

Chapter IV

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Air Pollution occurs when the concentration of any substance which is introduced into atmosphere causes harmful effects to the environment, living and non-living things. Substances that are generally recognised as air pollutants include Suspended Particulate Matter (SPM), Respirable Suspended Particulate Matter (RSPM), Sulphur Dioxide (SO₂), Nitrogen Oxide (NO₂), Carbon Monoxide (CO), Carbon Dioxide (CO₂), Methane and Ozone Depleting substances such as Chlorofluorocarbon (CFC).

4.1 Inadequate monitoring of air pollutants

The CPCB had notified National Ambient Air Quality Standards (NAAQS) in November 2009 with 12 identified pollutants. It includes five gaseous pollutants such as Sulphur Dioxide (SO₂), Nitrogen Oxide (NO₂), Ozone (O₃), Carbon Monoxide (CO) and Ammonia (NH₃), two dust related parameters (PM₁₀ and PM_{2.5}), three metals (Lead, Nickel and Arsenic) and two organic pollutants (Benzene and BaP-particulate). The impact of the air pollutants on the environment is shown in *Appendix IV*.

It was observed in Audit that the PCBA was monitoring only three air pollutants - Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO₂) and Respirable Suspended Particulate Matter (RSPM/PM₁₀)/Suspended Particulate Matter (SPM) regularly at all the 22 locations. It was also observed that the PCBA did not carry out any study regarding effect of air pollution on human health in Guwahati city.

On being pointed out, the PCBA stated (August 2015) that due to some technical difficulties, all prescribed parameters could not be monitored and the CPCB regularly accepted PCBA's reports on four²⁵ quality parameters. However efforts had been made to include more parameters. As regards, study on effect of air pollution on human health, the PCBA stated (August 2015) that proposal for the assistance for carrying out a study had been forwarded (23 July 2015) to the MoEF, GoI.

The PCBA's reply was not tenable as the fact remained that the PCBA could not monitor all the parameters prescribed by the CPCB even after a lapse of five years and on the basis of analysing three parameters, actual air quality could not be ascertained.

²⁵ Out of the four, one of the parameter though previously prescribed by CPCB was not included in the list of air pollutants notified by CPCB subsequently and was therefore, irrelevant but the PCBA was still monitoring the same. As per the instructions of CPCB in vogue currently, PCBA was only monitoring three parameters prescribed.

4.2 Unscientific location of Air Quality Monitoring Stations

The PCBA was carrying out ambient air quality monitoring under NAMP (National Air Monitoring Programme) since 1991 and till date of audit there were 22 stations in Assam; of which, six stations²⁶ were located at Guwahati. The list of the monitoring stations in Guwahati along with their type and locations is given in *Appendix V*.



Air Monitoring station at Bamunimaidam

It was observed in audit that:

- As per the guidelines for Ambient Air Quality Monitoring, distribution of monitoring station in a city depends on the distribution of pollution source and population in a city. More stations should be located in areas according to population density, number of industries and vehicular density. However, physical verification of the six monitoring stations at Guwahati showed that all of them were located at places relatively with lesser population and vehicular density.
- As per the guidelines, monitoring stations should be located in residential/commercial, sensitive and industrial areas and samples should be collected and tested at least on a daily basis. But all the 22 monitoring stations in Assam were set up only in residential areas.



Air Monitoring station at Pragjyotish College, Santipur, Guwahati

On this being pointed out, the PCBA stated (August 2015) that all the stations were set up in urban and residential areas where PCBA could assess the air quality with reference to human habitation. Besides, industries also regularly monitor ambient air quality.

²⁶ Bamunimaidan, Boragaon, Gopinath Nagar, Guwahati University, Khanapara and Santipur.

But the fact remained that setting up of monitoring stations only in residential areas ignoring sensitive and industrial areas was not in compliance with the provisions of the guidelines. Further, though industries monitor the ambient air quality, they are done on yearly basis with few exceptions being done on half yearly/quarterly basis instead of daily basis as mandated.

- As per the guidelines, the Sampler should not be located in any confined place and must be (i) more than 20 meters away from trees; (ii) more than two times the height of any obstacle; and (iii) there should be unrestricted airflow in three of four quadrants. However, it was observed that one monitoring station²⁷ was located at a distance of three/four meters (approx.) from the three-storeyed office building of the PCBA and State Public Health Laboratory. There were also trees adjacent to the monitoring station. Another monitoring station²⁸ was surrounded by buildings/trees on three sides. Placement of monitoring stations at inappropriate locations was not only against the provisions of the guidelines but was also fraught with the risk of generating inaccurate results on the air quality.

On this being pointed out, the PCBA accepted the audit observations and stated (August 2015) that in the first case the tree was under the area of state public health laboratory which was trimmed occasionally and the authority concerned shall be requested to trim it, as the rainy season was over. In respect of the second case, it stated that the site was selected long back and they were in search of an alternate location.

4.3 Ambient Air Quality at different Stations of Guwahati

As discussed in Para 4.2, the PCBA was monitoring ambient air quality of Guwahati under NAMP through six stations (*Appendix VI*) in respect of three presently prescribed parameters. The results of the study in respect of the six stations for the years 2010 to 2014 was analysed and the following was observed:

- The annual mean value of SO₂ ranged between 5.60 µg/m³ and 15.20 µg/ m³ which was within the prescribed limit (50.00 µg/m³).
- The annual mean values of NO₂ ranged between 11.80 µg/m³ and 16.30 µg/ m³ which was within the prescribed limit (40.00 µg/m³). However, the minimum and maximum values were 5.60 µg/m³ and 45.80 µg/m³ respectively.
- The annual mean values of RSPM (PM₁₀) ranged between 41.60 µg/m³ and 169.5 µg/ m³. When seen against the prescribed limit of 60.00 µg/m³ RSPM values of some areas were above the standards. The minimum and maximum RSPM values observed during the said periods were 12.00 µg/m³ and 478.00 µg/ m³ respectively.

²⁷ Located at PCBA Office, Bamunimaidam, Guwahati

²⁸ Located at Pragiyotish College, Santipur, Guwahati

The PCBA stated (August 2015) that RSPM exhibit higher values particularly in dry season. Many factors such as vehicular movement, construction activities are primarily contributing to particulate matter (PM) which becomes higher in dry days due to dust with the wind from the hills in which earth had been cut and sandy river banks of Brahmaputra. The PCBA further stated (April 2016) that Board had taken steps to monitor more numbers of air pollutants and to study comprehensive Environment Pollution Index for some industrially cluster locations.

The fact however, remained that the PCBA was monitoring only three pollutants (SO₂, NO₂ and RSPM/PM₁₀) out of 12 pollutants identified by CPCB under National Ambient Air Quality Standards (NAAQS). Besides, the PCBA themselves have admitted the fact and stated that the Board had taken steps to monitor more numbers of air pollutants and to study comprehensive Environment Pollution Index for some industrial cluster locations.

4.4 Industrial Emission

As mentioned in Para 3.8, there were 1,145 industries (red category: 371, orange category: 557 and green category: 217) in the greater Guwahati area.

4.4.1 Industries operating without valid Consent for Operation

Under Section 21 of the Air Act and Section 25 of the Water Act and Rules made thereunder, the PCBA was empowered to issue consent for establishment (CFE) and consent for operation (CFO). Before expiry of CFOs granted initially, the units were required to renew their CFOs. Application for renewal of CFO was to be submitted four months before expiry of the earlier CFO. Further, as per Section 51 of the Air (Prevention and Control of Pollution) Act, every State Board should maintain a register containing particulars of the persons to whom consent has been granted under Section 21 of the said Act, the standard for emission laid down by it in relation to each such consent and such other particulars as may be prescribed.

It was noticed that 273 (23.84 *per cent*) out of 1,145 industries in the Guwahati region were operating even though the validity of their CFOs issued by the PCBA had expired and the industries had not applied for renewal of CFOs. Section 22A of the Air Act and Section 33 of the Water Act provides that where it is apprehended by a Board that emission of any air/water pollutant, in excess of the standards laid down by the State Board is likely to occur by reason of any person operating an industrial plant or otherwise, the Board may make an application to a court, not inferior to that of a Metropolitan Magistrate or a Judicial Magistrate of the first class for restraining such person from emitting such air pollutant. However, the PCBA had not initiated such action against any industry. It was also observed that contrary to the requirement, the register did not contain any information regarding the prescribed standard of emission, validity of consent etc. As such the PCBA did not monitor those industries which indicated the weak internal monitoring mechanism.

4.4.2 Inadequate inspection of Industries

As per notification issued (December 1999) by the Ministry of Environment and Forest, GoI, industries should be inspected at the following frequency depending on their classification.

Table No.: 4.1
Prescribed Frequency of inspection of industries

Sl. No.	Size of Industry	Category of Industry	Frequency of visit and effluent sampling
1.	Small Scale	Red	Once in 12 months
		Orange	Once in 3 years
		Green	Once in 3 years on random check basis
2.	Large & Medium Scale	Red	Once in 3 months
		Orange	Once in 6 months
		Green	Once in 12 months

The position of inspection of industries by PCBA in the Guwahati region is mentioned in the following table:

Table No.: 4.2
Industries Inspected in Guwahati Region

Year	Total Nos. of Industries				Nos. of Industries Inspected (in per cent)			
	Red	Orange	Green	Total	Red	Orange	Green	Total
2010-11	312	394	142	848	94 (30%)	43 (11%)	31 (22%)	168 (20%)
2011-12	349	426	164	939	104 (30%)	54 (13%)	40 (24%)	198 (21%)
2012-13	369	466	179	1014	66 (18%)	49 (11%)	45 (25%)	160 (16%)
2013-14	378	496	193	1067	61 (16%)	75 (15%)	36 (19%)	172 (16%)
2014-15	371	557	217	1145	115 (31%)	149 (27%)	62 (29%)	362 (32%)

Source: PCBA (Note: percentage in brackets shows percentage of inspection w.r.t. total industries.)

It was observed in Audit that:

- PCBA did not have details of small, medium and large industries under each category, in the absence of which Audit could not make separate assessment of the number of inspections due, conducted and shortfall thereto in the industries.
- Even if the minimum periodicity (once in a year) of inspections is considered, there was shortfall varying from 69 per cent to 84 per cent in inspection of Red

category industries and from 68 *per cent* to 84 *per cent* in respect of all types of industries during the years 2010-15.

- PCBA was inspecting the industries only at the time of renewal of Consent for Operation (CFO).
- Due to no inspection of industries, emission level, effluent quality etc. could not be monitored.

In reply, the PCBA stated (April 2016) that due to shortage of manpower and sophisticated instruments, stack monitoring are done on yearly basis for less polluting industries. Reply is not tenable as the inspections were carried out to the extent of only 16 to 31 *per cent* during 2010-15 in respect of highly polluted industries (Red category). Besides, the PCBA is itself responsible for the shortage of manpower as they have a very small proportion of staff dedicated to anti pollution activities whereas the proportion of non-technical manpower is quite high as compared to technical manpower.

4.4.3 Emission of Particulate Matter (PM) in excess of standard

As per Section 22 of the Air (Prevention and Control of Pollution) Act no person operating any industrial plant in any air pollution control area shall discharge or cause or permit to be discharged the emission of any air pollutant in excess of the standards laid down by the State Board. Section 22A and 23 of the said Act lays down the action to be taken by the PCBA in cases of non-compliance which includes restraining any person from emitting such air pollutants in case of wilful default and taking necessary action to mitigate the emission of air pollutants in cases of accidents/unforeseen acts or events.

On scrutiny of the Stack Emission Report of various industries, it was noticed that 25 industries emitted Particulate Matter (PM) in excess of the standard laid down by the PCBA. Details are given in *Appendix VII*. However, the PCBA did not take action as envisaged under sections 22A and 23 of the Air Act against the defaulters such as restraining persons from causing air pollution, recovery of amount expended towards remedial measures from the persons concerned as arrears of land revenue, or of public demand.

4.4.4 Joint physical inspection of industries

A joint team (consisting of officers from office of the PCBA and Audit) inspected the site of 15 industries (who had taken consent from PCBA under Air Act), and the following was observed:

- Against the requirement of monitoring on a daily basis, the industries were monitoring the stack emission and the ambient air quality on yearly basis, in few cases half yearly or quarterly basis.
- In respect of two industries²⁹, monitoring station/dust sampler was adjacent to the trees instead of the requirement of 20 metres distance, thereby restricting free movement of air.
- In one industry,³⁰ Respirable Dust Samplers were functioning during day time (6.00 am to 6.00 pm) only whereas plant was working for 24 hours.
- In four industries³¹, dust collector, etc. in packing section of cement was not working properly. Hence, emission of cement dust was recorded inaccurately.
- IOCL, Guwahati Refinery was meeting stack emission PM norm of 100 mg/Nm³ in the mixed fuel fired furnaces. However, for gas fired furnace, the PM emission value was found to be above the limit of 10 mg/Nm³. It was stated that non-compliance was due to non-availability of space for installation of devices like ESPs in the existing units. During joint physical inspection of sites of 15 industries, irregularities were noticed which are detailed above. The PCBA, though monitoring those industries regularly, could not detect such irregularities. This indicated that there was inadequate monitoring by the PCBA resulting in failure to take action against non-compliance.



*Air Monitoring station at premises of
M/s Purbanchal Cement*

4.4.5 Continuous Stack Emission Monitoring System not installed

To strengthen the monitoring mechanism for effective compliance through self regulatory mechanism, the CPCB directed³² all the Chairmen of PCBs to issue the following directions to all the industries under the categories of highly polluting industries, Common Effluent Treatment Plants, Common hazardous Waste and Biomedical Waste Incinerators:

- a) to install online Continuous Stack Emission Monitoring Systems (CSEMS) not later than 31 March 2015
- b) to install online Effluent Quality Monitoring System (EQMS) at the outlet of effluent treatment plants not later than 31 March 2015

²⁹ IOCL, Guwahati Refinery and M/s Purbanchal Cement.

³⁰ M/s Cement Manufacturing Co. Ltd., Sonapur.

³¹ M/s Cement Manufacturing Co. Ltd., M/s Raksha Cement, M/s River Valley Cement Corporation and M/s Vinayak Cement.

³² Vide letter no. B-29016/04/06/PCI-1/5401 dated 05 February 2014

- c) to connect and upload the online emission and effluent monitoring data at PCBs/PCCs and CPCB server in a time bound manner but not later than 31 March 2015
- d) to ensure regular maintenance and operation of the online system with tamper proof mechanism having facilities for online calibration
- e) to submit bank guarantee of 25 per cent of cost of online monitoring system (emission and effluent whichever applicable) for ensuring timely installation of online monitoring systems within 90 days from the date of receipt of directions issued by PCBs/PCCs to the Industries.

Besides the above, the CPCB also directed that the PCBs shall install the necessary software and hardware in their headquarters for centralised data collection, analysis and corrective action. The action taken report along with time bound action plan for installation of online monitoring systems (emission and/or effluent) shall be submitted to the CPCB within 120 days from the date of receipt of direction.

Audit observed that:

- Out of 35 industries under the categories of highly polluting industries, only six industries³³ installed online CSEMS till March 2015.
- Only one industry³⁴ connected and uploaded the online emission monitoring data to CPCB server till March 2015.
- None of the units had installed the online EQMS till March 2015.
- Bank Guarantee had not been taken for ensuring timely installation of online monitoring system.
- PCBA had not installed necessary software and hardware for centralised data collection, analysis and corrective action.

On being pointed out, the PCBA stated (August 2015) that those units which had not taken initiative were called for a meeting to impress upon them for implementation of the CPCB direction.

4.5 Vehicular emission

Due to increase of population, change in life style and per capita income, rapid increase of number of motor vehicles on road in Greater Guwahati area was observed over the past few years. Vehicles, one of the major contributors to air pollution, also emit greenhouse gases such as carbon dioxide which contributes to global warming and Nitrogen Oxides and Sulphur Oxides which are major contributors to acid rain³⁵. The vehicle pollution emission centres were set up with a view to check those pollutants including harmful emissions.

³³ (i) M/s Topcem Cement (ii) IOCL, Guwhati Refinery (iii) Numaligarh Refinery (iv) Calcom Cement (v) IOCL, Bongaigaon Refinery (vi) Cement Manufacturing Co., Sonapur

³⁴ IOCL, Bongaigaon Refinery, Bongaigaon

³⁵ Caused by the presence of oxides of nitrogen and sulphur in the atmosphere due to the burning of fossil fuels.

4.5.1 Position of Motor Vehicles on road

An analysis of total motor vehicles in the Greater Guwahati area as of March 2015 as well as reports³⁶ available on the website indicated that

- Vehicle population in the Greater Guwahati area had reached 7.70 lakh (out of which 3.81 lakh vehicles were more than 10 years old) as of March 2015 compared to 3.02 lakh in March 2001, which shows a 155 *per cent* increase.
- The density of motor vehicles in Greater Guwahati area was 806 per sq. km and 61,410 vehicles per one lakh population as of March 2015 as against 316 vehicles per Sq. Km. and 28,462 vehicles per one lakh population as of March 2001 respectively.
- More than four lakh vehicles ply on Guwahati's roads, 70 *per cent* of which do not possess emission clearance certificates which has been highlighted in 'The Desert Research Institute and NASA Study Report, 2012.

4.5.2 Joint Physical Inspection of Vehicle Pollution Emission Testing Centres

A joint team (consisting of officials of the Transport Department and Audit) visited the site of nine Vehicle Pollution Emission Testing Centres in Guwahati. It was observed that despite deficiencies as noted below, the centres were issuing pollution under control certificates.



Pollution testing centre at Betkuchi

- In four centres³⁷, there was no testing machine/equipment though they were issuing Pollution Under Control (PUC) Certificates.
- Two centres³⁸ were issuing PUC Certificates even though the testing machine/equipment was not functional.
- One centre³⁹ was not traceable at the address mentioned in their application for licence.

³⁶ Report of Desert Research Institute and NASA available in Centre for Science and Environment (CSE) website.

³⁷ (i) Puspa Auto Emission, Betkuchi (Owner-Sri Puspa Ram Kalita) (ii) Anupama Pollution Testing Centre, Lalonggaon, Lokhra (Owner-Sri Debajyoti Bardoloi) (iii) Mahabir Motors, Near Udesha Cinema Hall, Dispur (Owner-Sri Raj Prasad Saikia)

³⁸ (i) Labanya Enterprise, Betkuchi, Near DTO Office (Owner- Sri Arup Pandit) (ii) Jimlee Pollution Testing Centre, Hatigaon (Owner-Sri Brojen Kalita)

³⁹ Hatigaon, Bhetapara, Main Road (Owner-Sri Nazul Haque)

- In five centres⁴⁰, there was no space for parking, whereas one centre⁴¹ was running at the parking place of residential complex.
- In six centres⁴², no web-camera was installed.

In reply, the PCBA stated (April 2016) that the matter is under the purview of the MVI Act. Reply is not tenable since GoA had authorised (vide Notification dated 17 August 2009) the PCBA to check the equipment of the Private Emission Testing Stations as and when necessary.

4.5.3 Inadequate monitoring of Auto emission testing Stations

Mention was made in the Report of the Comptroller and Auditor General of India on Revenue Sector for the year ended March 2015, Government of Assam (Report No.3 for the year 2014-15) regarding the functioning of Auto Emission Testing Stations (AETS) in Assam during 2010-11 to 2014-15 vis-a-vis the vehicle population. It was pointed out that under Greater Guwahati area, there were 43 AETS to cater to 3.14 lakh vehicles, out of which active AETS were only 11, thereby bringing the proportion of vehicles per AETS to 28,545. The AETS functions under the direct control and monitoring of the concerned DTOs. It was observed in Audit that:

- The DTOs conduct physical verification of the AETS only at the time of commissioning and there was no system of periodic physical verification of the equipment of the AETS. This denied the Department of having a check on the efficacy of the testing equipment and consequently there was no assurance that the PUC certificates issued by the AETS conformed to the prescribed standards.



Mobile Testing Station

⁴⁰ (i) Puspa Auto Emission, Betkuchi (Owner-Sri Puspa Ram Kalita) (ii) Labanya Enterprise, Betkuchi, Near DTO Office (Owner- Sri Arup Pandit) (iii) Anupama Pollution Testing Centre, Lalonggaon, Lokhra (Owner-Sri Debajyoti Bardoloi) (iv) Bajrangbali Auto Emission Testing Centre, Near Beltola Petrol Pump, Basistha (Owner- Sri PallabJyoti Chakraborty) (v) Mahabir Motors, Near Udesha Cinema Hall, Dispur (Owner-Sri Raj Prasad Saikia)

⁴¹ Jimlee Pollution Testing Centre, Hatigaon (Owner-Sri Brojen Kalita)

⁴² (i) Puspa Auto Emission, Betkuchi (Owner-Sri Puspa Ram Kalita) (ii) Labanya Enterprise, Betkuchi, Near DTO Office (Owner- Sri Arup Pandit) (iii) Anupama Pollution Testing Centre, Lalonggaon, Lokhra (Owner-Sri Debajyoti Bardoloi) (iv) Bajrangbali Auto Emission Testing Centre, Near Beltola Petrol Pump, Basistha (Owner- Sri PallabJyoti Chakraborty) (v) Mahabir Motors, Near Udesha Cinema Hall, Dispur (Owner-Sri Raj Prasad Saikia) (vi) Auto Emission Testing Centre, Rukminigaon (Owner-Sri BhupenBhuyan)

- There is no system of periodic verification of the renewal of licenses and proper collection of fees by the AETS.
- The DTOs or any other authority did not conduct any supervisory checks of samples of vehicles already checked by AETS for assessing the quality of checks.

A system of periodic physical verification would have enabled the DTOs to detect the AETS issuing PUC certificates without payment of fees and renewal of their licences. Further, the Govt. of Assam (Vide Notification dated 17 August 2009) authorised the officers of the PCBA to check the equipment of Private Emission Testing Stations as and when necessary. Since the AETS were private parties, inspection by PCBA at regular intervals could have enhanced the quality of checks by AETS. However, no inspections were ever done by PCBA.

4.6 High Benzene Level near the Petrol/Diesel Retail Station

Benzene is a sweet-smelling, light yellow liquid at room temperature, volatile organic compound containing six carbon and hydrogen atoms, but evaporates very quickly into the air. It hangs closer to the ground than air giving people no choice but to breathe in benzene vapour wherever the levels are high. As per the World Health Organisation, breathing in high doses of benzene can affect the central nervous system which can lead to drowsiness, dizziness, headaches and convulsions. It can stop bone marrow from producing enough red blood cells, leading to anaemia. High exposure to benzene can also upset heart beat rhythms besides damaging the immune system by causing the loss of white blood cells⁴³.

Benzene mainly emanates from evaporation in petrol stations, vehicle exhausts and industrial emissions. Escape of Benzene is controlled by a device called a Vapour Recovery System which sucks back the fumes that escapes from a pipe when fuel is being pumped into a vehicle or an outlet. The permissible level of Benzene is 5 $\mu\text{g}/\text{m}^3$ as allowed by the National Ambient Air Quality Standards (NAAQS) set by the CPCB.

On test check of records of PCBA, it was noticed that:

- Though the activities involving storage, transfer and processing of petroleum products fall under 'Red' category of industries, no retail petrol/diesel stations applied for Consent to Establishment or Consent for Operation to the PCBA.
- PCBA never carried out any testing of benzene level near the retail petrol/diesel stations.
- None of the retail petrol/diesel stations had installed any Vapour Recovery System.

⁴³ Study conducted by World Health Organisation and CPCB.

A joint team (consisting of officers from office of the PCBA and Audit) along with the analyst of the Private Laboratory⁴⁴, authorised by the PCBA, visited the site of 10 retail petrol/diesel stations⁴⁵ and collected the air samples for testing of Benzene level. The testing apparatus used for testing benzene level had maximum scale of 25 µg/m³. However, the levels of benzene prevalent in the samples were much higher than the maximum of 25 ug/m³ in the scale against the permissible limit of 5 µg/m prescribed by NAAQS. Hence, the actual level of benzene in the air could not be ascertained in audit.

In reply, the PCBA stated (April 2016) that first two points⁴⁶ had been noted.

4.7 Recommendations

- *The PCBA should establish adequate air quality monitoring stations especially in eco-sensitive and commercial areas and monitor all parameters as prescribed.*
- *Functioning of vehicular pollution emission testing centres should be reviewed and strengthened in co-ordination with the Transport Department. The testing centres should be regularly monitored and strict action initiated against agencies issuing inaccurate PUC Certificates.*

⁴⁴ Green Tech Environmental Engineer & Consultants, Bhetapara, Guwahati

⁴⁵ M/s ChandmalSawargi& Co., Chandmari, M/s Goswami Service Station, Silpukhuri, ChandmalSawargi& Co., Paltan Bazar, M/s Prabhat Oil Station, Santipur, NRL Energy Station (Mohini), Adabari, M/s Saraight Service Centre, Adabari, M/s Das Service Station, Kalapahar, M/s Bungrung Service station, Kahilipara, M/s Kiran Service Station, Wireless, Beltola and NRL Petrol Pump, Joya Nagar.

⁴⁶ Bullet numbers 1 & 2 pre-page.