

**BEFORE THE HON'BLE NATIONAL GREEN
TRIBUNAL SOUTHERN BENCH, CHENNAI**

O A NO. 17 OF 2021 (SZ)

Vipin Nath & Sinu C. Jacob : Applicant(s)

Versus

Bharat Petroleum Corporation

Limited and Others : Respondent(s)

and

O A NO. 265 OF 2017

&

M A 216 OF 2017

N.G. Soman : Applicant

Versus

The State of Kerala,

Kerala State Pollution Control Board : Respondent(s)

VOLUME 2

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Dated this the 18th day of December 2021

V.K Rema Smrithi, Advocate
ADDITIONAL STANDING COUNSEL FOR THE 5th RESPONDENT

REPORT ON NOISE MONITORING CONDUCTED BY THE BOARD
AT M/s BPCL KOCHI REFINERIES, AMBALAMUGHAL

This report has been prepared as per the order dated 01.10.2021 of the Hon'ble National Green Tribunal in OA 265 of 2015, OA 17 of 2021 as follows:

"In the meantime, Kerala State Pollution Control Board is directed to conduct noise level monitoring test inside the factory premises and also outside the premises at different locations including near the houses of the applicants in both cases so as to compare the noise levels difference as to whether it tallies with the standard provided or norms provided and submit a report to this Tribunal before the next hearing date"

During hearing, though it was submitted by the Board that there are certain difficulties in conducting noise monitoring to follow the protocol for such monitoring, the Hon'ble Tribunal specifically directed as follows:

The learned counsel appearing for the Kerala State Pollution Control Board submitted that the manner in which the report will have to be prepared as intended by the counsel for the project proponent viz., 1st Respondent is not possible, as the baseline report can be prepared only if functioning of the 1st Respondent unit is shutdown at least for some time for conducting the test and according to the 1st Respondent, it is not possible.

Measurement of sound levels were carried out at spots identified earlier based on complaints received in the Board. The noise data existing at these spots could be measured only while the industry in question was functional. Based on the monitoring reports, the Board has verified in detail at what intensity the noise level due to the operation of the industry in question is affecting the neighborhood where complainants are residing especially near the expansion projects viz. IREP, MSBP, Prodair Air Products and PDPP. Contentions were raised by the 1st respondent unit that the noise level measurements done by the Board are not correct since other industrial units are situated which might create noise interference. In this context it is submitted that other industrial units are located at locations more distant from

the complainant's spots than expansion areas of M/s BPCL itself viz. IREP, MSBP, or PDPP. Actually, the area spotted here is around M/s BPCL and its expansions and other sound sources may be M/s HOC, LPG Bottling plant, Prodair Air Products (Hydrogen Plant) and M/s FACT. Of the above, M/s FACT is located 1.65 to 4 kilo metere from all these complainant's spots whereas HOC is not functional. It is also observed that the LPG Bottling Plant (Bharath Gas) is not under operation after 10 P.M. Hence, it was decided that M/s. HOC, M/s. FACT and LPG Bottling Plant need not be considered as contributors to noise during night hours for noise monitoring.

Earlier the noise monitoring conducted by the Board was mainly concentrated on noise generated from flare stacks, certain process sheds, cooling tower of PDPP and other expansion works. Also, emphasis was given to conduct surprise monitoring of noise during night hours by the surveillance team of the Regional Office, Ernakulam since complainants usually pinpoint the severe lighting of flare stacks / its sound and noise due to processing sections during odd hours. Also, while hearing the applications on 29.10.2021, Hon'ble Tribunal ordered as follows,

"They can conduct test only on the basis of the manner in which the tests are being conducted and if there is any difference between the Online Monitoring and the physical test conducted by the Pollution Control Board, they are at liberty to mention the reasons as to why such things are happening. Further, they can also ascertain as to whether there is any possibility of cumulative impact of the noise that is likely to be emanated from other industries, if they are situated near or away from the 1st Respondent unit and that aspect can be noted by them in the report."

Hence, the Board decided to conduct field survey as a first step before noise monitoring to specifically mark locations of nearby industrial units also in addition to complainant's areas along with its distances. This is to ensure specific noise contributions to these affected families where nearness to different sound sources, whether it is from main plant / expansion plants of M/s BPCL Kochi Refineries Ltd. or other companies as alleged by M/s BPCL

Kochi Refineries Ltd. are noticed. It may be noted that the Board had already identified certain complainant's areas that get affected due to the noise from the respondent industry, list of which were already submitted to Hon'ble Tribunal through report dated 29.05.2021. Here, it may be noted that one more monitoring station is added from where specific complaints arose on earlier occasions. A brief introduction of specific complainant's locations with special reference to pollution sources and nearness to other industries are explained below. Copy of modified location details of complainant's areas, different plants of M/s BPCL and other industrial units is attached as **Enclosure 1**.

1. Kakkad Kara

This is the place where the petitioners in OA 17 of 2021 and other families are residing. The PDP Plant which is one of the expansion works of the 1st respondent company is situated near to these residences. The nearest resident to this plant is Mr. VipinNath, one of the petitioners in OA 17 of 2021. The complainant's house is across the road from PDPP-BPCL project site and drain flowing along the boundary of site. A high tension power line runs inside the project site close to the boundary. It is noticed that nearest major sources of noise are processing plant and flare stack of PDP Plant and the boundary of PDP Plant is at a distance of about 50 m *from the nearest residence*. The industries viz. M/s FACT, Cochin Division, LPG Bottling plant (Bharath Gas) and Hindustan Organic Chemicals are situated at a distance 2.4 km, 1.8 km and 1.3 km respectively.

Monitoring Location - Residence of Sinu Jacob, Thondattil(H), Kakkad Kara, Mamala P.O.

2. Adoorkara 1

This is a place situated along the western side of the PDPP project site and near to the BPCL water storage quarries and Chithrapuzha-Ponjassery road. Industries viz. M/s FACT, Cochin Division, LPG Bottling plant (Bharath Gas) and Hindustan Organic Chemicals are situated at a distance of about 1.5 km, 1.7 km and 1 km respectively. There is a pumping station of BPCL generating

continuous sound which is at distance of about 20 m from the nearest residence.

Monitoring Location - Residence of Manojkumar P.M, Purakkattu(H), Ambalamughal P.O, Adookkara.

3. Adoorkara 2

Actually, this place is located along the western side of the PDPP project site but very near to the flare stack of PDP Plant which is placed along southern direction and is a major source of noise. The local people claimed that the area has been enclosed by BPCL project sites from three sides. The distance between nearest residence and industrial boundary is 90m only. The industries viz. M/s FACT - Cochin Division,LPG Bottling plant (Bharath Gas) and Hindustan Organic Chemicals are situated at a distance 2 km, 2.1 km and 1.3 km respectively.

Monitoring Location - Residence of Raju M.K, Madathil Parambil (H), Adookkara.

4. Kuzhikkad Residence Association

The location is at Aasramam road, Kuzhikkad, near the LPG bottling plant of BPCL. It is noticed that nearest major source of noise is from the LPG Bottling plant and the distance between nearest residence and industrial boundary is 10 m. The industries viz. M/s FACT - Cochin Division,LPG Bottling plant (Bharath Gas)and Hindustan Organic Chemicals are situated at a distance 2.15 km, 70 m and 800 m respectively.

Monitoring Location - Residence of Varghese C.P, Chittayil(H), Ambalamughal P.O, Kuzhikkad.

5. Area near to M/s Prodair Air Product

It is the area near main gate of this industry along the Kuzhikkad-Puthenkurishu road. It is noticed that nearest major source of noise is from M/s Prodair Air Products and the distance between nearest residence and industrial boundary is 20 m. The industries viz. M/s FACT - Cochin Division, LPG Bottling plant (Bharath Gas) and Hindustan Organic Chemicals are situated at a distance 2.4 km, 400 m and 800 m respectively.

Monitoring Location – Residence of Ravi T.K, Thazhuthedi(H), Ambalamughal P.O, Kuzhikkad.

6. Ayyankuzhi Area

Public complained that they are placed in between BPCL and HOCL (M/s. Hindustan Organic Chemicals Limited). It is noticed that nearest major source of noise is from BPCL and the distance between nearest residence and industrial boundary is 13 m. The industries viz. M/s FACT- Cochin Division, LPG Bottling plant (Bharath Gas) and Hindustan Organic Chemicals are situated at a distance 2.24 km, 540 m and 460 m respectively.

Monitoring Location – Residence of Santhosh K.A, Kizhakkeputhenpurayil (H), Ayyankuzhy, Ambalamughal P.O.

7. Neermel Area near Sulphur recovery plant

Neermel is adjacent to the sulphur plant of IREP project. The road and residences are on elevated area and the sulphur plant is approximately 125 m away from the public road. It is noticed that nearest major source of noise is from BPCL and the distance between nearest residence and industrial boundary is 25 m. The industries viz. M/s FACT - Cochin Division, LPG Bottling plant (Bharath Gas) and Hindustan Organic Chemicals are situated at a distance 4.17, 2.1 and 2.4 km respectively.

Monitoring Location – Residence of Omanakkuttan, Puthenourayil(H), Varikkoli, Neermel.

8. Puliampillymughal Residents Association

It is an area where 75 families are residing near Hydrogen, DHDS and LPG bottling plants. The petitioner in OA 265 of 2015 is residing here. It is noticed that nearest major source of noise is from M/s Prodair air products and the distance between nearest residence and industrial boundary is 208 m. The industries viz. M/s FACT - Cochin Division, LPG Bottling plant (Bharath Gas) and Hindustan Organic Chemicals are situated at a distance 2.6km, 670 m and 1.1 km respectively.

Monitoring Location - Residence of Soman N.G, Nenchemmalil(H), Kuzhikkad, Ambalamughal P.O.

9. Ward 16 of Vadavucode-PuthencruzPanchayath

This area is surrounded by M/s BPCL Main plant, IREP of BPCL, PDPP of BPCL, HOCL. It is noticed that nearest major source of noise is from M/s BPCL and the distance between nearest residence and industrial boundary is about 10 m. The industries viz. M/s FACT - Cochin Division, LPG Bottling plant (Bharath Gas) and Hindustan Organic Chemicals are situated at a distance 3, 1.5 and 1.34 km respectively.

Monitoring Location - Residence of Sunil K.E, Kavanakkuzhi(H), Ambalamughal P.O, Ettikkara.

10. Residence of Sri. Viju, Kokkat House, Ambalamughal

This residence is near PDP Plant. It is noticed that nearest major source of noise is cooling tower of PDP Plant which at a distance of about 60 m. The industries viz. M/s FACT - Cochin Division, LPG Bottling plant (Bharath Gas) and Hindustan Organic Chemicals are situated at a distance 1.79 km, 1.14 km and 440 m respectively.

Monitoring Location - Residence of VijuKuriakose, Kokkattu(H), Ambalamughal P.O.

Photographs showing Individual locations of complainant's spots where sound level meters are placed are attached as **Enclosure 2**

Thereafter, an action plan has been prepared to monitor sound levels of specific areas as mentioned earlier and a detailed data sheet showing distances between industries/complainants locations and measured noise intensities during day /night hours was prepared. Also, it was decided to assess sound level of one complainants' spot and two to three nearby industrial sound sources simultaneously during a specific period (Say 1 Hour). It is so suggested since this procedure would show the noise intensities at complainant's spots to assess whether the sound levels exceeding the limit stipulated and actual effect

of different sound source to this complainant at that particular monitoring period. It is also important to note that there are ten complainants spots and at least four days were needed to complete noise monitoring allocating five each complainants spots per day (Day or night) Monitoring were carried out on 29th and 30th November 2021, 1st 2nd 3rd and 4th December 2021. Data sheet prepared towards noise monitoring is attached as **Enclosure 3**.

Observations

1. At certain locations, sound intensities observed are higher than that of nearest noise source. It may be due to noise from nearby road due to vehicular movements during monitoring. There were specific observations of such incidents viz. Kuzhikkad, Ayyankuzhy areas especially during daytime.
2. People residing nearby are alleging that sound level during monitoring was found to be in low intensities than that of other week days especially along Kakkad and Adoorkara Areas. Their claim is that the industry was able to purposefully control noise generated from source since simultaneous monitoring of complainant's locations and source were carried out.
3. Certain areas inside the industry, where sound sources are at higher elevations (Like flare stacks of height more than 50 m and processing sheds hence the actual sound interference may be beyond the boundary at distant areas. Here, Ward 16 station is one good example where maximum possible inside locations were selected for inside source monitoring and sound interference is more at residential location.
4. There is a water pumping station very near (20 m) to Adoorkara 1 monitoring location which creates more noise interference than that of industrial units nearby.
5. Noise levels observation in the daytime at Neermel station (63.8 dB(A) Leq) is more than that of nearby industrial monitoring station (62.7 dB(A) Leq).

This might be due to the greenbelt influence where industrial monitoring station was selected whereas the residential area opted was an open space.

6. Noise level observation in the night at Puliampally area (63.2 dB(A) Leq) where the instrument was placed at the residence of Sri. N G Soman, one of the petitioner, is more than that generated from nearby industrial units (MSBP- 58.5 dB(A) Leq) or (Prodair - 58.7 dB(A) Leq) where sound of crickets were observed and that also might have influenced the noise level.

Interpretations

1. As mentioned earlier there were certain impracticalities while monitoring noise generated from such a huge industrial establishment. Important among them will be the insisted protocol of assessment of base noise / minimum time requirement for such noise monitoring etc. Here, it was specifically explained by the industry that shut down of the unit is practically not possible and the Hon'ble Tribunal had directed the Board to immediately conduct noise monitoring. Hence it was decided to monitor sound intensities for minimum one hour at almost all these complainant's spots and other industrial premises.
2. Noise level during day /night hours were individually monitored at these locations where monitoring were carried out at complainant's spots and nearby industrial units simultaneously for same time interval (Say 1 hr).
3. As per Environmental Clearance the ambient noise levels in and around the plant area during day/night time are 75/70 d B(A) Leq. Along residential areas the ambient noise levels as per Noise Rules are 55 / 45 d B(A) Leq during day and night times respectively. For commercial areas the standards are 65 dB(A) and 55 dB(A). It may kindly be noted that the

area beyond the 1st respondent unit has not been categorized by the concerned Department.

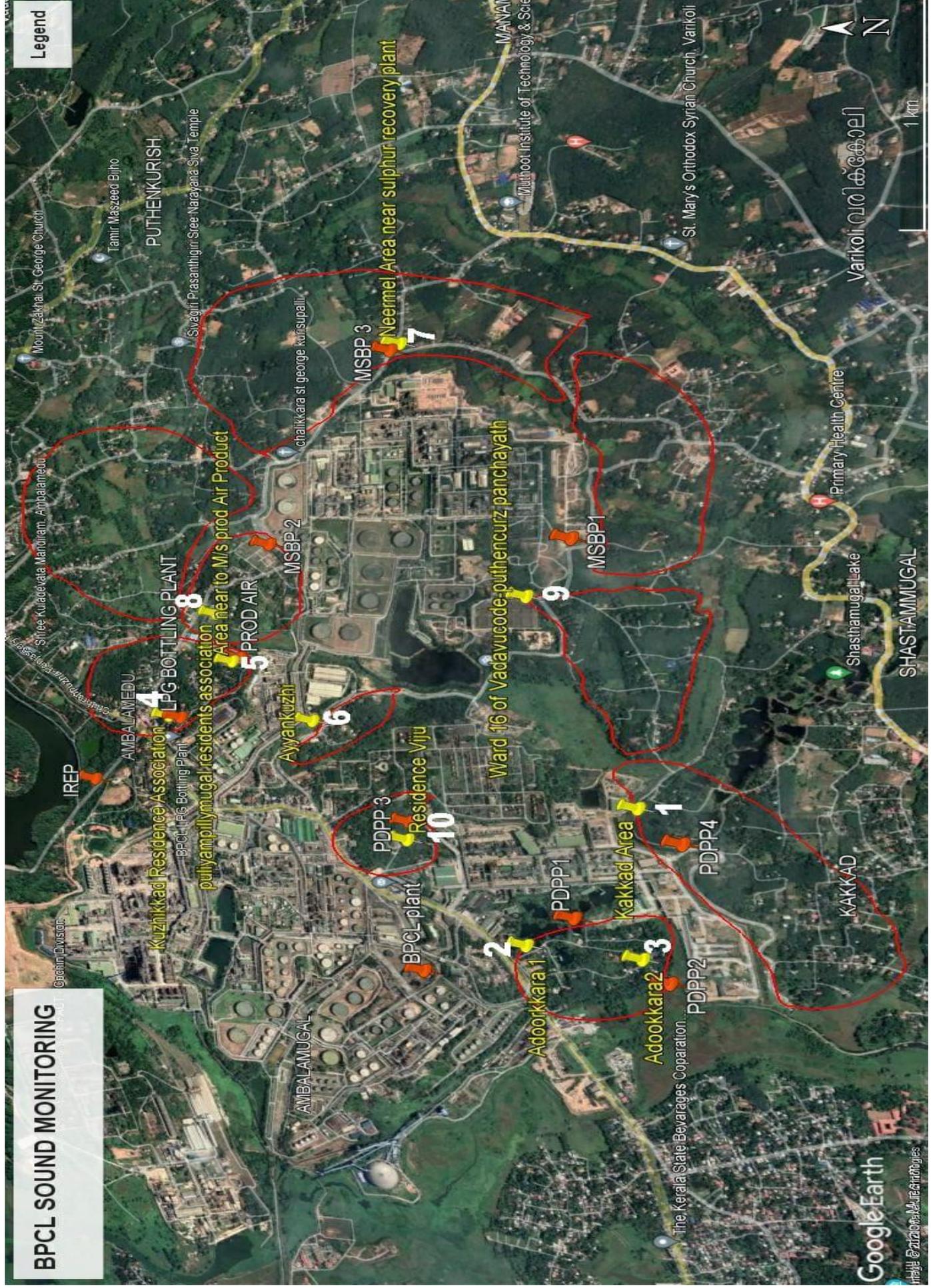
Conclusions

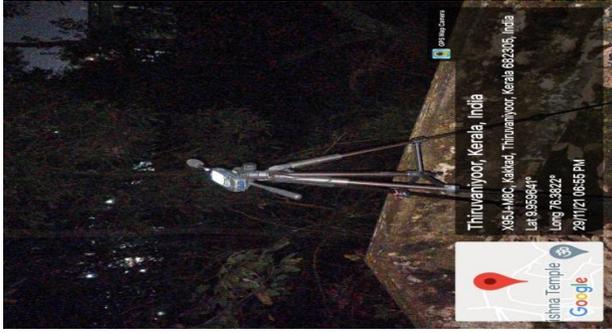
1. Though all stations except 1, 3 and 8 ie, Kakkad, Adoorkara 2, Puliyampally were showing exceeding concentrations of noise intensities (Standard 55 d B(A) Leq for residential) during day time.
2. It may be noted that all the residential stations are also showing exceeding values of noise during night time (Standard 45 dB(A) Leq for residential area).
3. Since there are allegations from the people residing nearby that low sound levels were observed during monitoring period than that normally generated by the industrial plants and to make the noise assessment transparent, Continuous Ambient Noise Monitoring Stations (CANMS) can be insisted along these complainant's spot and at other strategic points as insisted by the Board in the case of issuance of consent to MSBP plant.
4. Since the operation of the industrial plants in question is 24x7 basis, surprise inspections shall be strengthened where surveillance team of the Board can also interfere even if the complaint on noise arise during odd hours.



A handwritten signature in green ink, consisting of a large loop followed by a smaller loop and a horizontal stroke.

**Chief Environmental Engineer
For and On behalf of the Board**

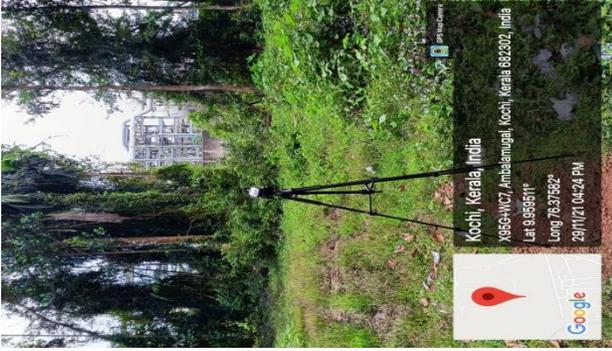




1. Kakkad Kara



2. Adookkara 1



3. Adookkara 2



4. Kuzhikkad



5. Near Air Product



6. Ayyankuzhy



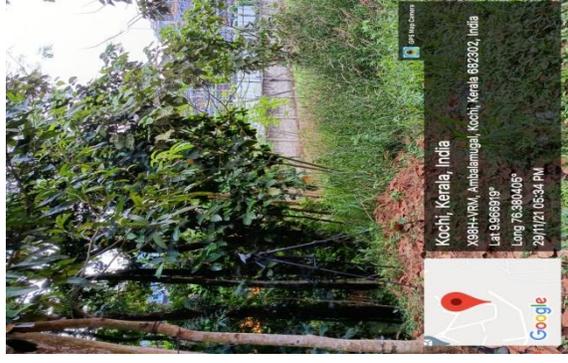
7. Neer mel



8. Puliyampallimughal



9. Ward-16 Vadavukode



10. Residential Viju

Enclosure 3

Sl No	Location	Measured Noise at complainant's spot				Sources (Distance in meter & Noise)													
		Day	Date	Night	Date	BPCL Main plant		IREP		PDPP		MSBP		Prodir Airproducts		LPG Bottling Plant			
						Distance(m)	Source Noise	Distance(m)	Source Noise	Distance(m)	Source Noise	Distance(m)	Source Noise	Distance(m)	Source Noise	Distance(m)	Source Noise	Distance(m)	Source Noise
Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night		
1	Kakkad	50.5	29.11.21	47.1	03.12.21	1000	56.2	55.8	2100		61	54.5	1360		1630		1800		
2	Adoorcara 1	57.6	29.11.21	56.8	02.12.21	400	59	55.6	1800		47.6	52.5	1670		1700		1750		
3	Adoorcara 2	52.5	29.11.21	51.4	02.12.21	800	58.8	55.3	2200		49	52.7	1890		1900		2100		
4	Kuzhikkad	60.2	30.11.21	51.8	03.12.21	1600			500	53.6	51.9	970		400		50	57.2		
5	Near Prod Air	56.3	01.12.21	55	04.12.21	1700			1100			380	58.6	58.4	90	61.3	58.5	370	56.9
6	Ayyankuzhy	65	01.12.21	54.2	04.12.21	1300			950			910	58	58.4	300	58.4	58.5	560	57
7	Neermel	63.8	01.12.21	57.9	04.12.21	3000			2600			30	62.7	60.5	1700	59.8	58.6	2100	58.6
8	Puliyampilly	53.9	01.12.21	63.2	04.12.21	1900			1100			400	57.9	58.5	420	58.6	58.7	570	56.7
9	Ward -16	59.7	30.11.21	56.7	03.12.21	1800			2000		50.5	54.6	300	59	64.6		1500		
10	Res Viju	62.9	29.11.21	60.3	03.12.21	600	56.5	55.4	1300		67.1	65.6	1500		1100	65		1100	