmental norms which unfortunately is found lacking in the present case.

10. Accordingly, we direct the IOCL to take initiative on day to day basis and comply with all the observations of the joint Committee positively within six months. This will not debar the State PCB from initiating prosecution for violation of provision of the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 against the Company and its senior officers who failed to prevent commission of crime, as per statutory mandate.

11. We also direct the IOCL to deposit a further sum of Rs. 25 Crores with CPCB so that the amount earlier deposited with amount to be now deposited can be spent on restoration of environment and public health by making a restoration plan by the CPCB, State PCB and the District Magistrate, Panipat. Such plan may be prepared within three months and same may be duly executed. The deposit of the amount by the IOCL may be made within one month from today with the CPCB. Issue of final liability for compensation will be decided on next date in the light of progress in performance by IOCL. The action plan may cover restoration activities to be undertaken outside the Company's premises for restitution of environment including public safety, health and hygiene. It will be open to the Committee to get action plan executed through company itself or otherwise and ensure regular monitoring the process of implementation."

5. That the Applicant requested a Hyderabad based Scientific organization consists of retired Scientists and academicians namely "Scientists for People" to review the reports of the Joint Committee. The Organization concluded that the Joint Committee has not properly gone into the issues of pollution caused by M/s. HPCL Refinery and also held that Joint Committee incorrectly calculated the Environment compensation.

True copy of the Observations of "Scientists for People", Hyderabad on Joint Committee reports in OA No.73 of 2021 is annexed as ANNEXURE A2.

6. It is humbly submitted that Joint Committee report confirms that the Project proponent, a Central government Unit has been continuously violating the mandatory conditions directed by MoEF and APPCB. It is further submitted that there is shortage of space in the refinery for mandatory plantation prescribed in EC granted by MoEF. The compliance report also found that the unit has

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VISAKHAPATNAM
ANDHRA PRADESH
INDIA

plantation only on south side and remaining 3 sides there is no plantation which is resulting odour and air pollutions. That the PP being a responsible Public Sector Unit, must have abide by the mandatory rules and conditions imposed by the regulating authorities. But it has failed and trying to mislead this Hon'ble Tribunal and regulating authorities. The Regulating agencies also adopting lenient approach against the Project Proponent as it is Central Government Public Sector Unit. It is humbly submitted that the Regulatory authorities of MoEF and CPCB/PCB have adopted transparent and deterrent approach in case of Indian Oil Corporation (IOCL) Panipat, whereas in case of M/s. HPCL Refinery, Vishakhapatnam, though they are confirming the massive violations, the authorities adopted soft approach contrary to the law and formula prescribed by the CPCB and the directions passed by the Hon'ble National Green Tribunal and Hon'ble Supreme Court of India.

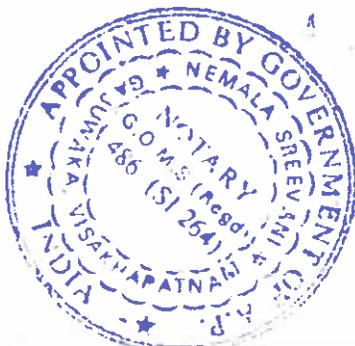
7. In the above facts and circumstance, it is prayed that the Joint Committee and the Regulatory agencies may be directed to relook the entire situation and stop the production/expansion of the project as the Refinery is lacking the 33% mandatory Green Belt and several safeguards and conditions are continuously violated by the Project proponent right from 1995. It is further prayed that the unit may be directed to implement the crucial conditions imposed in Environment Clearance such as (i) Corporate Responsibility for Environmental Protection (CREP),(ii). Scheme for social upliftment of people in surrounding villages,(iii). Charter on Corporate Responsibility for Environment Protection (CREP), (iv).Rs. 60 Crores towards the Enterprise Social responsibility based on Public Hearing, (v).Adequate funds towards capital cost and recurring cost/annum for environment pollution control measures, (vi). Corporate Social Responsibility besides pollution control measures mandated by MoEF and APPCB.

H. Anand

DEPONENT

VERIFICATION:-

Verified on this the 3rd day of October, 2021 at Visakhapatnam, Andhra Pradesh that the contents of the above affidavit are true and correct. No part of it is false and nothing material has been concealed therefrom.



Commission Expires on 29-7-2022

NEMALA SREEVANI, B.A.,B.L.
ADVOCATE & NOTARY
 D.No: 8-1-112, Jugavanipalem
 Opp: Panthulugari Meda
 Near Visakha Eye Hospital
 Gajuwaka, Visakhapatnam Dt
 Cell: 9490229889 9247585335

H. Anand

DEPONENT

ATTESTE

Agreed
 31/10/2021
 NOTARY

VISAKHAPATNAM
 ANDHRA PRADESH
 INDIA

REPORT ON THE SITE VISIT OF THE TEAM OF JOINT COMMITTEE CONSTITUTED BY THE HON'BLE NGT IN O.A. No. 148/2021(SZ) FOR INVESTIGATION IN CONNECTION WITH PARAMULU RANGAREDDY LIFT IRRIGATION SCHEME (PR LIS) IN TELANGANA

1. BACKGROUND

Shri D. Chandramouleswara Reddy s/o D. Shankar Reddy, resident of Singapore Township, Puttampally, YSR Kadapa, Andhra Pradesh and 8 (eight) other applicants filed O.A. No. 148/2021 in the Hon'ble National Green Tribunal (SZ), Chennai that the construction of the Palamuru Rangareddy Lift Irrigation Scheme, Telangana is taken up in violation of the provisions of environmental laws and against the undertaking given by them in the earlier proceedings.

The Hon'ble National Green Tribunal (NGT) Southern Zone, Chennai, has constituted Joint Committee in OA of 147 & 148 of 2021 of NGT and its members as per the OA 148 of 2021 (date of hearing: 15.07.2021) para 11 of the order on the above subject matter are as follows:

1. Sr. Officer, MoEF & CC, GoI, Integrated Regional Office, Chennai or its subsidiary office at Hyderabad, if any;
2. Sr. Scientist, Central Pollution Control Board, Integrated Regional Office, Chennai;
3. District Collector, Mahaboob Nagar, Telangana;
4. Director, Geology & Mining Dept., Telangana or Sr Officer having sufficient knowledge and experience in soil technology deputed by Director;
5. Sr. Scientist, NEERI, IICT Colony, Tarnaka, Secunderabad, Telangana;
6. Sr. Officer, Central Water Commission, Sewa Bhavan, R.K.Puram, New Delhi.

The para 17 of the order stated that *“the Director, Geology and Mining Department will be the nodal agency in this case also for providing necessary logistics and also for coordination for this purpose.”*

However, in its order dated 27.08.2021 in O.A. No. 147 of 2021 (SZ) & I.A. No. 113 of 2021 (SZ) the Hon'ble NGT modified the combination of the committee under para 10 stated as under:

“So under such circumstances, it is better not to involve the State authorities or the persons who have been appointed as the nodal agency, as they are showing lethargic attitude in coordinating the meeting and conducting inspection. So we feel that it is necessary to make some change in combination of the committee and since

it involves the water sharing dispute between the State of Telangana & State of Andhra Pradesh and such matter are being considered by Krishna River Management Board, we feel it appropriate to include a Senior Officer from the Krishna River Management Board also as one of the members of the committee and instead of Mining & Geology Department, State of Telangana/Nodal Agency, Krishna River Management Board can be designated as the nodal agency so that they can coordinate and make the inspection at the earliest possible time.”

2. CONSTITUTION OF THE TEAM

In the light of the direction of the Hon'ble NGT in making change in the combination of the committee and the designation of KRMB as the Nodal Agency to coordinate and to expedite the inspection, the Joint Committee constituted by the Hon'ble NGT were contacted to nominate members. Accordingly, the following composition of members are nominated by the organisations for the Joint Committee to inspect the areas in question and to submit factual report as well as action taken report, if there is any violation found:

1. Dr. E. Arockia Lenin, Scientist 'C', IRO, MoEF&CC, Hyderabad;
2. Smt. Poornima B.M., Scientist 'D', CPCB, IRO, Chennai;
3. Dr. Shaik Basha, Sr. Pr. Scientist, Zonal Centre, NEERI, Hyderabad (Dr. P.R. Meganathan, Scientist represented on the site);
4. Shri S. Venkat Rao, IAS, District Collector, Mahabub Nagar, Telangana;
5. Shri P. Vijaya Ramaraju, Assistant Diector, Mines & Geology, Mahabub Nagar;
6. Shri M. Ramesh Kumar, Director, CWC, KGBO, Hyderabad;
7. Shri L.B. Muanthang, Member (Power), KRMB (Nodal Agency), Hyderabad.

As per the O. A. No. 148/2021(SZ) the Committee was directed to ascertain:

- i) Whether there were any violations of environmental laws on committed by the State of Telangana in carrying out the project in question.
- ii) Whether there is any violation committed violating the provisions of the EIA Notification, 2006 and without conducting any Environment Impact Assessment Study and preparing Environmental Management Plan and damage has been caused to the environment on account of the same.
- iii) Whether the project was launched contrary to the undertaking given by them that they are confining to drinking water project alone, but expanded the scope for Irrigation project as well.
- iv) Whether the present project under challenge requires prior Environmental Clearance and if not obtained, what is the nature of damage caused and if so, assess the environmental compensation,

- v) Whether people have been displaced due to the project in violation of the undertaking given that the project will not result in displacement of people.

3. COMPONENTS OF THE PR LIFT IRRIGATION SCHEME

The Palamuru Rangareddy Lift Irrigation Scheme, as reported by the Project proponent, is envisaged to lift 90 TMC of flood water in 60 days from foreshore of Srisailem Reservoir on Krishna River to provide drinking water to enroute 1226 villages in 70 mandals, Hyderabad city, irrigation facilities to 12.30 lakh acres and industrial use in Nagarkurnool, Mahabub Nagar, Narayanpet, Vikrabad, Rangareddy and Nalgonda districts. The Government of Telangana have accorded the administrative approval for Rs. 35,200 cr.

The water is proposed to be lifted in 5 (five) stages through Pumping stations from elevation +240.00 m from the foreshore of Srisailem reservoir at Yellur Village, Kollapur Mandal to the elevation +670.00 m at K.P. Lakshmidvipalli village, Kondurg mandal.

This project comprises of Pumping stations, Tunnels and Storage reservoirs for irrigation, drinking, and industrial use.

The stages of the Lift Irrigation Scheme are:

Stage-I: Anjanagiri Reservoir & Pump House at Narlapur village. This Lift-I comprises of 8 (eight) pumps of 145 MW each (8 x 145 MW) with pumping capacity of 85 cumecs each to lift to a head of 104 m. Live capacity of the reservoir is 5.84 TMC.

Stage-II: Veeranjaneya Reservoir & Pump House at Yedula village. This Lift-II comprises of 9 (nine) pumps of 145 MW each (9 x 145 MW) with pumping capacity of 75 cumecs each to lift to a head of 124 m. Live capacity of the reservoir is 5.91 TMC.

Stage-III: Venkatadri Reservoir & Pump House at Vатtem village. This Lift-III comprises of 9 (nine) pumps of 145 MW each (9 x 145 MW) with pumping capacity of 75 cumecs each to lift to a head of 121 m. Live capacity of the reservoir is 16.40 TMC.

Stage-IV: Kurumurthiraya Reservoir & Pump House at Karivena village. This Lift-IV comprises of 5 (five) pumps of 145 MW each (5 x 145 MW) with pumping capacity of 75 cumecs each to lift to a head of 122 m. Live capacity of the reservoir is 18.49 TMC.

Stage-V: Udandapur Reservoir & Pump House at Udandapur village. This Lift-V comprises of 3 (three) pumps of 75 MW each (3 x 75 MW) with pumping capacity of 55 cumecs each to lift to a head of 87.50 m. Live capacity of the reservoir is 15.76 TMC.



Lat: 16.109°N Long: 78.356°E

Dump of muck from the tunnels and pump house at Narlapur Village.



Lat: 16.111°N Long: 78.383°E

Ongoing works of tunnel excavation and pump house at Narlapur village.



Lat: 16.109°N Long: 78.385°E

Dump of muck from the tunnels and pump house at Narlapur and workers camp.



Lat: 16.109°N Long: 78.385°E



Lat: 16.323°N Long: 78.291°E

Ongoing works for pump house at Yedula Village.



Lat: 16.323°N Long: 78.291°E



Lat: 16.543°N Long: 78.207°E

Ongoing works for Reservoir at Vattem Village



Lat: 16.839°N Long: 78.057°E

Ongoing works for Reservoir at Karivena Village



Lat: 16.839°N Long: 78.057°E

Ongoing works for Reservoir at Uddandpur Village

5. CONCLUSION:

The Joint Committee members visited the Palamuru Rangareddy Lift Irrigation Scheme reservoirs of Narlapur, Yedula, Vatttem, Karivena and Uddandapur on 15.09.2021 and 16.09.2021. Again, the Committee met in KRMB office on 20.09.2021 and deliberated on this matter and submitted interim report on 21.09.2021. The Joint Committee is, however, directed to submit a report on 01.10.2021 by the Hon'ble NGT. The inspection report with the available data is finalized on 30.09.2021.

The committee is of the view that Palamuru Rangareddy project is conceived as an irrigation scheme to lift 90 TMC ft of flood water in 60 days from the foreshore of Srisailam Reservoir situated on Krishna river. At the location of the foreshore, eight (8) pumps of discharge capacity 85 cumecs were envisaged totalling to 680 cumecs which is equivalent to 2.07 TMC ft per day in 60 days it will amount to 120 TMC ft instead of the mentioned 90 TMC ft. On probing further, it came to light that the additional 30 TMC ft capacity is envisaged to supplement the nearby Dindi project. At this location which is called Narlapur Reservoir site, excavation of twin tunnel is under progress and the muck excavated from the tunnel is dumped nearby without any environment management plan. It was explained by the project proponent that this muck shall be utilised as construction material and hence the dump is temporary. Similar situation is found in all other reservoir sites by name Yedula, Vatttem, Karivena and Uddandapur.

The Palamuru Rangareddy LIS was granted ToR vide their letter No.: J-12011/31/2017-IA-I (R) dt.11.10.2017 for preparation of EIA/EMP report and the MOEFCC accorded a fresh clearance for doing pre-construction activities at the proposed site as per the provisions of the EIA Notification 2006. In the above cited ToR letter, it was mentioned “*it was noted that the scheme in its first phase envisaged lifting of 90 TMC of flood water in 60 days during the flood season from the foreshore of the Srisailem Reservoir on Krishna river through five separate stages to provide drinking water facilities in*”. However, during discussion, it came out that the drinking water requirement for the enroute villages is only 7.15 TMC ft whereas 90 TMC ft is for the entire project consisting of majorly irrigation, drinking water (7.90%) and industrial requirements.

Hence, the committee, except members at Sl. No. 4 & 5, is of the view that head works being constructed are for creating 90 TMC ft capacity for the entire project in which drinking water is a minor component.

The committee was directed to ascertain -

(i) Whether there were any violations of environmental laws committed by the State of Telangana in carrying out the project in question:

The Ministry of Environment, Forest and Climate Change (MoEF&CC) has accorded Terms of Reference (ToR) to project proponent vide letter dated 11.10.2017 for carrying out pre-construction activities only, whereas it is found that full scale construction is going on. Hence, the committee is of the view that there are violations with regard to the environmental laws.

(ii) Whether there is any violation committed violating the provisions of the EIA Notification, 2006 and without conducting any Environment Impact Assessment Study and preparing Environmental Management Plan and damage has been caused to the environment on account of the same:

As per the EIA Notification, 2006, this project requires prior environmental clearance as it falls under item i(c)(ii) of the EIA Notification. In the present case, the envisaged command area is 4,97,976 ha. Prior EC clearance has to be accorded at centre level. Ministry of Environment, Forest and Climate Change has accorded Terms of reference (ToR) to project proponent vide letter dated 11.10.2017 for carrying out pre-construction activities only. Hence, the

committee, except members at Sl. No. 4 & 5, is of the view that the provisions of EIA Notification, 2006 were violated in carrying out the construction activities. However, members at Sl. No. 4 & 5 have opined that the ongoing construction activities are for drinking water purpose only.

- (iii) The committee is also directed to ascertain as to whether the project was launched contrary to the undertaking given by them that they are confining to drinking water project alone, but expanded the scope for irrigation project as well:**

The Palamuru Rangareddy LIS is conceived as an irrigation scheme to lift 90 TMC ft out of which the drinking water component is only of 7.15 TMC ft. It is opined by the Committee, except members at Sl. No. 4 & 5, that the construction activities are being carried out for creating the full 90 TMC ft capacity. Thus, it cannot be said that the project proponent has confined themselves to the drinking water project alone. Members at Sl. No. 4 & 5 have opined that work relating to drinking water purpose only being undertaken.

- (iv) Whether the present project under challenge requires prior Environmental Clearance and if not obtained, what is the nature of damage caused and if so, assess the environmental compensation:**

The observation on prima facie evidences by Joint committee are mentioned below,

- Huge amount of earthen/rock materials are excavated and dumped in various locations. Dumping of Over Burden or excavated materials and stabilisation of OB dumps are not carried out properly especially along the river side.

The labourers engaged for construction works have to be examined by health personnel and adequately treated before issuing them work permit.

As directed by Hon'ble NGT the environmental compensation and immediate restoration measures are given below

- (v) Whether people have been displaced due to the project in violation of the undertaking given that the project will not result in displacement of people:**

During inspection, it was observed that the construction of reservoir was in progress and the Tandas & villages located in the submerged area of the

reservoir had been displaced. Hence, there is a displacement of people due to the project and R & R policy is being implemented by the State Government.

6. ASSESSMENT OF ENVIRONMENTAL COMPENSATION

The environmental compensation is calculated based on following formula of CPCB

$$E=PI \times N \times R \times S \times LF$$

S.No.	Period of non-compliance	PI	S	LF	R (Rs)	N (days)	Environmental compensation (Rs)
1	02.05.2016 to 30.09.2021	50	1.5	1	250/-	1978	3,70,87,500/-
Total EC for violation of environmental norms							3,70,87,500/-
Rupees three crores seventy lakhs eighty seven thousand five hundred only							

Where,

E=Environmental compensation

PI=Pollution index of industrial sector (average PI of 50 is taken for orange category)

N=Number of days violation took place (three years = 1916 days: 01.07.2016 to 29.09.2021)

R= A factor in Rupees for EC (250 is considered for environmental compensation for violation)

S = Factor for scale of operation (medium scale of 1 is considered)

LF = Location factor (1 is considered for less than one million population)

Therefore, it is submitted that an amount of Rs. 3,70,87,500/- is calculated as environmental compensation.

7. REMEDIAL MEASURES TO RESTORE THE DAMAGE CAUSED TO THE ENVIRONMENT:

Recommendations for Immediate Remedial measures for restoration of environment are given below for implementations:

- A separate environment cell needs to be established to restore the environment damage is caused already. Allocations budget and implementations of environment management protection measures to be maintained in separate account.

- Restoration of construction area including dumping sites of excavated materials shall be ensured by levelling, filling up of borrow pits, landscaping etc. The area should be properly treated with suitable plantation.
- Environmental parameters such as surface & ground water and ambient air quality shall be monitored and six monthly monitoring reports shall be submitted to the concerned Regional Office of the Ministry and to Ministry
- Permission to be obtained from TSPCB for using stone crushers & ready mix and shall take necessary precautions to prevent the fugitive emissions.
- The PP shall adhere with the Solid Waste Management Rules, 2016 and dispose the waste as per the rules without polluting the river & soil. If, require shall take advice from TSPCB for the disposal of Biodegradable & non-biodegradable waste generated from the labour colonies.
- The sewage generated from the labour colonies need to be treated before disposing into river or ground. The PP shall provide temporary bio toilets or septic tank for the management of sewage.
- Dump stabilisation, catch drains, green belt and desiltations are to be carried out properly.
- Water sprinkling arrangements shall be made to suppress the fugitive emissions
- Used drums, vehicles, scraps, pipes and other materials have to be disposed off with TSPCB authorised vendor.
- The proposed green belt development around various project appurtenances, colony rows with ornamental plants in consultation with State Forest Department shall be strictly adhered to.
- Occurrence of stagnant pools/slow moving water channels during construction and operation of the project providing breeding source for vector mosquitoes and other parasites. The river should be properly channelized so that no smell pools and puddles are allowed to be formed
- The equipment likely to generate high noise levels during the construction period or otherwise shall meet the ambient noise level standards as notified under the Noise Pollution(Regulation and Control) Rules, 2000, as amended in 2010 under the Environment Protection Act (EPA), 1986
- Permission shall be obtained from forest department if, cutting of trees is involved in the submergence area.

- Given the above facts and circumstances, the Hon'ble NGT may pass order as deemed fit.

8. RECOMMENDATIONS OF THE COMMITTEE:

- i. The project proponent (Irrigation department, GoT) is directed to obtain the Environmental Clearance from MoEF&CC and other statutory post facto clearances from the concerned departments/organisations.
- ii. The PP shall engage a private environmental laboratory recognised by MoEF&CC or CPCB and shall monitor surface & ground water and ambient air quality once in a month and submit the analysis report to Regional Office of MoEF&CC and Telangana State Pollution Control Board (TSPCB).
- iii. The PP shall obtain permission from TSPCB for using stone crushers & ready mix and shall take necessary precautions to prevent the fugitive emissions.
- iv. The PP shall adhere with the Solid Waste Management Rules, 2016 and dispose the waste as per the rules without polluting the river & soil. If, require shall take advice from TSPCB for the disposal of Biodegradable & non-biodegradable waste generated from the labour colonies.
- v. The sewage generated from the labour colonies need to be treated before disposing into river or ground. The PP shall provide temporary bio toilets or septic tank for the management of sewage.
- vi. The PP shall pay Environmental compensation of **Rs. 3,70,87,500/-** (Rupees three crores fifty nine lakhs twenty five thousand only) to CPCB/ TSPCB towards violation of environmental norms for constructing the project without Environmental Clearance.

9. A SPECIAL NOTE AND OBSERVATIONS OF THE MEMBERS OF THE COMMITTEE AT S. No. 4 i.e., SH. S.VENKAT RAO, IAS, DIST.COLLECTOR, MAHABUBNAGAR & S. No. 5 i.e., SH. P.VIJAYA RAMA RAJU, ASST.DIRECTOR OF MINES & GEOLOGY (FAC), MAHABUBNAGAR.

Had an occasion to peruse the report of joint committee constituted by the Hon'ble NGT, We respectfully disagree with the most of the findings of the Committee regarding purpose of the project and differed and submitted following few lines for consideration of the Hon'ble NGT.

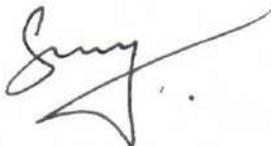
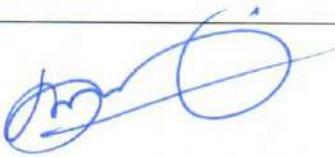
Pursuant to the order of this Hon'ble Tribunal dated 15.7.2021, the Committee to which we are also members, visited the Project site on 15.9.2021 and 16.9.2021. During the visit, it is noticed that though the subject project has two components i.e, drinking water and irrigation purposes, the work relating to only drinking water purpose is being undertaken. The Chief Engineer has informed that for the purpose of executing irrigation component of the Project Environmental Clearance from the Ministry of Environment and Forests, T.O.R. has been accorded in regard to irrigation component Phase-II. Further, public hearing was held on 10.8.2021 the application of Environmental Clearance is under active consideration.

Report dated : September 30, 2021

Place : Hyderabad, Telangana

Signatures of the Committee Members

S.No	Name and Designation	Signature
1	Dr. E. Arockia Lenin, Scientist 'C', IRO, MoEF&CC, Hyderabad	
2	Smt. Poornima B.M., Scientist 'D', CPCB, IRO, Chennai;	
3	Dr. Shaik Basha, Sr. Pr. Scientist, Zonal Centre, NEERI, Hyderabad (Dr. P.R. Meganathan, Scientist represented on the site);	

4	Shri S. Venkat Rao, IAS, District Collector, Mahabub Nagar, Telangana;	
5	Shri P. Vijaya Ramaraju, Assistant Diector, Mines & Geology, Mahabub Nagar;	
6	Shri M. Ramesh Kumar, Director, CWC, KGBO, Hyderabad;	
7	Shri L.B. Muanthang, Member (Power), KRMB (Nodal Agency), Hyderabad	

Item No. 05

Court No. 1

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

(By Video Conferencing)

Original Application No. 738/2018

(With report dated 23.07.2020)

Satpal Singh, Sarpanch, Gram Panchayat
Singhpura Sithna, Panipat

Applicant(s)

Versus

Indian Oil Corporation Ltd. Panipat Refinery

Respondent(s)

Date of hearing: 24.07.2020

**CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE S. P. WANGDI, JUDICIAL MEMBER
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER**

Respondent(s): Mr. Rajkumar, Advocate for CPCB
Mr. Rahul Khurana, Advocate for HSPCB and State of Haryana
Mr. Sanjay Jain ASG with Mr. Ankur Sood, Advocated for IOCL
Mr. Aditya Sharma, Advocate

ORDER

1. This matter has been monitored in the last two years on the issue of continued violation of environmental norms by the Indian Oil Corporation Ltd. (IOCL), Panipat Refinery, Panipat.
2. Violation of environmental norms was established from report dated 15.11.2018 by a joint team comprising Central Pollution Control Board (CPCB), Haryana State Pollution Control Board (HSPCB) and Deputy Commissioner, Panipat which found that the **samples from the Effluent Treatment Plant (ETP) of the unit were found to be non-compliant. Ambient air quality was exceeding the norms. VOCs were**

resulting in irritation to eyes and odour which was observed by the joint team during inspection. Untreated effluent was found to be discharged in the green belt areas. Unit was not complying with the conditions of recycling and reusing treated water. ETP was not being operated efficiently and was not adequate. Untreated effluents were being stored in open storage lagoon without VOC recovery system. The ground water samples were not complying with the norms.

3. After noting the finding of the joint Committee, the Tribunal directed remedial action and sought a further report from the joint Committee. **Further report was furnished on 09.05.2019 showing continued violation of law.** The joint Committee assessed **compensation in monetary terms at Rs. 17.31 Crores to which IOCL filed objections and directed the deposit of the amount within one month. This order was affirmed by the Hon'ble Supreme Court in Civil Appeal No. 5108/2019 filed by the IOCL leaving it open to the IOCL to raise objections before this Tribunal.**

4. The State PCB in its report dated 16.08.2019 submitted that prosecution was initiated against the unit and the responsible officers on 05.08.2019. Status of prosecution is not known. The CPCB gave its further report dated 09.08.2019 on assessment of damage and cost of restoration with respect to **Oxygen depletion and Pollution caused to the surface water due to illegal discharge of effluent.** CSIR-NEERI also gave its report dated 02.08.2019 on assessment of damage caused to public health & environment. The CGWB gave its report dated 05.09.2019 on assessment of damage caused to ground water and cost of restoration. The said reports were considered on the last hearing on 26.11.2019. The Tribunal observed:-

“11. The report of CPCB concludes the liability for environmental compensation as follows:

“The following may also be incorporated in the Conclusion Section

The environmental compensation (EC) calculated by the Joint team is as under:

- i) EC for Oxygen depletion and Pollution caused to the surface water due to illegal discharge of effluent: **Rs. 26.90 Crores**
- ii) EC for damage caused to public health & environment : **Rs. 92.59 Crores**
- iii) EC on account of damage caused to ground water : **Rs. 540 Crores**

Total Environmental Compensation as calculated by the Joint team is : 26.90 + 92.59 + 540 = Rs. 659.49 Crores, out of which IOCL has already deposited **Rs. 17.31 Crores**, as interim compensation in compliance of Hon’ble NGT Order.

Therefore, balance environmental compensation to be deposited is: 659.49-17.31 = Rs. 642.18 Crores, if approved by Hon’ble NGT.

12. The above conclusion relies on the report of CSIR-NEERI with regard to public health and environment assessing and on report of the CGWB on the subject of compensation for damage to the ground water. The basis of assessment under the head of damage to public health is as follows:

Table 8: Health damage cost due to respiratory diseases

Year	Cost per person (COT)	Total Cases	Total cost (INR)
2015	34546.12	19 11	66017635
2016	36730.87	24 49	89953900
2017	37550.12	50 5	18962810
2018	39052.14	11 57	45183325
2019	41100.35	24 95	102545373
Average (Rounded)			64532600 i.e. Rs. 6.45 Crore

Water damages are not valued as diseases can happen due to many reasons and cannot be directly attributed to Panipat plants. Hence total impacts caused by the refinery is = 1.39 + 59 + 32.2 = Rs. 92.59 Crore

In an year, refinery has caused damage of = 1 + 6.45 + 59 (assuming all cess poll water is released in an year) = Rs. 66.45 Crore.”

13. Apart from assessing the compensation for contamination of ground water, the report also suggests remedial action by way of Environmental Management Plan which is suggested as follows:

“Environmental Management Plan proposed: Dewatering and refilling of contaminated aquifers is proposed in this management plan. It is suggested that for dewatering of 270 MCM of water, 170 tubewells need to be constructed which are yielding about 36 Cu.mt/hour. These tubewells need to be pumped 24 hours throughout the year for a minimum period of 5 years to dewater contaminated water of 270 MCM. At the same time, surface water from the Western Yamuna Canal need to be recharged through the same number of tubewells so that the aquifers will be filled with fresh and non-contaminated water. The de-watered 270 MCM of water can be put to irrigational requirements in the surrounding areas and partly can be used for industrial requirements in Panipat Refinery. Environmental compensation amount collected from the refinery can be used for this purpose.”

19. As regards liability for quantum of compensation, we propose to consider the same at the later stage, after necessary remedial action for restoration of environment and compliance of norms, has been taken by the unit.

20. **We accept the suggestions for improvement which are almost unanimous and which have also been earlier pointed out. No doubt the State PCB has given revised consent, subject to certain conditions, but even in the latest report the State PCB has suggested further remedial measures. Even Deputy Commissioner, Panipat has suggested remedial measures. Let such remedial measures be taken forthwith. The Joint Committee of CPCB, State PCB and NEERI may verify the latest status of compliance within one month and give its fresh report. The Nodal Agency will be the State PCB. The report may be furnished by email at judicial-ngt@gov.in by 31.01.2020.”**

5. Accordingly, the joint Committee has filed its report on 23.04.2020 to the effect that there was no progress towards restoration of the environment. The observation of the Committee have been consolidated in tabular form as follows:-

Sl. No.	Recommendations of the Joint Committees and Members of the Joint Committee	Date of recommendation by Joint Committee	Status as on 13/2/2020

1.	To stop illegal discharge into the thirana drain	15/11/2018	<p>HSPCB has granted revised Consent to Operate for the discharge of 255 m³/hr of treated effluent from PTA plant In to Thirana drain vide CTO No. HSPCB/Consent/ 313105619</p> <p>/PITCT0679658 dated 25/7/2019 with the condition that the industry will obtain permission from Irrigation department for the discharge of the treated PTA effluent Into the Thirana drain (Annexure-3).</p> <p>IOCL started discharge of effluent into the Thirana drain w.e.f 18/8/2019 as intimated by IOCL to Regional Office of HSPCB vide letter No. PR/HSE/HSPCB/2019 dated 19.08.2019 (Annexure-4).</p> <p>However, the IOCL has not obtained permission from irrigation department for discharge of effluent Into the Thirana drain.</p> <p>In view of the non-compliance of the condition of Consent to operate by ma, Regional Office of HSPCB has issued reminder letters No. HSPCB/PR/2019/2414 dated 15/11/2019 and No. HSPCB/PR/2019/2948 dated 27/12/2019, requesting IOCL to provide the permission of Irrigation Department for discharging effluent into the Thirana drain (Annexure-5 and 6). However, no permission letter has been submitted by IOCL.</p> <p>Now, HSPCB has issued letter to IOCL vide No. HSPCB/PR/2020/3324 dated 11/2/2020 directing the industry to treat it as last opportunity for submission of the permission of Irrigation department for discharging effluent into the Thirana drain, within 7 days failing which, necessary action will be initiated as per the provisions of Water Act 1974 (Annexure-7).</p> <p>It was also Informed by the Regional Officer, HSPCB, Panipat that Irrigation Department has also been requested to provide copy of the permission granted to IOCL, if any, for discharging effluent into the Thirana drain vide letter No. HSPCB/PR/2020/31185 dated 14/1/2020 (Annexure-8). However, no feedback has been received from irrigation department, so far.</p> <p>Therefore, effluent is being discharged into the drain try IOC, without obtaining permission from the irrigation department. which is a non-compliance of the condition of consent to operate granted by HSPCB.</p> <p>Further, during inspection of the thirana drain on 14.01.2020, the Joint Committee observed that effluent is also being discharged by IOCL Panipat Naphtha Cracker Unit (Another unit of</p>
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		<p>IOCL) through a 36" diameter pipe line (Photograph attached In Annexure-17).</p> <p>The discharge of the effluent in to the Thirana drain was recorded by the joint committee In the presence of RO HSPCB Panipat (Video is attached).</p> <p>It was informed by RO HSPCB Panipat the Consent to Operate was granted to the Naphtha Cracker unit only for Recycle and Reuse of the treated effluent and no permission has been granted for the discharge in to the Thirana Drain to this unit.</p> <p>After observing discharge in to the drain, the committee asked the representative of the 'Oa to come at discharge point so that Sample could be collected in the presence of the representative of the unit. But, by the time, the representative of 10a came at site, another team of 10CL. Naphtha Cracker unit stopped the discharge by blinding the pipe with the help of MS plate. Photograph of the team & the vehicle by which they arrived attached in Annexure-17.</p> <p>Thereafter representative of the unit came and informed that the effluent discharged into Thirana drain is Storm Water from Naphtha cracker Unit.</p> <p>To Identify the source of effluent discharged from Naphtha Cracker, Joint committee visited the unit along with representative of the IOCL on 15/1/2020. It was found that the Unit has constructed a huge pond for storage of Storm Water, as Informed by the representatives of the industry.</p> <p>It was observed that number of jet sprinklers were installed In the pond and on enquiry</p> <p>Naphtha Cracker unit's official stated that the jet sprinklers are installed to reduce the BOD & COD level of the effluent stored in the Pond.</p> <p>(Photograph attached in Annexure-17).</p> <p>The sample of the effluent stored in the storm water storage pond collected on 15/1/2020.</p> <p>The joint committee also re-inspected the discharge point of Naphtha Cracker unit in thirana drain on 15.01.2020, which was found non operational. However, it was observed that</p> <p>Stagnated effluent is having odour and therefore the sample of the effluent of Thirana drain at 100 meters downstream of the discharge point was collected Both the samples i.e sample collected from the storm water pond and the sample collected from the Thirana drain were sent to the Laboratory of</p>
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			<p>HSPCB for analysis.</p> <p>The results of analysis of both the samples showed high levels of BOO, COD and SAR,, which are not expected from storm water, thereby indicating that storm water is contaminated with industrial effluent (Copy of the analysis reports attached as Annexure-9 & 10).</p> <p>HSPCB has issued two show cause notices vide No. 3129 dated 17.01.2020 and No. 3311 dated 10.02.2020 far on account of non-compliance of conditions of consent to operate granted to Naphtha Gather Unit (Annexure-11 & 12).</p>
2.	<p>The unit needs to make arrangement to cover all open potential sources of VOC emissions in effluent treatment plant and recovery of VOCs after carrying out the study</p> <p>Regarding VOC emitting potential/study of different components of effluent treatment plant.</p>	15/11/2018	<p>Not implemented as on date.</p> <p>As per IOCL, installation of VOC recovery system at EP 1 & 2 is expected to be completed by May, 2021.</p> <p>As per IOCL, EOI for studying the feasibility to cover the polishing pond A (untreated effluent) will be published by April 2020 and based on the outcome of EOI suitable action will be Initiated by Dec. 2020.</p>
3.	<p>State Government may further get the study done w.r.t to plan for restoration of ground water quality based on the usage schedule of the ground water in Panipat area, in consultation with district administration, State pollution control board and other concerned departments, to ensure ill effects of contaminated ground water on the health of local people. The cost of restoration would be finalized after appropriate study for restoration of ground water quality based on the usage schedule of the ground water in Panipat area by State Govt. As proposed in</p>	26.11.2019	<p>No progress made. Nodal Officer, HSPCB has been requested for getting details from State Government.</p>

	report of CGWB Engineering feasibility of dewatering and refilling of aquifers, as proposed in the report of CGWB, shall be relooked for its environmental implications.		
4.	IOCL may be directed to provide safe drinking water to nearby villages affected by Drinking Water quality issues till the restoration of the ground water quality.	26/11/2019	<p>As on today, no arrangement made to supply drinking water to the effected villages.</p> <p>As per Letter dated 11/2/2020, provided by IOCL to the joint Committee,</p> <p>IOCL has requested District Administration, Pan/pat to provide a proposal with estimate of cost incurred for providing safe drinking water to nearby affected villages (Annexure-13).</p>
5.	Extensive rainwater Harvesting may be more sustainable solution to restore the quality of ground water. Panipat on an average receives 600 mm of rain annually. If the same can be harvested in an efficient way, the same can prove to restore the quality of groundwater in lesser time and cost with no further environment implication.	26/11/2019	<p>No initiatives have been taken in this regard as on date.</p> <p>However, the compliance status submitted by IOCL on 13.02.2020 states that Rain Water Harvesting is not advisable for total plant areas due to presence of hydrocarbons. Therefore, it is planned to install rain water harvesting Facilities for all plant & non plant buildings within the Refinery. As informed by the Unit there are total 38 potential locations identified in Refinery area out of which installation of 04 Nos. RWH aquifer recharging facility shall be completed in FY 2019-20 and balance by next two years.</p>
6.	Green Belt Development is another sustainable solution to the Environmental Issues over the decades. Yearly targets and monitoring of them can give long term sustainable solutions. The action to be taken by the IOCL should be monitored quarterly, quantitatively and qualitatively by the District Administration and State Pollution Control Board.	26/11/2019	<p>15000 trees plantation have been done and proposing to add additional 50000 trees will be planted for green belt development.</p> <p>The Joint Committee has observed plantation done by IOCL at various locations.</p>
7.	Water stored in Multiple lagoons/ ponds inside the plant should be treated and recycled before lining the lagoons to make these lagoons impervious as mandated. In COT dated 25-07-2019.	26/11/2019	<p>The storm water contaminated with oily waste water storage ponds are not lined. Polishing pond C is not lined and according to IOCL officials it will be lined by March, 2022.</p> <p>The joint committee has observed that there are no separate drains for storm water and waste water. Everything flowing in open drains within the premises, irrespective of the source, is considered as storm water by the industry and is not</p>

			<p>treated in E7P before reusing and discharging into the drain, except passing through oil traps.</p> <p><i>IOCL needs to segregate waste water drains from storm water drains, to prevent QOM contamination of storm water and to ensure treatment of waste water in ETP before recycle/ reuse.</i></p> <p>No waste water is to be discharged in the drain in the name of storm water, as per conditions of the consent to operate granted by HSPCB.</p> <p>The industry may be directed by HSPCB to create adequate effluent treatment capacity to take care of entire effluent.</p>
8.	No untreated water will be stored in the lagoons/ponds except in the tanks, which are components of effluent treatment plant.	26/11/2019	Still practising to store the untreated waste water and partially treated waste water in ponds, this indicates that effluent treatment capacity is inadequate.
9.	The State PCB has given revised consent, subject to certain conditions, but even in the latest report the State PCB has suggested further remedial measures.	26/11/2019	As per the IOCL, expression of Interest (EoI) had been floated for feasibility of ZLD facility for PTA-ETP treated effluent in November, 2019. Eight vendors participated (details enclosed) and made technical presentation in January, 2020. The vendors have been asked to submit budgetary quotation. Based on the same, tender will be floated. ZLD facility installation targeted by March, 2023, as informed by the representative of the industry.

6. Apart from above, the Committee has made further observations as follows:-

“Other observations of Joint Committee:

The samples of treated waste water were collected from six locations within the plant premises were collected by joint Committee and sent to two laboratories viz. HSPCB Laboratory and Environment & Climate Change Department laboratory, Govt. of Haryana. The results of analysis of samples of treated effluent have been received from both the laboratories (Annexure 14 & 15), which have been summarized in the following Table 1.

Parameters	Final Discharge CI PTA-ETP Into Thiranalkaln		Polishing Pond-B (Trusted EDSuent of PTA-ETP)		Final discharge of PTA-ETP at the Inlet of Guard Pond 11		Storm Water Pond nor PTA-ETP		Guard Pond A of PTA ETP		Guard Pond C ed PTA ETP		Presaided Limits
	WPC s Lab	Ea = Lab	mspoi Lab	ICC Lab	KSC 11 Lab	6C CD Lab	liciPCs Lab	ECLD Lab	HSPCI II lab	ECCD , Lab	14SP CII Lab	EC= Lab	
Appearance	IbtronIs h	Turtid	Pint	Reddish	Brownish	Turbid	Darke n	Turbid	Browc	Turbid	80" nish	Turbid	
Odour	Mild	Mid	Mid	Mid	Mid	Mild	Lig ht Fou	Mid	Med	Mid	Mid	Turbid	
PM	8.75	7.24	8.77	7.59	8.64	7.8	8.96	7.32	8.53	7.75	8.26	7.06	6.5-8.5
TSS, MO	16	32	160	174	19	23	15a	70		13		12	100
COO, mg/1	86	77	923	5158	129	134	328	342	56	76	71	68	250
BOO, mg/1	19	11	230	345	34	46.5	L2	70	15	12	17	11	30

- The final discharge of treated effluent collected from the Thirana drain meets the prescribed limits of all the parameters prescribed In the Consent to Operate granted by HSPCB.
- **Treated effluent of PTA-ETP stored in the Polishing Pond-B does not meet the prescribed limits** of 755 (160 mg/I > 100 mg/I, HSPCB Lab; 175 mg/I > 100 mg/I, ECCD lab), COD (923 mg/I > 250 mg/I, HSPCB Lab; 568 mg/I > 250 mg/I, ECCD lab) and BOD (230 mg/I > 30 mg/I, HSPCB Lab; 345 mg/I > 30 mg/I, ECCD lab).
- **The Treated effluent of PTA-ETP at the Inlet of Guard Pond B does not meet the prescribed limits** of BOO (34 mg/I > 30 mg/I, HSPCB Lab; 46.5 mg/I > 30 mg/I, ECCD).
- **Sample of Waste water from Storm Water pond near PTA-ETP does not meet the prescribed limits** of COD (328 mg/I > 250 mg/I, HSPCB Lab; 342 mg/I > 250 mg/I, ECCD lab) and BOD (82 mg/I > 30 mg/I, HSPCB Lab; 70 mg/I > 30 mg/I, ECCD lab).

(ii) The exceedance of various parameter in the treated effluent stored at various locations within the premises of the Unit indicates that the **capacity of the ETP is inadequate to take care of entire effluent** generated by the Unit.

(iii) Waste water and the storm. water are transported through the common drains and stored In the unlined storage ponds, Everything passing through open drains is cons/ deemed as Storm water by IOCL.

This contaminated waste water is not shown. In the consent to operate granted.

This waste water should not be stored In the unlined ponds to avoid contamination of underground water. Presently, this contaminated waste water is passed through oil traps and is reused for fire fighting purpose and discharging in the drain, In the name of storm water. There is no effluent treatment plant (E7P) Installed by

IOCL for this contaminated waste water. The results of the analysis of the sample collected by the Joint Committee from the storm water pond also suggest that water stored in this pond is not the storm water but the untreated water contaminated with the industrial effluent.

The IOU is required to segregate the waste water and storm water. Waste water should be treated in proper effluent treatment to achieve the prescribed standards before recycle & reuse as per consent to operate granted by HSPCB. The IOCL should get this waste water Included in the consent to operate, to ensure monitoring of prescribed standards by HSPCB. The contaminated waste water currently stored In this pond should be treated, recycled and reused.

(iv) IOCL has not obtained and submitted permission from irrigation department, for discharge of effluent Into the Thirana drain, as per pre-condition of the fresh consent to operate granted by HSPCB, despite issuance of reminder letter by HSPCB.

Now, HSPCB has Issued letter to IOCL vide No. HSPCB/PR/2020/3324 dated 11/2020 directing the industry to treat it as last opportunity for submission of the permission of Irrigation department for discharging effluent Into the Thirana drain, within 7 days falling which, necessary action will be Initiated as per the provisions of Water Act 1974. Despite this, no permission from irrigation department has been submitted by the unit as on 18/3/2020.

Comments of Joint Committee w.r.t re-examination of the damage assessment made by NEERT and CPCB, as suggested by HSPCB Member, in the Final Report submitted to Hon`ble NGT :

As mentioned In Honble NGT Order dated 26/11/2019, a separate report filed by the representative of State PCB concludes as follows:

"Alter going through the assessment reports of CPCB, CSIR-NEERI, CGWB; and District Administration the undersigned opines that the justification for doubling of the environmental compensation assessed by CPCB has not been dearly brought out in the report Further, the violation period accounted by C5IR-NEERI and CPCB are different and there is no uniformity in the period for which the violations have been counted for. Also, a component of the environmental compensation relating discharge of effluent Indicated by C009 Member has also been included by CUR-NEERI in his report thereby duplicating the same. Therefore, this aspect may require re-examination by the Joint Committee further."

As suggested by HSPCB Member, the above aspects were re-examined by the joint committee by revisiting the records available with Nodal Officer of HSPCB and the outcome is as under:

(i) The interim compensation as calculated by CPCB Member was communicated to other two members of the Joint Committee viz. DC, Panipat and HSPCB Member (Nodal Officer). Other two members of the Joint Committee Le Dc Panipat and then Nodal Officer, HSPCB decided to impose the compensation by considering the deterrent factor of 2.0, based on the paying capacity of the industry and quantum of damage caused to the environment and submitted the report to Hon'ble NGT on 09/05/2019. Therefore, deterrent factor was decided jointly by DC, Panipat and HSPCB, Nodal Officer, in compliance of the order of Hon file NGT in this matter.

(ii) No non-uniformity has been found by the Joint Committee w.r.t violation period accounted by MR-NEERI and CPCI3. NEERI has made assessment based on the details provided by Joint Committee and both these assessments are Independent of each other.

(iii) However, one of the Component I.e. Rs. 18,46,3391- for the damage caused on account of discharge of BOD was common in the reports of NEERI and CPCB. Therefore, it was decided by Joint Committee in its meeting held on 26/4/2019, to exclude the amount of Rs. 18,46, 339/= from the total amount of damage calculated by NEERI. This was also communicated to DC, Pan/pat by the Nodal Officer with copy to the members of the Joint Committee and Registrar, National Green Tribunal vide Letter dated HSPa/Sr.SC/2019/SO/PNP-1 dated Sept 13, 2019 (Annexure-16). However, this correction was not incorporated by the HSPCB Nodal Officer while submitting the final Report to Hon'ble NGT, Therefore, in view of the above, the cost towards of damage caused to public health & environment as calculated by WERT may be considered as $92.59 - 0.1846 = \text{Rs. } 92.40$ Gores in place of Rs. 92.59 Crores as submitted in the earlier report. There is no change if the damage assessment calculated by CPCB member submitted in the earlier report to Hon'ble NGT, towards oxygen depletion and pollution caused to the surface water due to Illegal discharge of waste water.

This report of the Committee is submitted for consideration of Hon'ble NGT.”

7. As against above, IOCL has filed a 'compliance report' in respect of the observations in the report dated 23.04.2020. It will be appropriate to extract the response given in tabular form:-

“Compliance of Report dated 23.04.2020

S. No.	Observation of the joint Committee in its report dated 23.04.2020	Response
1.	(a) <i>Illegal discharge of effluent into the drain by IOCL without obtaining permission from the irrigation department, which is a non-compliance of the condition of CTO granted by HSPCB</i>	Complied Details at Schedule 1(a)
	(b) <i>Illegal discharge of effluent from IOCL Naphtha Cracker unit into the Thirana Drain and the test results of the sample discharge shows high levels of contamination</i>	No violation Details at Schedule 1(b)
2.	IOCL has not made any arrangements to cover all potential sources of VOC emissions	Action in progress. Target date: May 2021. Details at Schedule 2
3.	<i>No progress has been made for restoration of ground water quality which was supposed to taken up by the State Government and HSPCB has been asked to get details from the State Govt.</i>	Action from State Government if awaited. Details at Schedule 3.
4.	No arrangement has been made to supply safe drinking water to the affected villages	Action in progress Target Date: 2021-22 (Progressively) Details at Schedule 4
5.	No initiatives have been taken for extensive rainwater harvesting	Action in progress Target Date: 2021-22 (Progressively) Details at Schedule 5
6.	<i>The Joint Committee has observed Plantation done by IOCL at various locations. 15000 trees plantation have been done and proposing to add additional 50000 trees will be planted for green belt development.</i>	Complied Details at Schedule 6
7	(i) The storm water contaminated with oily waste water storage ponds are not lined, Polishing pond C is not lined and according to IOCL officials it will be lined by March, 2022. (ii) The joint Committee has observed that there are no separate drains for storm water and waste water. everything flowing in open drains within the premises, irrespective of the	Action in progress Details at Schedule 7 Target Date: Mar’ 2022

	<p>source is considered as storm water by the industry and is not treated in ETP before reusing and discharging into the drain, except passing through oil traps.</p> <p>IOCL needs to segregate waste water drains from the storm water drain, to prevent cross contamination of treatment of waste water in ETP before recycle/reuse.</p> <p>(iii) No waste water is to be discharged in the drain in the name of storm water, as per conditions of the consent to operate granted by HSPCB.</p>	
8.	<p>Still practicing to store the untreated waste water and partially treated waste water in ponds, this indicates that effluent treatment capacity is inadequate.</p>	<p>No untreated water is stored in the unlined lagoons/ponds. Details at Schedule 8</p>
9.	<p>As per the IOCL, expression of Interest (EoI) had been floated for feasibility of ZLD facility for PTA-ETP treated effluent in November, 2019. Eight vendors (details enclosed) and made technical presentation in January, 2020. The vendors have been asked to submit budgetary quotation. Based on the same, tender will be floated. ZLD facility installation targeted by March, 2023, as informed by the representative of the industry.</p>	<p>Action in progress as per details at Schedule 9</p>
Other observations of the joint Team		
i.	<p>The final discharge of treated effluent collected from the Thirana drain meets the prescribed limits of all the parameters prescribed in the Consent to Operate granted by HSPCB. Treated effluent of PTA-ETP stored in the Polishing Pond-B does not meet the prescribed limits of TSS, treated effluent of PTA-ETP at the inlet of Guard Pond B does not meet the prescribed limits of BOD and sample of waste water from storm water pond near PTA-ETP does not meet the prescribed limits of COD.</p>	<p>Final discharge is meeting the prescribed parameters as acknowledged by the Joint Team. Further steps taken and under progress as per details at Schedule i.</p>
ii.	<p>The exceedance of various parameter in the treated effluent stored at various locations within the premises of the unit the</p>	<p>ETP has adequate capacity. Further steps taken and under progress as</p>

	premises of the unit indicates that the capacity of the ETP is inadequate to take care of entire effluent generated by the unit	<i>per details at</i> Schedule i
<i>iii.</i>	Waste water and the storm water are transported through the common drains and stored in the unlined storage ponds. This waste water should not be stored in the unlined ponds to avoid contamination of underground water. There is no effluent treatment plant (ETP) installed by IOCL for this contaminated waste water. IOCL is required to segregate the waste water and storm water. IOCL should get this waste water included in the consent to operate, to ensure monitoring of prescribed standards by HSPCB. The contaminated waste water currently stored in this pond should be treated, recycled and reused.	<i>IOCL has already sought suggestion from HSPCB in letter dated 14.07.2020 regarding the storm water specification, handling and disposal. Compliance will be done as per guidance.</i>
<i>iv.</i>	<i>IOCL has not obtained and submitted permission from Irrigation Department for discharge of effluent into the Thirana drain as per pre-condition of the fresh consent to operate granted by HSPCB.</i>	<i>Compiled</i> Details as Schedule 1

8. Learned counsel for the CPCB and the State PCB dispute the self serving claim of compliance by the IOCL contrary to the report of the joint committee based on site inspection, it is further submitted that the timelines were going upto March, 2022 to remedy storm water contamination and other long timelines even after two years of directions and monitoring by this Tribunal. It is submitted that the stand of the IOCL shows lack of sensitiveness to the fundamental rights of the inhabitants to clean environment. The IOCL is either denying its responsibility or delaying performance of its obligation. In these circumstances, IOCL be required to deposit the compensation assessed for damage already caused to the environment and public health so that remedial steps can be taken.

9. We find merit in the stand of the CPCB and the State PCB in view of independent joint Committee report showing continued discharge of pollution by the IOCL in water bodies. The IOCL has failed to take effective and adequate steps even during long interval available after the last hearing though such action was expected. It was on that expectation that requirement of paying assessed compensation was deferred. A PSU has to be model of compliance with the environmental norms which unfortunately is found lacking in the present case.

10. Accordingly, we direct the IOCL to take initiative on day to day basis and comply with all the observations of the joint Committee positively within six months. This will not debar the State PCB from initiating prosecution for violation of provision of the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981 against the Company and its senior officers who failed to prevent commission of crime, as per statutory mandate.

11. We also direct the IOCL to deposit a further sum of Rs. 25 Crores with CPCB so that the amount earlier deposited with amount to be now deposited can be spent on restoration of environment and public health by making a restoration plan by the CPCB, State PCB and the District Magistrate, Panipat. Such plan may be prepared within three months and same may be duly executed. The deposit of the amount by the IOCL may be made within one month from today with the CPCB. Issue of final liability for compensation will be decided on next date in the light of progress in performance by IOCL. The action plan may cover restoration activities to be undertaken outside the Company's premises for restitution of environment including public safety, health and hygiene. It will be open to the Committee to get action plan executed through

company itself or otherwise and ensure regular monitoring the process of implementation.

The joint Committee may give its further independent report after site inspection as to status of compliance and execution of action plan as on 31.12.2020 by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF.

List for further consideration on 17.02.2021.

Adarsh Kumar Goel, CP

S. P. Wangdi, JM

Dr. Nagin Nanda, EM

July 24, 2020
Original Application No. 738/2018
A

Scientists for People

Comments on JC Report on HPCL Accident in OA No 73/2021

NGT (SZ) appointed a Joint Committee comprising of 4 experts from APPCB, MoEF&CC, CPCB and IICT "to inspect the unit in question and submit a factual as well as action taken report, if there is any violation found. " through an order dated 25.02.2021. Subsequently, after a major fire accident at HPCL on 25.05.2021 NGT further ordered the JC to report on "environmental compensation if any to be assessed if there is any violation found" vide its order dated 27.05.2021. The reports prepared and submitted by the appointed JC are reviewed by Scientists for People. Unfortunately, they are full of errors and do not qualify as scientific reports for NGT to act based on them. We present our comments on the reports in the same order as sought by NGT.

Violations and Action taken Report

This report starts with a short brief on the APPCB sponsored study on odour pollution by IISc, Bengaluru in 2012. Report was submitted by IISc in 2016. Fifth recommendation of IISc in their Report on HPCL on odour management as quoted in this report is:

"Public education is important concept in odour management. The odour squad should strive to impress upon people of Visakhapatnam that the common odour one might smell from the industries or any other sources will not have serious impact on average person's health if released in small amounts. It is important to maintain public decorum and take steps to mitigate the panic among the general public through proper education."

A premier science institute belittling real concerns of public at odour pollution and dismissing them as panic is deplorable. Instead of recommending HPCL to formulate an odour management plan and treat the tail gases to remove odour as is done in EU, they recommend public education to tolerate odour nuisance. All EU countries, UK, USA, Canada, Chile, Colombia, Australia, New Zealand, Japan and China have odour legislations. Odour pollution is a prosecutable offence and is punishable with fine and/or prison sentence. EU report on "Odour Management Guidance for Refineries" released in 2020 presents "Techniques for Reducing Odour Emissions" in Appendix 4.

https://www.concawe.eu/wp-content/uploads/Rpt_20-1.pdf

India has no such odour legislation but CPCB published guidelines for odour pollution in 2008. Neither the IISc report made in 2016 nor the present JC, comprising a member from CPCB, in its report referred to that CPCB guidance. It is indicative of the lack of thoroughness and responsibility in addressing the task entrusted by NGT.

Emission Load Calculations:

Emission loads presented in Table 8 are suspect. Annexure 19 gives only concentration data for the PM, NO_x and SO₂ only but not the flow rates of stack

gas. Both concentrations and flow rates keep fluctuating through the day. In absence of any data for flow rates of stack gases given, we tried a consistency test to check of the pollution loads for three components calculated for each stack. Given the concentration and the pollution load for PM, NO_x and SO₂, the flow rate back calculated from the data for each component should match.

Flow rate of stack gas for Stack4 at serial no 1 in Table 8 for each of the three components, PM, NO_x and SO₂ are:

$$\text{PM} = 0.028/35.35 = 792 \times 10^{-6}$$

$$\text{NO}_x = 0.058/61.44 = 944 \times 10^{-6}$$

$$\text{SO}_2 = 0.283/132.92 = 2129 \times 10^{-6}$$

Having used same units for pollution load and concentrations for each of the components, the flow rate computed in same units must match but there is a big difference by a factor of more than 2 in values obtained above. In absence of actual data the pollution loads given cannot be verified. But the consistency analysis above shows the unreliability of the pollution load data presented in Table 8.

Sulphur Balance:

Sulphur balance calculations are presented in Tables 17, 18 and 19. Our calculations give a total quantity of sulphur present in the various crude oils handled at HPCL as per Table 17 is 1,03,188 TPA and not 1,14,112 as presented in that table. Mass average percentage of sulphur we obtained is 1.138% and not 1.258% as given. Sulphur balance data presented in Table 18 shows excess sulphur in the products compared to that in feed processed. Total sulphur in the products is given as 1,23,238.743 TPA while the input sulphur in table 17 is 1,14,112 TPA. Products show about 9000 Tonnes more of sulphur. How is extra sulphur generated? There is no point in making such material balances.

In Table 19, sulphur in the fuels burnt to meet the energy requirements of refinery is given. Total sulphur in the fuels is computed as 544.542 T and the sulphur dioxide generated as 1089.08. Average sulphur dioxide released per day is computed using 365 working days in a year and put at 2.98 TPD. This does not match with the CEMS data for SO₂ of 4.52 TPD presented in Table 8 of the JC report. The permitted sulphur dioxide load is given as 11.5 TPD. There is no justification and basis for permitting such high release load. JC has not looked into that aspect.

The very premise of the sulphur balance calculations given in JC report is wrong. Process emissions of sulphur dioxide and recovery of elemental sulphur in a refinery are ignored. A survey of refineries in Europe conducted in 1998 and presented as a report "sulphur dioxide emissions from oil refineries and combustion of oil products in western europe and hungary (1998)" gives the distribution of sulphur in the refinery products. About 40 percent of sulphur in the crude oil feed is recovered as elemental sulphur. HPCL Visakhapatnam has a 300 TPD sulphur recovery unit (SRU) being built currently. Also most of the crude

imported and processed at HPCL is heavy crude containing higher percentage of sulphur.

Table 1 Distribution of sulphur output

Sulphur output: Category	Output in 1998 (kt)	Fraction of total sulphur intake (%m/m)
SO₂ emissions from refineries (as sulphur)	387	7.4
Sulphur in products for combustion		
- distillates	599	11.4
- inland fuel oil	785	14.9
- bunkers	548	10.4
Sulphur emitted as SO₂	2319	44.1
Sulphur in products not used for combustion (e.g. bitumen, chemical feedstocks, lubricants)	742	14.1
Sulphur recovered	2061	39.2
Sulphur retained Sub-total	2803	53.2
Total Sulphur	5122	97.3

https://www.concawe.eu/wp-content/uploads/2017/01/rpt_02-10-2003-01129-01-e.pdf

Updated version published in March 2018 gives sulphur balance data for different years.

Table 3 Fraction of sulphur intake going to different sources (% sulphur)

		2002	2006	2010	2015
Output	Products for combustion	29.8	32.5	27.3	22.6
	Products not for combustion	8.6	11.8	12.1	13.3
	Recovered as elemental S	47.6	45.0	55.9	59.6
	Recovered as other S products	5.5	0.2	0.4	1.2
Emitted at Refinery	All sources	5.5	3.7	3.8	2.0
Balance		97.0	93.2	99.5	98.7

JC has not done any literature search to learn from past experiences and verify the correctness of their approach as none of the members have any exposure to

any petroleum refinery processing. The tables of calculated data presented have no relevance as they are inaccurate and do not reflect the processes

Environmental Compensation Report

We present details of reasons that force us to make strong remarks against this report section wise.

2.1 Causes for Fire Accident:

NGT has not asked the Joint Committee to inquire into the accident. Observations of the JC appear to be a reiteration of the HPCL internal investigation that stated "Mechanical failure of one of the pipeline elbows on the pump discharge line caused leak on to the deck 1 and grade level and caught fire due to auto ignition."

But no one looked at the reasons for mechanical failure and remedial measures needed to prevent recurrence of such failures.

3.3 Actions of APPCB:

Air Quality data on the day of the accident presented in section 3.3 of JC report is an indicator of the poor quality of the report. Simple presentation of the measured data muddled with wrong numbers exposes the expertise of the chosen JC. Examples illustrating errors in the data presentation are given below.

CAAQMS1:

Air quality data shows PM10 value peaked at 319.57 $\mu\text{g}/\text{m}^3$ at 5:30 PM after the end of the fire at 4:15 PM. PM2.5, NO_x and SO₂ have peaked during the fire period.

- NO_x values increased from 17 $\mu\text{g}/\text{m}^3$ (14.00 hrs) to 142 $\mu\text{g}/\text{m}^3$ (16.00 hrs) during the accident period. Minimum value of 05 and maximum value of 132 $\mu\text{g}/\text{m}^3$ was observed during the day of accident on 25.05.2021.
- No significant change in the SO₂ concentrations were observed during the fire accident period. Minimum value of 05 and maximum value of 132 $\mu\text{g}/\text{m}^3$ was observed during the day of accident on 25.05.2021.

The NO_x value at 16:00 hrs was 142 $\mu\text{g}/\text{m}^3$ and how come the maximum on the same day is less than this value at 132 $\mu\text{g}/\text{m}^3$!

"The 78 tons of burnt hydrocarbons also contain an amount of 1.2 tons of sulphur (@3.4% sulphur in Bitumen / furnace oil and 0.024% sulphur in Naphtha)." [P 7, JC Report]. A major mistake is made in the SO₂ concentration data. They just repeated the minimum and maximum concentrations of NO_x for SO₂ while the actual data in the table in Annexure 4 are minimum 5.3 $\mu\text{g}/\text{m}^3$ and maximum 10.45 $\mu\text{g}/\text{m}^3$. This data is questionable considering the sulphur burnt in the fire accident. 1.2 Tons of sulphur releases about 840 Nm³ of SO₂. That should be

reflected in the air quality. But the measured data presented does not reflect the generation of SO₂ in the fire. We have to doubt the analysis in the online measurement system CAAQMS1.

CAAQMS2:

Data for concentrations of PM10, PM2.5, NOx and SO₂ do not show any increase during the fire. But show a decrease after the end of the fire at 4:00 PM. Also, peak concentration for PM2.5 only occurred during the fire, but for the other components peaks occurred at about 6:30 PM. This generates doubts on the accuracy of measurement system installed.

- NOx values recorded 26.77 µg/m³ (13.15 hrs) and increased to 35.49 µg/m³ (17.30 hrs) during the accident period. Minimum value of 0.6 and maximum value of 11.84 µg/m³ was observed during the day of accident on 25.05.2021.

- No significant change in the SO₂ concentrations were observed during the fire accident period. Minimum value of 11.76 and maximum value of 37.74 µg/m³ was observed during the day of accident on 25.05.2021.

Minimum and maximum values for SO₂ concentrations are reported for NOx. The NOx concentrations during the fire are reported as 26.77 µg/m³ and 35.49 µg/m³ but the maximum value for that day is shown as 11.84 µg/m³. It is simply being careless.

While saying no significant change in the SO₂ concentrations during the accident period, the report shows a three-fold change in the minimum and maximum concentrations of SO₂ on that day. But, sadly these values are for NOx and not of SO₂.

CAAQMS3:

Measured concentrations data given for all four components PM10, PM2.5, NOx and SO₂ are lower during the fire period compared to other times on that day. Unusually, Ozone peak concentration occurred at 8:45 PM in the night.

- NO_x values increased from 15.8 µg/m³ (14.45 hrs) to 59.7 µg/m³ (15.45 hrs) during the accident period. Minimum value of 15.81 and maximum value of 110 µg/m³ was observed during the day of accident on 25.05.2021.
- As far as the SO₂ concentrations are concerned, minimum value of 30.34 and maximum value of 510 µg/m³ was observed during the day of accident on 25.05.2021.

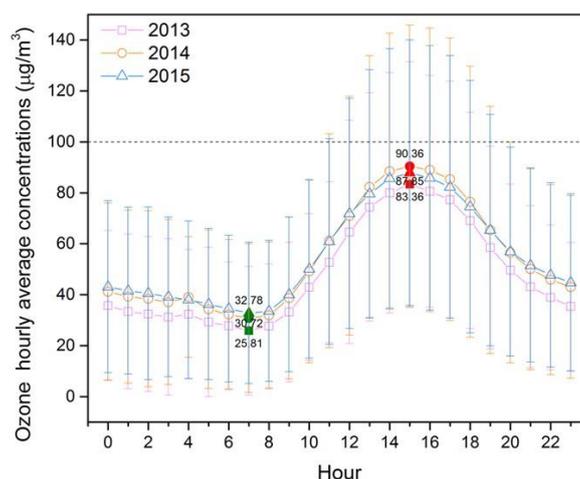
It should be noted that the concentrations of SO₂ during the accident period varied marginally between 50 to 60 µg/m³ only. The maximum SO₂ concentration occurred several hours before the fire at 6:00 AM.

JC never considered about the fate of SO₂ generated during the fire.

It is highly disturbing to accept such sad errors from Experts. Why is it that none of the four experts that signed the report cared to read and correct such glaring errors?

Ozone:

Unusually, Ozone peak concentration occurred at 10:15 PM in the night at CAAQMS3. At other two locations for which 24 hr measurements are available, Ozone concentrations show multiple local maxima. This is unusual. Ozone being a secondary pollutant its formation requires sunlight. Typical ozone concentration profile in a day follows the profile shown in picture below.



<https://www.nature.com/articles/s41598-017-03929-w>

Ozone measurements should follow the pattern shown above. But at none of the three CAAQMS the Ozone measurements follow this pattern indicating problems of accuracy in measurement.

5. Environmental Damage Assessment:

Report claims that hydrocarbons burnt during the fire (Bitumen and Naphtha) are considered as Methane for calculating the carbon dioxide emissions during the fire and assumed 100% clean combustion. This assumption is completely wrong. Carbon intense liquid hydrocarbons cannot be treated as equivalent to methane gas with the lowest carbon to hydrogen ratio of 0.25. For naphtha Carbon/Hydrogen Ratio= $(74+15d)/(26+15d)$ Where d = Specific Gravity @ 60/60 F. Density for naphtha is given as 0.66 to 0.76 g/ml by BPCL. Taking density as 0.7 g/ml we get a C/H ratio of $(74 + 15 \times 0.7)/(26 + 15 \times 0.7) = 84.5/36.5 = 2.315$. So, the carbon dioxide emission calculation presented is wrong.

<https://www.bharatpetroleum.com/our-businesses/industrial-and-commercial/industrial-fuel-products/fuels.aspx>

https://www.researchgate.net/publication/260288471_Determination_of_the_carbon_hydrogen_ratio_in_bitumen_using_prompt_neutron_gamma_activation_analysis

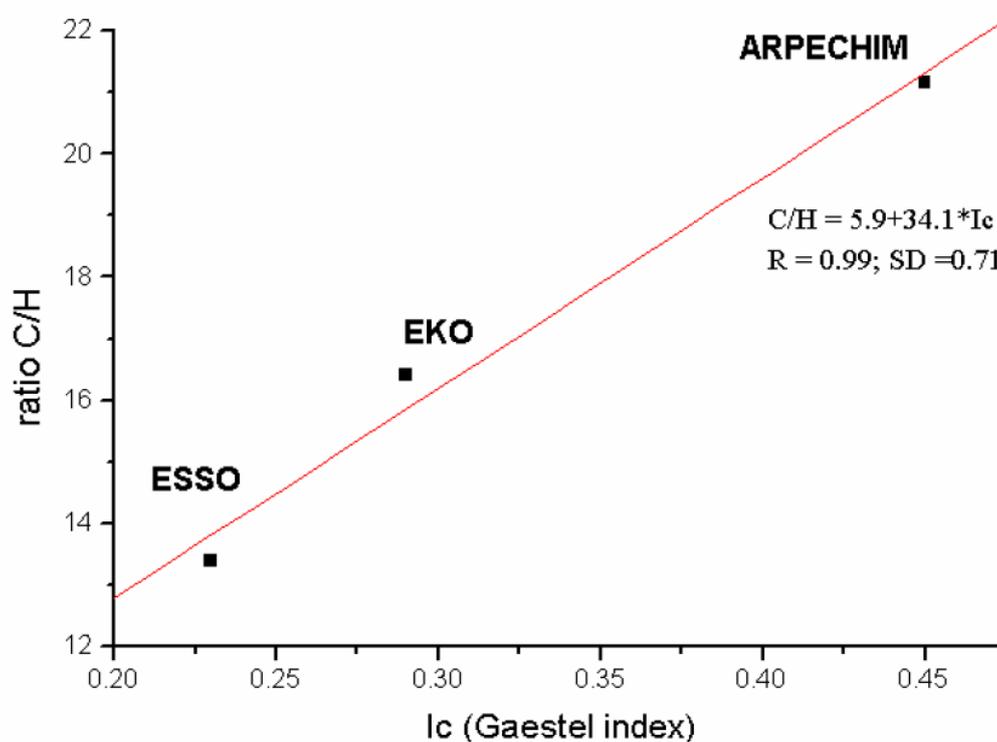


Fig.3. The aromatic factor C/H as a function of colloidal index.

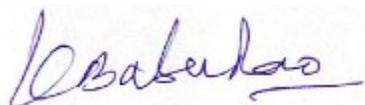
https://www.researchgate.net/publication/260288471_Determination_of_the_carbon_hydrogen_ratio_in_bitumen_using_prompt_neutron_gamma_activation_analysis

JC could have obtained C/H ratio details for bitumen and Naphtha from HPCL or calculated from literature as given above. So, the carbon dioxide emissions from fire calculated by JC are erroneous.

Open combustion of Bitumen and naphtha produce heavy smoke as witnessed from the photographs presented in the JC report. That is black carbon pollution is generated. Experts did not consider it.

		Calculation for SO₂ emission		Calculation for CO₂ emission
Environmental Compensation for emissions contributed	=	2,380 Kgs of SO ₂ X Environmental price of SO ₂	+	2,11,000 Kgs of CO ₂ X Environmental price of CO ₂ with VAT of 3.5% per annum
	=	2,380 Kgs of SO ₂ X 11.5 €/Kg	+	2,11,000 Kgs X (0.057 €/Kg X 0.21)
	=	27,370 €	+	2,525.67 €
	=	1€ = Rs. 89.028 (As on 25.05. 2021)	+	1€ = Rs. 89.028 (As on 25.05.2021)
	=	Rs. 24,36,696/-	+	Rs. 2,24,855/-
Total of Rs. 26,61,551/- (rupees twenty six lakhs sixty one thousand five hundred and fifty one only)				

Carbon dioxide pollution cost is given as 2,11,000 Kgs X (0.057 €/Kg X 0.21). What is the factor 0.21? If it is meant to be for VAT, it should be increasing the pollution cost and not decreasing it. It should have been 1.21. So, the entire calculation for CO₂ emissions has to be scrapped.



Dr K Babu Rao

Dr V G Rao

Dr K Venkat Reddy