

BEFORE THE NATIONAL GREEN TRIBUNAL (SZ) CHENNAI
MEMORANDUM OF APPLICATION
(Under Section 18(1) read with Sections 14, 15 of National Green
Tribunal Act, 2010)

OA No. 24 of 2021

O.A Ninan

... Applicant

VERSUS

The State of Kerala & Ors

... Respondents

REPLY AFFIDAVIT FILED BY THE APPLICANT

I, O.A Ninan S/o O.N. Abraham aged 75 years and serving as the manager, Grace Mount Residential School, Kumbanadu P.O Thiruvalla, Pathanamthitta , Kerala - 689 547 do solemnly affirm and sincerely state as follows:

1. I state that I am aware of the facts and circumstances of the case and competent to swear this affidavit.
2. I am advised to raise the following concerns concerning the Reply Filed by the 4th Respondent/Kerala Water Authority dated on the 7th day of January, in the OA 24 of 2021 by O.A. Ninan Kerala Vs the State of Kerala Thiruvananthapuram and others. I deny the entire contents of the affidavit under reply, except to the extent expressly admitted hereunder.



3. I am advised to state that in contrary to the claim of KWA that after conducting a detailed survey, a comprehensive scheme is designed for implementation, the survey and analysis on which the scheme is planned is not complete. A little consideration of the Preliminary Project Report (PPR) or Detailed Project Report (DPR) will show that in the design, **Alternative Proposals of the Project** are not considered. Normal design practice is after considering all the Alternative Proposals, the most technically and financially suitable one would be selected after the detailed analysis of the costs of each Alternative Proposal and technical viability as well. In this case no such exercise was done and so it is difficult to get convinced about the technical soundness or cost effectiveness of the Project.
4. Consequence of this bad planning is the technical blunder happened that did not explore the efficacy and effectiveness of the different alternatives for which as claimed by KWA administrative sanction was obtained. Unfortunately the proponents of the Project failed to conduct a comparative study of various alternatives when they deviated from the normal practice of KWA. And so the loss to the public exchequer due to the deviation from the normal practice of the design of KWA cannot be assessed.
5. The Source of water is selected by issuing an Source Adequacy certificate by the proponent without proper homework, which is quite evident from the PPR/DPR in which no analysis of the water source was carried out. In fact they should have taken the dry weather flow in the summer months of the river after deducting the active drawing of water from the river by the existing & ongoing water supply and irrigation schemes. Many of the water supply schemes in the upstream side has to be stopped or regulated in the acute summer time due to shortage of raw water in the river. If the



Tribunal call for the log book of the raw water pumping in the upstream pump houses for the last ten years, the shortage of raw water in the river would come to light. In the DPR of the Project the management of rejects was mentioned as dumping into an existing lagoon and the supernatant would be discharged into the existing channels. Now when the objections has been raised by the residents with regard to the management of the waste, the proponent has been delivering the Hon'ble Tribunal with modified replies like moving the goalpost to counter the objections without proper study. Customizing the response based on the points raised by the Applicant is bad in law whereas nothing of this sort was mentioned in the DPR.

6. From the studies conducted, the Report which was submitted to Tribunal in the earlier submission, the Pamba river water has a minimal Bio-chemical oxygen demand (BOD) of 4.5 mg/l and this BOD is present in the proposed intake point also. This BOD is primarily generated by the dead leaves, domestic sewage discharged in the river and due to human use in the upstream side of the river like pilgrimage of Sabrimala. When the solids are concentrated to 1% in a Recycling plant and when it soak up the filth of the remaining 99% treated product water, the BOD of the solids turnout to be 450 mg/l (Result of a simple calculation: $4.5 \times 100 / 1 = 450$ mg/l). The BOD content of 250 mg/l present in the domestic sewage which is treated through a domestic STP, as per law requires a prior environmental audit. So the waste water treatment plant, the so-called Recycling plant, is supposed to treat waste of BOD 450 mg/l which is more virulent than domestic sewage (BOD = 250 mg/l). The performance of the so-called Recycling plant can be forecasted by the design under the DPR and subsequent environmental audit by the mandated agency. This exercise



only can predict harmless or otherwise of the products of the so-called Recycling plant to the Ecology instead the 4th Respondent/Kerala Water Authority is accusing the Applicant of misconception and off-headedly stating that the sludge won't cause any environmental pollution.

7. The respondents are confidently stating that they have never stopped the Land Acquisition process even though the scientific backing and legal sanctity of the Project is being questioned by the Applicant before the Hon'ble Tribunal and waiting for its decisions.
8. It is true that as per rules Environmental Impact Assessment (EIA) is not required for setting up a Water Treatment Plant (WTP). However, it is required for a Wastewater Treatment Plant (WWTP) or STP. Recycling Plant is analogous to an STP in which it is treating a waste that is more virulent than domestic STP in this case. In fact EIA would be attracted into this Project because in this case the placement of STP in a landlocked area 6 km away from the river bank, flouting the guidelines of the Central Public Health Engineering and Environmental Organization (CPHEEO) in which the guidelines states that the WTP should be as near as possible to the river from which it is sourced, the copy of the guidelines submitted as exhibits in the previous submission to Hon'ble Tribunal. Whereas, if the WTP is located in the vicinity of the river as done in other WTPs of KWA, this wastewater would be discharged fresh to the river before it get putrefies due to stagnation and before it develop an anaerobic condition. It takes the anaerobic condition to start in 24 hours with the biodegradation of solids, then the BOD level starts to build up to higher level of about 450 mg/l as stated above. However, in the normal case without a Recycling Plant, the solids concentrated by sedimentation and filtration process of the WTP as done by KWA in other Plants, would be discharged into the river,



within 5 hours before anaerobic condition develops. It get purified due to the dilution with the water in the river from which it is collected.

9. (i),(ii), & (iii) - Now KWA is stating that it has no plans to discharge the wash water generated from TP to the nearby land or water body and it is being treated in a recycling system as per CPHEEO guidelines. If so it should be with an engineering design & drawings with calculation predicting the performance of the Recycling Plant. And as it is an WWTP which is treating wastewater which is more virulent than domestic sewage - calculation submitted in the previous Para, it needs EIA also. The Applicant and the local residents fear that they would be duped into untold environmental sufferings with the WWTP imposed upon them without proper design and subsequent environmental audit. The proponent - officers who offhandedly claiming no environmental harm would retire after some time and go scot-free with hefty pensions leaving the residents in distress. That is why a proper engineering design with engineering drawings & calculation predicting the performance of the Recycling Plant and an audit by way of EIA is solicited to save the residents from environmental harm.

(iv) It has been claimed in the Affidavit submitted by the 4th Respondent/Kerala Water Authority stated that the KWA is operating more than 200 nos. of WTPs without any adverse effect on the environment. This is because the Plants are operating in the principles of discharging the wastewater within 5 hours to the river without any Recycling Plant before anaerobic condition develops and it get purified due to the dilution with the water in the river as stated in this Affidavit in the previous page. Whereas, the 25 mld Plant in Medical College Campus Kottayam, central Kerala, working on the principles of treating the wastewater in a Recycling Plant in



the same principle as planned for the new proposed plant for this Project is a failure. As the Recycling Plant failed to treat the sludge, the raw sludge with high BOD from the Recycling plant is being discharged to the undeveloped areas that belong to Medical college. As the dumping area is the government land, there is no public protest. This point was reiterated in the earlier submission before the Hon'ble Tribunal by the Applicant for which the 4th Respondent/Kerala Water Authority never uttered a word denying this in their subsequent submissions, must be because they are accepting the fact.

10. It is claimed by the 4th Respondent/Kerala Water Authority that Average flow of Pamba river for the last year was 64.987 cumecs and 10 years average flow 1270.88 cumecs. The average flow is not the data which is to be equated for the availability of water in the source because the water is required in the summer months for which dry weather flow i.e. the flow in the summer months in the river is to be considered for ascertaining the adequacy of the source. In Kerala, the Southwest and Northeast monsoon delivers the 90% rains that span to five months June, July, August, September and October of the year. Once the rain stops, the water recedes in the water bodies due to the steep terrain of the State so that the water discharges to the Sea in a couple days and the state is left with a drought situation in the remaining seven months of the year if summer rains fail that often happens.

(ii) In many a time around the year especially in the aforesaid seven non-raining months, it is a common sight that the Pamba river flow is completely stopped and river formed into ponds. During this period the hydroelectric Projects also stopped functioning due to shortage of water in



the dams that devoid the river of the tail water. These aspects are not worked out in the analysis of the source adequacy.

(iii), (iv) The 4th Respondent/Kerala Water Authority is trying to introduce before the Hon'ble Tribunal, the studies conducted in connection with the Pampa Achencovil Vaippar Link Project (PAVLP) that reported the river has 3127 million cubic meters of surplus water. This is a study conducted to transport the surplus water of the river from the monsoon rains in June, July and August, to Tamilnadu border districts, that causes flood in Kerala or else the surplus water would drain into the sea. Whereas in the Tamilnadu border districts, they are facing acute summer during this period. This study is nothing to do with the source adequacy which should be based on the dry-weather flow ie. summer flow. This reasoning of the 4th Respondent/Kerala Water Authority would only be misleading and cause misunderstanding.

(v) In the study, regarding the water availability in different parts of India, conducted under the Central Water Resources Ministry, the Kerala state is termed to be one of the most per-capita water distress areas of the country based on the population density. Regarding this Project of providing water supply scheme to the seven Grama Panchayaths viz. 1) Puramattom, 2) Kallupara, 3) Ezhumattoor, 4) Kunnamthanam, 5) Eraviperoor, 6) Koipuram & 7) Tottappuzhassery. Out of which the formerly mentioned five Grama Panchayaths viz. Puramattom, Kallupara, Ezhumattoor, Kunnamthanam and Eraviperoor situates on the banks of the Manimala river, whereas only the latterly mentioned two Grama Panchayaths viz. Koipuram & Tottappuzhassery situates on the banks of the Pamba river. However, the water source proposed for this Project is Pamba river which is an anomaly especially when the whole of the Kerala state is under water distress and it



amounts to an unfair gesture to the people who live on the banks of Pamba river and adjoining areas for their water needs. When there is shortage of water the practice should be such that the available water in the local area is to be distributed equally to the general public inhabiting there. As a result of this bad planning of KWA, the shortfall in water availability in this region would aggravate in the future. Whereas, KWA is unsuccessfully trying to prove that the Pamba water source is adequate for this Project by equating the surplus water in the monsoon season of five months - June, July, August, September and October of Kerala state without mentioning anything about the dry season of the remaining seven months. While who live on the banks of Pamba river knows how the river dry up in dry spells of the summer seasons. In this context the Media Reports are the testimony about Pamba River - REPORT IN THE HINDU "PCB flags pollution threat in Pamba" report published in the Hindu on December 12, 2019 Reported by Radhakrishnan Kuttoor PATHANAMTHITTA: I may state that Pamba River also known as Dakshina Ganga because of its historic relationship with the Sabarimala Temple, the river originates from the Sabari hills in the Western Ghats and flows west through the districts of Idukki, Pathanamthitta and Allappuzha. It is also the third-longest river in Kerala and flows through one of the most densely populated regions of the state. **"The Pamba river is slowly dying due to environmental degradation"** as reported in technical publications & The Hindu newspaper 2019 report and several other mainstream media reported this shocking scientific news. Experts say that the primary cause for degradation is extensive deforestation in the catchment areas. **Unscientific and uncontrolled withdrawal of water in the river upstream to be blamed for the drying without any flow in lean season**



(vi) It is incorrect to term the shortfall on the waste management system of KWA raised by the Applicant, as a wrong priority to misguide the Hon'ble Tribunal. When all the guidelines laid down for the Project including the management of the waste is satisfied, then only the Project is outstanding & said to achieve its intended goal. In fact a shortfall in one area, the entire Project would fail completely.

11. The 4th Respondent/Kerala Water Authority submitted that all components of a water supply scheme are important, for which the Applicant has no issues. It is mentioned by the 4th Respondent/Kerala Water Authority that during the last high flood in August, 2018 many treatment plants constructed in the low lying areas were flooded. The above flood in August, 2018 was a 1 in 100 year flood, a repetition of the big flood in 1924 (1099 Malayalam Era). Whereas the WTPs including its components are designed for an ultimate period of 30 years. So for the WTPs which are designed for an ultimate period of 30 years, the ground level is placed above high water level of 1 in 50 year flood, the higher bracket considered includes the safety factor. This is based on the cost effectiveness against an overdesign and to use the available land near the bank of the river as per CPHEEO guidelines without over expenditure for raising the land. That is why many treatment plants of KWA were flooded in the 2018 flood of 1 in 100 year as they are placed at a high water level of 1 in 50 year flood. It is quite natural that a structure placed at a high-water level of 1 in 50 submerge in a 1 in 100 year flood. In fact only buildings of national importance like State Secretariats, District collector civil stations and the like are designed for a 1 in 100 year. This is to prohibit other structures' cost to a minimum level against an overdesign. Therefore this wrong conception on the design basis of basing the high



water level on a 1 in 100 year - 2018 flood ended up KWA to a site 6 km from the river with no facility for the disposal of wastewater and forced them to deviate from the normal design practice. And this would definitely skyrocket, among other things, the cost of the Project with regard to capital cost and running cost on the introduction of the Recycling Plant. Unfortunately the proponents of the Project failed to conduct a comparative study of various alternatives when they deviated from the normal practice of KWA. And so the loss to the public exchequer due to the deviation from the normal practice of the design of KWA cannot be assessed.

12. (i) & (ii) - It is submitted by the 4th Respondent/Kerala Water Authority that discharging the residue from the water treatment plant directly to the river is not the best method of disposal and also in modern treatment plants the wastewater will be recycled and proper sludge handling & disposal facilities are proposed along with water treatment. However, for the proper sludge handling & disposal facilities of a concentrated sludge to 1% from the raw water when concentrated is more virulent than domestic STP, as worked out in the earlier Para. It takes the anaerobic condition to start in 24 hours with the biodegradation of solids, then the BOD level starts to build up to higher level of about 450 mg/l. Thus as the Recycling plant is treating a waste more virulent than STP, it needs the environmental audit of the competent agency as in the case of the STP. The practice of locating the WTPs on the river banks facilitates the continuous flushing of the wastewater having discharged to the river by mixing and getting diluted in the river flow with any ill-effects of muddy water, BOD & chemicals being eliminated. This practice has been followed by KWA and still being followed for new WTPs located near the vicinity of



the river. So it is wrong to say KWA proposes modern scientific wastewater disposal system. Similarly, 99% of the WTPs of the KWA are located in the vicinity of the river and not in the landlocked area far away from the river, including the major WTPs of the state like Aluva waterworks which supplies water to Cochin city having located on the banks of 'Aluva River (Periyar)', Aruvikara waterworks which supplies water to Thiruvananthapuram city having located on the banks of 'Aruvikara river', Mavoor waterworks which supplies water to Kozhikode having located on the banks of 'Chali Aru' and the like operate on this principle.

13. It is submitted by the 4th Respondent/Kerala Water Authority that it has no plan to discharge the wastewater from the treatment plant to the nearby land or natural drain. Rather the wash water would be recycled & reused, sludge will be disposed as per CPHEEO norms.

This needs to answer the questions like a) What is the characteristics of the product water from the Recycling plant?, b) If the quality of the recycled product water is not as good as raw water, what is the backup plan for using up the recycled water in other areas? c) If the quality of the recycled water low, will they blend it with raw water and treat it in the WTP? d) In that case a stage will be reached due to accumulation of the waste they have to discharge/waste it to the environment as in STPs? e) Have they compared the cost of treatment plant with Recycling plant or without Recycling plant?

However in the DPR which is the fundamental commentary of the design of the Project has mentioned that the waste is being dumped into an existing lagoon and the supernatant liquid will be discharged to the natural water courses, both lagoon and a through drainage to the river is nonexistent in the site. Whereas, now the 4th Respondent/Kerala Water Authority is



improvising the replies offhandedly in an unprofessional way to counter the objections on the design. It is true that BOD is a sign of organic pollution generated from dead leaves, organic matter and also none of the townships in upstream side of the river including Ranni, Kozhencherry and the like don't have STPs and so they are freely discharging wastewater from hotels and other facilities into the river without any treatment. This would worsen the BOD level in the river. KWA which is equipped with many laboratories can easily verify the level of BOD in lean summer period and pilgrimage periods and derive the data for the design of the Recycling Plant and get the environmental clearance.

(ii) The Applicant has submitted a record to illustrate that the average BOD of the Pamba river as 4.5 mg/l and submitted before the Hon'ble Tribunal in the previous Affidavit. The Respondent/Kerala Water Authority is objecting it offhandedly saying that it is not sure about the sampling point. Whereas, KWA which is equipped with District laboratories and State laboratory can very well test the river water sample for BOD and counter the argument of the Applicant by facts and figures. Instead the 4th Respondent/Kerala Water Authority is describing the phenomenon of self-cleaning capacity of the river in which the pollutants discharged to the river get cleaned itself by natural process. If it is true, then 'Adayar river' and 'Koovam river' in Chennai would have delivered pure water by its self-cleaning capacity when it reaches downstream. BOD of the sludge worked out to 450 mg/l by the Applicant as mentioned above using a simple math calculation that if the river water has 4.5 mg/l BOD, the sludge which forms 1% of the raw water that get concentrated with the impurities then the BOD of the sludge increases to 450 mg/l. If KWA believes that it is wrong then it can test the samples in a Pilot plant study or in a similar Recycling



plant. It is right to say that all the process in the WTP reduces the BOD of the product water of the WTP. But the vanished BOD of the treated product water of the WTP would be transferred and soaked up by the concentrated sludge, which has to be treated and disposed off safely for which an environmental audit is required to allay the fears of the residents. It is wrong to say that the BOD will be reduced when it comes in contact with the atmospheric air or in the process of cascading type of aeration provided in the WTP process, only a marginal oxygenation happens here, but not for the full requirement. That is why large amount of air is being supplied in WWTP/STPs by the blowers actuated by the air compressors or by surface mechanical Aerators to satisfy the oxygen demand of the sludge.

Now the 4th Respondent/Kerala Water Authority is stating offhandedly that they have proposed wastewater treatment with reuse and sludge handling & disposal facilities. However in the DPR which is the fundamental commentary of the design of the Project has mentioned that the waste is dumped into an existing lagoon and the supernatant liquid will be discharged to the natural water courses, both lagoon and a through drainage to the river is non-existent in the site, a copy of the pages of DPR submitted to the Hon'ble Tribunal in the earlier submission of the Applicant. On the other hand, if the 4th Respondent/Kerala Water Authority are serious, they should have provided the design of the Recycling plant with drawings outlining the characteristics of the product water of the Recycling plant and sludge including the safe disposal methods of the sludge and seeking the environmental audit on the treatment process. The performance of the Recycling plant always tend to fail and then the proponent would be forced to discharge untreated sludge to the



surroundings. Whereas, as mentioned earlier the 25 mld Plant in Medical College Campus Kottayam, central Kerala, working on the principles of treating the wastewater in a Recycling Plant in the same principle as planned for the new proposed plant for this Project is a failure. As the Recycling Plant failed to treat the sludge, the raw untreated sludge with high BOD from the Recycling plant is being discharged to the undeveloped areas that belong to Medical college. As the dumping area is the government land, there is no public protest. If this is repeated here, the residents would be doomed with their agricultural land end up barren. This point was reiterated in the earlier submission before the Hon'ble Tribunal by the Applicant for which the 4th Respondent/Kerala Water Authority never uttered a word denying this in their subsequent submissions, must be because they are accepting the fact.

14. Now the 4th Respondent/Kerala Water Authority is stating that they have proposed wastewater treatment with reuse and sludge handling & disposal facilities. However in the DPR which is the fundamental commentary of the design of the Project has mentioned that the waste would be dumped into an existing lagoon and the supernatant liquid would be discharged to the natural water courses, both lagoon and a through drainage to the river is non-existent in the site.
15. Now the 4th Respondent/Kerala Water Authority is again stating offhandedly that they have proposed wastewater treatment with reuse and sludge handling & disposal facilities. However in the DPR which is the fundamental commentary of the design of the Project has mentioned that the waste would be dumped into an existing lagoon and the supernatant liquid would be discharged to the natural water courses, both lagoon and a through drainage to the river is non-existent in the site. Customizing the



response based on the points raised by the Applicant is bad in law, whereas nothing of this sort was mentioned in the DPR. On the other hand, if the 4th Respondent/Kerala Water Authority is serious they should have provided the design of the Recycling plant with drawings and sought the environmental audit

16. The 4th Respondent/Kerala Water Authority is explaining the process of the treatment process of surface water using WTPs, which is fine, but this doesn't resolve the issues in question. The 4th Respondent/Kerala Water Authority is stating that sludge treatment includes sludge thickening, sludge dewatering either by using drying bed, sludge lagoon, filter press, vacuum filtration or centrifuge. This is a process that takes place in a WWTP/STP that requires an environmental audit.

(ii) In the DPR, no mention of the treatment process of the Recycling Plant with Engineering design and drawings or about the disposal of the sludge including the final disposal of the sludge in the landfill. The Applicant humbly request that "Where is the land they have planned for the landfill?" The 4th Respondent/Kerala Water Authority has stated that KWA is operating more than 200 WTPs in all over Kerala with maximum capacity of 173 mld at Kozhikode. The Applicant humbly request that on which principle these Plants have been working whether on the principle of the wastewater having discharged directly to the river when the wastewater is fresh before any biodegradation of the wastewater starts or with Recycling Plant. The Applicant humbly state that 99% plants working on the principle of the wastewater having discharged directly to the river when the wastewater is fresh before any biodegradation of the wastewater starts, whereas none of the plants in Kerala working on Recycling Plant principle is efficiently working in which Plant in the Medical college



campus, Kottayam is the classic example.

The 4th Respondent/Kerala Water Authority has stated that Kerala Water Authority is operating a 33 mld Water Treatment Plant in the heart of Thiruvalla town, nearly 10 km from this proposed site, which started operations in 1977. In fact I am advised to state that there is a natural drainage to facilitate a smooth flow of the reject and wastes from the aforesaid WTP located in the Thiruvalla and it ends up in 'Chandakavu' a tributary of Manimala River located at 2 Km from the Plant and so no complaints have been reported. Whereas in this case, the proposed site is a landlocked area with no direct drainage to the river located at 6 Km away will result in the flooding of the region with environmental ill effects. Now KWA has customized the response based on the points raised by the Applicant is bad in law with claim that they are going for a complete recycling of the reject water in this case, whereas nothing of this sort was mentioned in the DPR. The raising of the issue of Water Treatment Plant located in Thiruvalla town is out of context at this juncture which works on the traditional principle of discharging the wash water to the river before it get putrefies. This allow it to get purified by mixing with the water of the river. This clearly shows the lack of confidence of KWA on the Recycling process.

The 4th Respondent/Kerala Water Authority has stated that there has been no environmental issues regarding the operation of the 200 plus Water Treatment Plants being operated by KWA because 99% plants working on the principle of the wastewater having discharged directly to the river when the wastewater is fresh before any biodegradation of the wastewater starts.



17. I am advised to state that the Applicant believes that the best method of wastewater disposal is to discharge the wash water directly to the river because 99% plants working on the principle of the wastewater having discharged directly to the river when the wastewater is fresh before any biodegradation. The 4th Respondent/Kerala Water Authority in his statement vouched that no adverse effect on environment is reported so far due to the operation and maintenance of these units anywhere from Kerala. However the 4th Respondent/Kerala Water Authority states that discharging the residue from a water treatment plant is not the best method. How can the 4th Respondent/Kerala Water Authority make such a statement while 99% of the WTP work on the principle of the wastewater having discharged directly to the river when the wastewater is fresh before any biodegradation. Will they modify all WTPs with Recycling Plant?. Also can the 4th Respondent/Kerala Water Authority vouch his statement in the light of the WTP with botched Recycling Plant in the Medical College, Kottayam?.
18. (i) The 4th Respondent/Kerala Water Authority stated that Pamba river is flowing 176 km long; the river is charged by about 288 rivulets. In fact the rivulets become live only in the rainy season, whereas it goes dry in the summer months.
- (ii) It is true that there are many hydroelectric projects in the upstream of Pamba river. The 4th Respondent/Kerala Water Authority stated that the average discharge of Pamba river for the last year is 64.987 cumecs and for the last 10 years average flow is 270.88 cumecs. However, the water supply is most required in the drought season ie. acute summer season when the flow in the river is dry-weather flow. However dry weather flow should be equated to find the water adequacy of the source which is not



worked out in this case. So the information given by the respondent are not relevant for the water supply source. Further statistics with regard to dry-weather flow is required to predict the adequacy of the source.

(iii) The 4th Respondent/Kerala Water Authority further stated that the studies conducted in connection with PAVLP (Pamba Achenkoil Vaippar Link Project) reported that river had 3127 million cubic meter of surplus water. It is reported by the 4th Respondent/Kerala Water Authority that hence by withdrawing 40 mld of water for drinking purpose will not have any impingement and entrapment impacts in the holy river Pamba and there won't be any ecological imbalance of extracting 40 million litre of water daily as there is sufficient run off in Pamba river during lean months also. This hypothesis is wrong because this is a study conducted to transport the surplus water of the river from the monsoon rains in June, July and August, to Tamilnadu border districts, that causes flood in Kerala or else the surplus water would drain into the sea. Whereas in the Tamilnadu border districts, they are facing acute summer during this period. This figures in this study cannot be correlated with the source adequacy which should be based on the dry-weather flow ie. summer flow. This reasoning of the 4th Respondent/Kerala Water Authority would only be misleading and cause misunderstanding.

(iv) The 4th Respondent/Kerala Water Authority further stated that KWA usually prepares the project after detailed investigation of the source and scheme area. Whereas in this case, a mere certificate from the Proponent that 'source is adequate' was indicated in the DPR without working out any of the details with regard to the dry-weather flow of the river after deducting the intake of water by the existing and ongoing Irrigation and water supply schemes. The calculation given by the 4th Respondent/Kerala



Water Authority to assess the source adequacy is wrong as it is based on average flow, whereas the average flow is the average of the maximum flow and minimum flow. However, the source adequacy should be based on the minimum flow of the river in the summer months after deducting the intakes of the existing and ongoing water supply and Irrigation schemes.

19. The DPR contains only a mere certificate indicating 'source adequacy'. There is no calculation of dry-weather flow ie minimum flow of the river after deducting the intakes of water by the existing and ongoing water supply or irrigation schemes. River gauge details are also not provided in the DPR.
20. In this Para also the 4th Respondent/Kerala Water Authority is stating the same thing as in Para 15 & 16 in which it states that KWA usually prepares the project after detailed investigation of the source and scheme. However in the DPR, the detailed calculation by which the source adequacy has been arrived is missing other than placing a mere 'source adequacy certificate' by the proponent. The same calculation in the Para 15 is given again in this Para 17 also by the 4th Respondent/Kerala Water Authority. The calculation given to assess the source adequacy is wrong as it is based on average flow whereas the average flow is the average of the maximum flow and minimum flow. However, the source adequacy should be based on the minimum flow of the river after deducting the existing water supply and Irrigation schemes.
21. (i) The 4th Respondent/Kerala Water Authority has stated that as per EIA notification mandated prior environmental clearance for Water Supply Projects is not required. However, for WWTP/STP prior environmental clearance is required. Whereas, the Applicant has proved in his



explanation that the proposed 'Recycling Plant' is supposed to handle a waste more virulent than domestic sewage as in STP which required a prior environmental clearance. So introducing a Recycling plant in the process other than the normal practice necessitated a prior environmental clearance. Whereas as per the normal practice of KWA, if the WTP is located in the vicinity of the river, this wastewater would be discharged fresh to the river before it get putrefies due to stagnation that develop an anaerobic condition in the waste. It takes the anaerobic condition to start in 24 hours with the biodegradation of solids, then the BOD level starts to build up to higher level of about 450 mg/l. The Applicant believes that the Recycling plant in this case, as substantiated by the calculation in the previous Para, is supposed to handle a waste more virulent than domestic sewage in the STP. This logic is standing unless proved otherwise with facts and figures. However, in the normal case without a Recycling Plant the solids concentrated by the sedimentation and the filtration process of the WTP would be discharged into the river, within 5 hours before anaerobic condition develops and it get purified due to the dilution with the water in the river from which it is collected. In this Para the 4th Respondent/Kerala Water Authority is giving the details of the configuration and chemical composition of earth which the Applicant believes not relevant to the situation and so no replies required. The 4th Respondent/Kerala Water Authority has stated that the sludge produced by the Recycling plant is proposed to be disposed of any of the CPHEEO approved methods like sludge thickening and dewatering either by using drying bed, sludge lagoon, filter press or centrifuge. The dried sludge can be used for landfill, brick and tile manufacturing. The above processes are



analogous to WWTP/STP processes which required a prior environmental clearance.

(ii) This part of the Para which describes the self cleaning capacity of the river, is a repetition of Para 10 for which reply has been furnished then & there itself.

(iii) The 4th Respondent/Kerala Water Authority has stated that the process in the WTP reduces the BOD of the product water but this BOD is concentrated and transferred to the sludge which has to be treated, disposed off safely for which an environmental audit is required to allay the fears of the residents. It is wrong to say that the BOD will be reduced when it comes in contact with the atmospheric air or in the process of cascading type of aeration provided in the WTP process, only a marginal oxygenation happens here, but not for the full BOD requirement. That is why large amount of air is being supplied in WWTP/STPs by air blowers with compressors or by mechanical surface Aerators to satisfy the oxygen demand of the sludge.

(iv) Whereas as per the normal practice of KWA, if the WTP is located in the vicinity of the river, this wastewater would be discharged fresh to the river before it get putrefies due to stagnation that develop an anaerobic condition in the waste. It takes the anaerobic condition to start in 24 hours with the biodegradation of solids, then the BOD level starts to build up to higher level of about 450 mg/l. The Applicant believes that the 'Recycling Plant' is supposed to handle a waste more virulent than domestic sewage as in STP unless proved otherwise with facts and figures. However, in the normal case without a Recycling Plant the solids concentrated by the sedimentation and the filtration process of the WTP would be discharged into the river, within 5 hours before anaerobic condition develops and it get



purified due to the dilution with the water in the river from which it is collected. The 4th Respondent/Kerala Water Authority has stated that as per schedule VI of Environmental protection Rules, 1986, max BOD of the effluent that can be discharged into surface water is 30 mg/l whereas to irrigation land is 100 mg/l. The Applicant has no issues with this rule. The 4th Respondent/Kerala Water Authority is alleging that the land owner is going to establish a rubber related factory at the site that will generate high toxic and hazardous waste harmful to the environment and so the apprehension of the Applicant who is having suspicious relations with the land owner on the safety of environment is fully dishonest. The Applicant response to this statement by the 4th Respondent/Kerala Water Authority is that he has neither related to the land owner or he has no idea whether he is planning to setting up a rubber related factory and so his apprehension about the environment cannot be branded as dishonest. Needless to say that, this irresponsible statement of the 4th Respondent/Kerala Water Authority is his frustration on the Applicant having resorting to legitimate legal measures for seeking an environmental audit on the Project before the Hon'ble Tribunal.

(v) The 4th Respondent/KWA states that as per the National Drinking Water Policy, the drinking water needs to give top priority and this Project has to executed since the drinking water needs of the inhabitants of the seven Panchayaths. The Applicant also subscribes to this priority. The KWA stated that it proposes a proper wash water recycling system as per CPHEEO manual. However CPHEEO never prohibits an environmental audit if the situation deserves this.

(vi) The 4th Respondent/KWA states that there won't be any treat to the environment due to the construction of the water treatment plant in the



proposed site and the wastewater generated from the water treatment plant will be properly managed by Recycling Plant and proper sludge management techniques. However this is a customized response happened when concerns have been raised regarding the functioning of the Plant and management of the waste, the DPR which is the fundamental commentary of the design of Project never mention any of this. Also, there is neither design nor drawings.

22. I am advised to submit the following objections on the Reply Filed by the 5th Respondent on the 9th day of January in the OA 24 of 2021, O.A. Ninan Kerala Vs the State of Kerala Thiruvananthapuram and others having submitted before the Hon'ble National Green Tribunal Southern Zone, Chennai

- 1) It is reported by the 5th Respondent that she is well acquainted with the facts of the case.
- 2) It is reported by the 5th Respondent that she has filed the report on the Original Petition as per the direction of the Hon'ble Green Tribunal dated 04-02-2021. Subsequently as per the direction of the Hon'ble Tribunal, the Joint committee was formed to inspect the area in question and examine the Project on the basis of the allegation made by the Applicant and submitted a report.
- 3) It is stated by the 5th Respondent that the Executive Engineer, Project Division, KWA, Adoor submitted requisition in Form 2 for the acquisition of the land for the construction of the water treatment plant for the supply of the drinking water to the inhabitants of 7 Panchayaths.



Consequently, sanction was accorded vide G.O(Rt) 1064/2017/WRD sated 19-12-2017 to acquire the land.

- 4) It is stated by the 5th Respondent that in compliance with the direction the Hon'ble Tribunal the proposed site was inspected on 14-08-2021.
- 5) It is stated by the 5th Respondent that a Social Impact Assessment report was published on 13-11-2020.
- 6) It is stated by the 5th Respondent that the above acquisition will be done by invoking the provisions contained in the RFCTLARR Act , 2013.
- 7) It is stated by the 5th Respondent that the Committee after visiting the proposed land is of the opinion that original petition filed by the Applicant is devoid of merit.
- 8) It is stated by the 5th Respondent that all the apprehensions of the Applicant are unwanted and allegation are baseless.
- 9) **Response by the Applicant to the above statements of the 5th Respondent:**

In view of the above report by the Joint Committee referred in the above affidavit by the 5th respondent, objection in detail was submitted against the Joint Committee report before the Hon'ble Tribunal, the brief of which as follows:

- 10) I am advised to state that the report filed by the committee is liable to be rejected at the threshold since the project proponent, Kerala water authority itself is part of the committee and in fact has been appointed as the nodal agency by the government. I am further advised to state that Nemo judex in causa sua - no man can be a judge of his own cause is a fundamental principle of justice administration. The Project proponent cannot be part of an exercise to determine the correctness of the project designed and implemented by them. The actions of the district collector and the other authorities have been



impugned in the application and they will not obviously find fault with themselves. Therefore, I am advised to state that the entire report filed by the "committee" is liable to be rejected and has no merit.

- a. I am advised to state that the essential judicial functions of this Hon'ble Tribunal, to decide on the merits of the application filed by the applicant, cannot be delegated to the respondents or any committee, especially comprising of the respondents themselves.
- b. In the Joint Committee report it is stated that "The proposed water treatment plant (WTP) by KWA at the identified location is not expected to make much adverse impact on the environment." I am advised to state that the Joint committee's above statement is relying on a general phrase 'not much adverse impact' in which they should have scientifically specified the range of the adverse impact. The factual inaccuracies such as absence of any alleged pond etc have obviously not been mentioned by the committee.
- c. Regarding the backwash and sludge management
 - i. The extract of the report of the Joint committee states that "The discharge of backwash water will be eliminated by recycling Plant". I am advised to state that there is no scientific basis to support this claim of the Joint committee as this is a statement without providing the design and drawings of the recycling Plant in this case or its behaviour in similar cases.
 - ii. The extract of the report of the Joint committee states that "A proper Sludge management system is proposed by KWA". Whereas I am advised to state that the recycling plant is a wastewater treatment plant which needs an Environmental Impact Assessment (EIA) with regard to the thickening of the sludge and



dewatering either by using drying bed, sludge lagoon, filter press, vacuum filtration. I am advised to state that the site for dumping the waste is not identified or else the arrangement for disposing of the sludge cake is not in place, in fact nowhere in any of the KWA's treatment plants this arrangement is in place. If so I state that they can produce trip sheets or tendering processes of the sludge cakes before the Hon'ble Tribunal to prove this point. In Kerala with the maximum density of the population, it is impossible to get dumping sites which end up in the sludge being dumped into the site of the WTP which will generate leachate that get magnified to multiple times during rain, will spell environmental hazard to the nearby areas.

- d. I may state that the extract of the report of the Joint committee states that "It is observed that the standard practises have been followed for the feasibility studies and identification of location of the proposed WTP and deviation from existing guidelines/manuals by relevant authorities such as CPHEEO etc. were not observed by the Committee and it is felt that modifications may not be required". I am advised to state that the above Joint Committee reported statement is far away from precision. Whereas, as per the accepted norms for the design of Water Treatment Plant (WTP) and that accord with the current CPHEEO manual, the recommended location of the WTP shall be near the source of water, copy of the relevant page of the PHE handbook which has submitted to the Hon'ble Tribunal that depicts the CPHEEO guidelines, highlighting the advantages of the above arrangement have been filed. However for this project, the distance between the proposed source and proposed



WTP is 6 km, which is far away, is a clear disregard of the above mentioned CPHEEO norms.

- e. I may state that the extract of the report of the Joint committee states that "The Senior Officer of the State Pollution Control Board has observed that Water Treatment plants come under Green category as per categorization of the Board based on pollution potential". This statement is true. However, I am advised to state that once Recycling Plant is employed to treat the concentrated wastewater from the treatment plant that required the storage and treatment of wastewater, the category of this component changes to waste treatment plant which needs an Environmental Impact Assessment (EIA). Wastewater sludge recycling KWA's plan along with sludge treatment requires major additional investment to take into consideration the social and environmental impacts. I am advised to state that the main hidden problem is the cost of setting up of WTP with wastewater treatment system is not included in this proposed project report. Hence it is assumed that KWA has a hidden agenda of dumping the liquid slurry and solid waste to project site itself without any environment clearance.
- f. I may state that the extract of the report of the Joint committee states that "The Committee is also of the opinion that it is the constitutional right of every citizen to have access to safe drinking water and that public interest and the welfare of common man are the paramount concern of every Government and its instrumentalities". However, I state that the rights of the residents adjacent to the plant site against the environmental ill-effects should also have to be protected. I further state that KWA is moving



forward with the WTP along with waste dumping plan in the name of drinking water scheme without proper environmental clearance from Government of India.

- g. I may state that the extract of the report of the Joint committee states that "The Government of India has also announced Jal Jeevan Mission with the aim to provide safe drinking water to all villages by year 2024. The activities of this mission in the seven villages can be completed only after setting up this Water Treatment Plant". I am advised to state that even though this may be true, but the over withdrawal of water from Pamba river, if not properly done without a study will cause dry-out of the river in lean season and this will do more harm than help to the community. I state that it is reported in daily Malayala Manorma on 11, September 2018 that in summer months Pamba River water stop flowing due to dry up in Parakkadavu in Chengannur which is near the proposed draw point for this project- Poovathur kadavu. Water level in Pamba River has dipped as the landslide caused by torrential rains eroded the surface soil of river bed so that people can even walk across the Pamba River in several dried-up stretches. It is therefore stated that Joint Committee either forgot to explore or ignored the Pamba River river flow data in the summer.

23. **Pamba River Environmental flows** – I am advised to state that in order to maintain a natural healthy ecosystem in Pamba river, the environmental flows (E flows) should be maintained with this proposed WTP withdrawal of large volume of Pamba River water for this new KWA project. 'Environmental flows' means enough water is left in



Pamba River, which is managed to ensure downstream environmental, social and economic benefits. The Joint Committee did not even consider the impact of Environmental flows of Pamba river against the total withdrawal of river raw water for this project. I am advised to state that the feasibility of this project can't be verified or substantiated without Pamba river E-flows of upstream and downstream, the scientific assessment of E-flows of the river should also be considered as an important indicator in the comprehensive Environmental impact analysis of this project. Pamba River E-flows analysis should include the identification of the quantity, quality and distribution of flow patterns in river upstream and downstream with withdrawal location as the focus point and it provides a balance between the proposed WTP water usage and protection of Pamba water resources for general community with biological diversity.

24. I am further advised to state that pollution has to be controlled at the upper stretches in order to minimize pollution in the lower stretch. Total water withdrawal in the upper stretches have to be identified (118 mld) along with the proposed 40 mld (Millions of Litres Per Day) water withdrawal for this project. Pamba River's heavily polluted stretch is shown in pictorial representation in page 44 submitted in the previous submission by the Applicant. The flow regime of a river, comprising of five key variables, magnitude, frequency, duration, timing and rate of change, is considered the key factor responsible for sustaining biodiversity and maintaining the integrity of the river ecosystems. This type of comprehensive E-flows data can only help to establish the actual impact of this new project against the current natural health of Pamba river. I am



advised to state that the Joint committee did not even address this important issue may be because current E-flows data in lean period is very much in dangerously outside of permissible level and it may negatively affect the current KWA project plan with WTP water withdrawal location and capacity. (*The National Green Tribunal (NGT) passed a landmark order on 20 September 2018 pertaining to increasing polluted river stretches in the country (NGT 2018). As per order of the Hon'ble NGT dated 9/8/2017 in O.A.no 498/2015, it is important to maintain e-flow during lean season in Pamba River. The NGT observed that the State Pollution Control Boards (SPCBs) have failed to check pollution. The tribunal distinctly stated that the chief secretary of each state and the administrator of each union territory will be responsible for preparation of the action plan. ACTION PLAN FOR REJUVENATION OF POLLUTED STRETCH (MANNAR - THAKAZHY) OF RIVER PAMBA- Submitted by District Level Technical Committee (Pathanamthitta District) Before the River Rejuvenation Committee (As per G.O (Ms) No.12/2019/WRD Dated 30.04.2019))*

25. **Pamba River---Assessment of seasonal variations of physico-chemical parameters:** I am advised to state that in a the research paper- Water Quality Dynamics and Sustainability Evaluation of Pamba River, Kerala International Journal of Research and Scientific Innovation (IJRSI) | Volume V, Issue II, February 2018 | ISSN 2321-2705, the objective of the study was to investigate the seasonal variations of ten (10) physico-chemical parameters such as temperature, pH, transparency, hardness, salinity, ammonia, carbon dioxide, Dissolved oxygen, Biological Oxygen Demand and Chemical Oxygen Demand. As a part of the investigation, four stations were selected for the study for the assessment



of water quality of areas such as Kozhancherry, Aranmulla, Chengannur and Mannar. Water samples were collected during the year 2016-2017 from the study area and the physico-chemical parameters were analysed with respect to the seasons following standard methods (Significance of this study - This study samples were collected in the Pamba River locations close to KWA's proposed water withdrawal spot at Poovathur kadavu). The study indicates that there is a pronounced variation of most of the water quality parameters with variations in season. There are numerous causes including increasing number of industries and various other anthropogenic activities in the neighbouring regions, global climatic changes that lead to the degradation of the quality of water. Pamba River water quality parameters may provide a warning signal about the further ecosystem degradation with withdrawal of water for this potential scheme. I am advised to state that the findings of this study also provide a better understanding of this damaged Pamba River ecosystem and reminds the need for its restoration rather than further destruction by this project's huge water withdrawal. The study indicates that there is a pronounced variation of all the ten(10) Pamba River water quality parameters outside the permissible limit with variation in season. Pamba water quality analysis shows that all ten(10) critical parameters are dangerously outside the permissible limit during lean season. This study was done in the location KWA is planning to withdraw 40 mld (Millions of Litres Per Day) river water for this project. I state that this committee report did not cover this serious water quality parameter variations in lean season.

26. **KWA Wastewater Management Plan** :I state that it is noticed that most recent KWA response regarding disposal of sludge & water waste



produced in the proposed water treatment plant (WTP) will be recycled. Recycling of raw river water waste can be done only using an additional wastewater treatment plant (WWTP) for further processing the waste, mainly because it is considered as the only alternative for the treatment of waste generated in this water production processes. This new KWA suggestion requires an additional WWTP along with WTP. Current KWA project design report in the Detailed Project Report (DPR) has no WWTP Design or there no budgeted fund allocated for wastewater treatment - PASK is a project status alert system of Kerala Water Authority-KWA Official Website-Rs.42.35 crore or there is no plan to get environmental clearance for a wastewater treatment plant like a STP. I am further advised to state that the WWTP system also require an anaerobic stabilization pond followed by a facultative pond. This may be the reason the KWA is claiming a pond in the vicinity of proposed current WTP location. We feel this may be an imagination or fantasy or a "cut & paste" genuine mistake from another outer state water treatment plant Detailed Project Report , the plan appears to release solids from a WTP effluent into a WWTP that includes anaerobic stabilization ponds followed by a facultative pond. Indeed, this process scheme is inviting potential environmental disaster.

Water treatment plants produce a wide variety of waste products along with drinking water. These residuals may be organic and inorganic compounds in liquid, solid, and gaseous forms depending on the source of raw river water and the type of treatment processes. I am advised to state that the following steps are not considered by KWA in for developing this type of comprehensive water treatment plant along with waste management plan:



- Characterize form, quantity, and quality of the waste residuals;
- Determine appropriate regulatory requirements waste management;
- Identify feasible disposal options;
- Identify mitigation of foul odours - The foul odours at waste stream originate from the anaerobic decomposition of organic compounds. A natural by-product of anaerobic digestion is Hydrogen Sulphide (H₂S), which gives off a strong nauseating smell. Due to its low solubility in wastewater, it is released into the atmosphere, producing creation of disease causing an offensive odour.
- Select appropriate residuals processing/treatment technologies;
- Develop a residuals management strategy that meets both the economic and noneconomic goals established for a water treatment facility.

KWA is now proposing 100% recycling of waste from the water treatment plant as alternative to make solid brick from water waste , this plan is not covered in original KWA project report . The majority of Kerala WTP's dispose of solids and liquid waste removed during the treatment process by returning them to river water or water body or simply landfilling. These are the three(3) standard practices now followed by KWA. These three waste management options are not possible in this proposed project location. Processing these waste need extensive waste treatment plant similar to a STP (sewage treatment plant) as waste is very much same as sewage based on test data of intake raw water from Pamba River. The proposed location of WTP inside this Koipuram valley without any natural or artificial



drainage is not possible due to landlocked situation which will create wide water logging. Report claim that the natural drains are connected to water body but this is not a true statement provided in the joint report, this proposed WTP location is completely a landlocked area without any natural drainage. The waste from this plant will be hazardous in nature in solid and liquid form, which will be toxic, corrosive, reactive and it will be very bad for ground water if the plan is to dump to nearby land. I state that this committee report did not cover or study independently this serious waste management issue.

27. **Media Reports about Pamba River - REPORT IN THE HINDU "PCB flags pollution threat in Pamba" report published in the Hindu on December 12, 2019 Reported by Radhakrishnan Kuttoor PATHANAMTHITTA:** I may state that Pamba River also known as Dakshina Ganga because of its historic relationship with the Sabarimala Temple, the river originates from the Sabari hills in the Western Ghats and flows west through the districts of Idukki, Pathanamthitta and Allappuzha. It is also the third-longest river in Kerala and flows through one of the most densely populated regions of the state. I may state that **"The Pamba river is slowly dying due to environmental degradation"** as reported in technical publications & The Hindu newspaper 2019 report and several other mainstream media reported this shocking scientific news. Experts say that the primary cause for degradation is extensive deforestation in the catchment areas. Unscientific and uncontrolled withdrawal of water in the river upstream to be blamed for the drying without any flow in lean season. I may state that another cause for concern is the disposal of human waste directly into the river. According to a report by the Kerala Pollution Control



Board, the level of pollution in the river during the period of Sabarimala pilgrimage is very high. The report indicates that at Pamba, where the pilgrims take the 'holy dip' before darshan at the holy shrine, the total coliforms (a rod shaped bacteria) was 190 times above the permissible limit. This highly polluted raw water is going to be the intake for this WTP which is going to be pumped 6 km in to the land-locked Koipuram inland without proper waste management plan. It is reported by Kerala PCB that Pamba River's Total Coliform, CFU/100 ml 200, 260, 290 and Faecal Coliform, CFU/100 ml 60, 50, 90 are very high, based on monthly progress report for the month of August 2021 as per Order of the Hon'ble NGT in the matter of O.A.No.673/2018 including Kerala Initiative a project on River Biodiversity Rejuvenation of Pamba.

28. I may state that the KWA's unsustainable "large volume" Water Treatment Plant with "recycling", an unapproved waste processing scheme, will result in environmental damage to Pamba River & degradation of ground water in Koipuram. It is submitted that it is important to perform a comprehensive environmental impact study done by independent agency from the fact that wastes generated from the process will impact the environment and it is in fact mandated by the precautionary principle and principle of sustainable development. I state that in these circumstances, environmental good governance requires that NGT should order an independent EIA studies to assess the impact of the proposed project. It is submitted that an NGT appointed independent committee to verify the availability natural drainage in Koipuram as claimed by KWA and verify the KWA waste water recycling protocol as it is not provided in the original KWA's Detailed Design Report and promised to provide a complete waste



(solid & liquid water waste) processing or disposing plan to Koipuram community on 8-11-2018 at SIS meeting.

29. I may state that the KWA is planning to construct Water Treatment Plant in land-locked Koipuram, without proper water waste disposal and KWA is moving forward with the plan in the name of drinking water scheme without obtaining environmental clearance from Government of India. The KWA is aimed at drawing 40 Million of Liters Per day of Pamba River without Eflows or dry flow study as part of Environment Impact Assessment (EIA). The estimated cost of the project is only ₹42.5 crore, therefore waste recycling was not included in this project due to budget constraints and its impact has been suppressed.
30. I am advised to state that in contrary to the claim of KWA that after conducting a detailed survey, a comprehensive scheme is designed for implementation, the survey and analysis on which the scheme is planned is not complete. A little consideration of the Preliminary Project Report (PPR) or Detailed Project Report (DPR) will show that in the design, **Alternative Proposals of the Project** are not considered. Normal design practice is after considering all the Alternative Proposals, the most technically and financially suitable one would be selected after the detailed analysis of the costs of each Alternative Proposal and technical viability as well. In this case no such exercise was done and so it is difficult to get convinced about the technical soundness or cost effectiveness of the Project.
31. When concerns have been raised against the configuration of discharging this reject onto the land, KWA came up with the scheme of Recycling plant which is neither specified in the DPR nor budgeted. Now as claimed by KWA, if recycling plant is employed to reuse the liquid part of



the wastewater, this will generate semi-solid waste with a very high BOD content having concentrated from the wastewater from the plant which requires environmental clearance for its Processing, Transport and Disposal. KWA is proceeding without carrying out the Environmental Impact Assessment (EIA) and without seeking the clearance of the State level Environment Impact Assessment Authority (SEIAA) Act, 2010, for this project. While the volume of the waste discharged is huge with high BOD which is arrived by calculation in the previous Para as 450 mg/l having submitted under the earlier submission of the Applicant to the Hon'ble Tribunal. Whereas the STP that treats domestic sewage the BOD is only 250 mg/l and this requires a prior environmental audit.

32. However, the cost of setting up the Recycling Plant is not included in this proposed project. Neither the technical details of the Recycling Plant nor the budget is included in the DPR.
33. It is relevant to note that KWA has no plans to address the accumulation of the waste from the recycling plant, any waste management plan for processing, transporting and disposal of the waste. The site for dumping of the waste is not identified or earmarked till date. This would end up in discharging this concentrated semi-solid waste with high pollution potential to the natural channels which spell far-reaching environmental hazard to the whole area which would come to light only if this is subject to an environmental auditing. I am advised to state that the site for dumping the waste or else the arrangement for disposing of the sludge cake is not in place in any of the KWA's treatment plants. If so I state that they can produce trip sheets or tendering processes of the sludge cakes before the Hon'ble Tribunal to prove this point. In Kerala with the maximum density of the population, it is impossible to get dumping



sites which end up in the sludge being dumped into the site of the WTP which will generate leachate that get magnified to multiple times during rain, will spell environmental hazard to the nearby areas.

34. The Joint Committee constituted by the District Collector as per the instructions of the Hon'ble Tribunal states that "The Government of India has also announced Jal Jeevan Mission with the aim to provide safe drinking water to all villages by year 2024. The activities of this mission in the seven villages can be completed only after setting up this Water Treatment Plant". I am advised to state that even though this may be true, but the over-withdrawal of water from the Pamba river, if not properly done without a study will cause dry-out of the river in lean season and this will do more harm than help to the community. I state that it is reported in daily Malayala Manorma on 11, September 2018 that in summer months Pamba River water stop flowing due to dry up in Parakkadavu in Chengannur which is near the proposed draw point for this project-Poovathur kadavu. Water level in Pamba River has dipped as the landslide caused by torrential rains eroded the surface soil of river bed so that people can even walk across the Pamba River in several dried-up stretches. It is therefore stated that Joint Committee either forgot to explore or ignored the Pamba River flow data in the summer.

35. "The Joint Committee constituted by the District Collector as per the instructions of the Hon'ble Tribunal is also of the opinion that it is the constitutional right of every citizen to have access to safe drinking water and that public interest and the welfare of common man are the paramount concern of every Government and its instrumentalities". However, I state that the rights of the residents adjacent to the plant site against the environmental ill-effects should also have to be protected. I



further state that KWA is moving forward with the WTP along with unscientific waste dumping plan in the name of drinking water scheme without proper environmental clearance from Government of India.

36. I may state that the extract of the report of the Joint committee states that "The Senior Officer of the State Pollution Control Board has observed that Water Treatment plants come under Green category as per categorization of the Board based on pollution potential". This statement is true. However, I am advised to state that once Recycling Plant is employed to treat the concentrated wastewater from the treatment plant that required the storage and treatment of wastewater, this component changes to waste treatment plant category which needs an Environmental Impact Assessment (EIA).
37. Wastewater sludge recycling KWA's plant along with sludge treatment requires major additional investment to take into consideration the social and environmental impacts. I am advised to state that the main hidden problem is the cost of setting up of WTP with wastewater treatment system is not included in this proposed project report. Hence it is assumed that KWA has a hidden agenda of dumping the liquid slurry and solid waste to project site itself without any environment clearance.
38. I am advised to state that the report filed by the Joint Committee constituted by the District Collector as per the instructions of the Hon'ble Tribunal is liable to be rejected at the threshold since the project proponent, Kerala water authority itself is part of the committee and in fact has been appointed as the nodal agency by the government. I am further advised to state that Nemo judex in causa sua - no man can be a judge of his own cause is a fundamental principle of justice administration. The Project proponent cannot be part of an exercise to determine the



correctness of the project designed and implemented by them. The actions of the district collector and the other authorities have been impugned in the application and they will not obviously find fault with themselves. Therefore, I am advised to state that the entire report filed by the "committee" is liable to be rejected and has no merit.

39. I am advised to state that the essential judicial functions of this Hon'ble Tribunal to decide on the merits of the application filed by the applicant cannot be delegated to the respondents or any committee, especially comprising of the respondents themselves.
40. The KWA stated that it proposes a proper wash water recycling system as per CPHEEO manual. However CPHEEO never prohibits an environmental audit if the situation deserves this.
41. The 4th Respondent/KWA states that there won't be any treat to the environment due to the construction of the water treatment plant in the proposed site and the wastewater generated from the water treatment plant will be properly managed by Recycling Plant and proper sludge management techniques. However this is a customized response happened when concerns have been raised regarding the functioning of the Plant and management of the waste, the DPR which is the fundamental commentary of the design of Project never mention any of this. Also, there is neither design nor drawings or budgetary provision for the Recycling Plant.
42. It was stated by the Respondents that as per the National Drinking Water Policy, the drinking water needs to give top priority and this Project has to executed since the drinking water needs of the inhabitants of the seven Panchayaths. The Applicant also subscribes to this priority. The KWA stated that it proposes a proper wash water recycling system as per



CPHEEO manual. However CPHEEO never prohibits an environmental audit if the situation deserves this.

43. I may state a relevant study regarding the water availability in different parts of India, conducted under the Central Water Resources Ministry, the Kerala state is termed to be one of the most per-capita water distress areas of the country based on the population density. Regarding this Project of providing water supply scheme to the seven Grama Panchayaths viz. 1) Puramattom, 2) Kallupara, 3) Ezhumattoor, 4) Kunnamthanam, 5) Eraviperoor, 6) Koipuram & 7) Tottappuzhassery. Out of which the formerly mentioned five Grama Panchayaths viz. Puramattom, Kallupara, Ezhumattoor, Kunnamthanam and Eraviperoor situates on the banks of the Manimala river, whereas only the latterly mentioned two Grama Panchayaths viz. Koipuram & Tottappuzhassery situates on the banks of the Pamba river. However, the water source proposed for this Project is Pamba river which is an anomaly of grabbing their reasonable resources from the have-nots especially when this region also is under water distress. This amounts to an unfair action inflicted on the people who live on the banks of Pamba river and adjoining areas who solely depending on the river for their water needs. When there is shortage of water, the available water in the local area is to be distributed equally to the general public there. In this case it is being transported elsewhere even though water is available in the same extent there also. As a result of this bad planning of KWA, the shortfall in water availability in this region would aggravate in the future. Whereas, KWA is unsuccessfully trying to prove that the Pamba water source is adequate for this Project by equating the surplus water in the monsoon season of five months - June, July, August, September and October of Kerala state without mentioning



anything about the dry season of the remaining seven months. While who live on the banks of Pamba river knows how the river dry up in dry spells of the summer seasons. In this context the Media Reports are the testimony about Pamba River - REPORT IN THE HINDU "PCB flags pollution threat in Pamba" report published in the Hindu on December 12, 2019 Reported by Radhakrishnan Kuttoor PATHANAMTHITTA: I may state that Pamba River also known as Dakshina Ganga because of its historic relationship with the Sabarimala Temple, the river originates from the Sabari hills in the Western Ghats and flows west through the districts of Idukki, Pathanamthitta and Allappuzha. It is also the third-longest river in Kerala and flows through one of the most densely populated regions of the state. **"The Pamba river is slowly dying due to environmental degradation"** as reported in technical publications & The Hindu newspaper 2019 report and several other mainstream media reported this shocking scientific news. Experts say that the primary cause for degradation is extensive deforestation in the catchment areas. **Unscientific and uncontrolled withdrawal of water in the river upstream to be blamed for the drying without any flow in lean season**

44. It was stated by the Respondents that as per EIA notification the prior environmental clearance for Water Supply Projects is not mandated. However, for WWTP/STP prior environmental clearance is required. Whereas, the Applicant has stated in his explanation that the proposed 'Recycling Plant' is supposed to handle a waste more virulent than domestic sewage as in STP which required a prior environmental clearance. So introducing a Recycling plant in the process other than the normal practice necessitated a prior environmental clearance. Whereas as per the normal practice of KWA, if the WTP is located in the vicinity of the river, this



wastewater would be discharged fresh to the river before it get putrefies due to stagnation that develop an anaerobic condition in the waste. It takes the anaerobic condition to start in 24 hours with the biodegradation of solids, then the BOD level starts to build up to higher level of about 450 mg/l. The Applicant believes as per the calculation in the previous Para that the Recycling Plant is supposed to handle a waste more virulent than the domestic sewage. However, this is not proved otherwise with facts and figures by the Respondents. However, in the normal case without a Recycling Plant the solids concentrated by the sedimentation and the filtration process of the WTP would be discharged into the river within 5 hours before anaerobic condition develops and it get purified due to the dilution with the water in the river from which it is collected.

45. It was stated by the Respondents that the sludge produced by the Recycling plant is proposed to be disposed of any of the CPHEEO approved methods like sludge thickening and dewatering either by using drying bed, sludge lagoon, filter press or centrifuge. The dried sludge can be used for landfill, brick and tile manufacturing. The above processes are analogous to WWTP/STP processes which required a prior environmental clearance. The statement by the Respondents stating that as it used CPHEEO approved methods of waste disposal, it doesn't need a prior environmental clearance is a wishful thinking not founded on the rules as CPHEEO never prohibits any environmental clearance if it is required.
46. The calculation given by the Respondents to assess the source adequacy is wrong as it is based on average flow, which is the average of the maximum flow and minimum flow. Whereas, the source adequacy should be based on the minimum summer flow of the river after deducting



the intake of water by the existing and ongoing water supply and Irrigation schemes.

47. It was stated by the Respondents that all the components of a water supply scheme are important which the Applicant also subscribe to this. It is mentioned by the Respondent that during the last high flood in August, 2018 many treatment plants constructed in the low lying areas were flooded. The above flood in August, 2018 was a 1 in 100 years flood, a repetition of the big flood in 1924 (1099 Malayalam Era). Whereas the WTPs including its components are designed for an ultimate period of 30 years. So for the WTPs which are designed for an ultimate period of 30 years, the ground level is placed above high water level of 1 in 50 year flood, the higher bracket considered includes a safety-buffer. This is based on the cost effectiveness against an overdesign and to avoid the excess cost of raising the land on the bank of the river whereas CPHEEO guidelines required the WTP to be placed near the river as possible. That is why many treatment plants of KWA were flooded in the 2018 flood of 1 in 100 year as they are placed at a high water level of 1 in 50 year flood, submerging of it in 1 in 100 year flood is quite natural. In fact only buildings of national importance like State Secretariats, District collector civil stations and the like are designed for a 1 in 100 year. This is to prohibit other constructions' cost to a minimum level against an overdesign. Therefore this wrong conception on the design basis of basing the high water level on a 1 in 100 year - 2018 flood ended up KWA to a site 6 km from the river with no facility for the disposal of wastewater and forced them to deviate from the normal design practice prescribed by the CPHEEO. And this would definitely skyrocket the cost of the Project with regard to the capital cost and the running cost due to the addition of the



Recycling Plant. Unfortunately the proponents of the Project failed to conduct a comparative study of various alternatives when they deviated from the normal practice of KWA. And so the loss to the public exchequer due to the deviation from the normal practice of the design of KWA cannot be assessed.

48. In many a time around the year especially in the aforesaid seven non-raining months, it is a common sight that the Pamba river flow is completely stopped and river turned into ponds. During this period the hydroelectric Projects also stopped functioning due to shortage of water in the dams which would devoid the river of the tail water. These aspects are not worked out in the analysis of the source adequacy.

It is therefore prayed that the above submissions be taken into consideration by this Hon'ble Tribunal and the application be allowed as prayed.



O.A. Ninan
Manager, Gracemount School,
Kumbanad

Solemnly affirmed at Pattanamthitta]

This the 16th of May 2022 and]

signed his name in my presence]

Before me, 

VARUGHESE M EASO
Advocate
High Court of Kerala
Roll No: K 374-H/2000

Advocate, Pattanamthitta