



Pakistan Environmental Protection Agency
Government of Pakistan



***Vehicular Emissions Monitoring
and Control Campaign in
Islamabad Pakistan
January, 2024***

A Report on

**Vehicular Emissions
Monitoring
And Control
Campaign in Islamabad
Pakistan
January, 2024**

**Prepared By:
CLEAN Laboratory**

**Reviewed By:
Dr Zaigham Abbas
Director (Lab/NEQS)**

**Approved By:
Ms Farzana Altaf Shah
Director General Pak-EPA**

Key Points:

- Vehicular emissions
- Air pollution
- Environmental Monitoring Team
- Pakistan Environmental Protection Agency
- Islamabad Traffic Police
- smog formation
- National Environmental Quality Standard (NEQS)
- Collaborative effort
- Sustainable urban living
- Monitoring and enforcement
- Environmental protection.

Vehicular Emissions Monitoring and Control Campaign in Islamabad, Pakistan

Directorate of Lab/NEQS, Pakistan Environmental Protection Agency, Ministry of Climate Change and Environmental Coordination, Islamabad, Pakistan

Summary:

The successful collaboration between the Environmental Monitoring Team of the Pakistan Environmental Protection Agency (Pak-EPA) and the Islamabad Traffic Police during the week-long Vehicular Emission Control and Monitoring Campaign from January 9 to January 17, 2024, is documented here. The primary objective of the initiative was to address the escalating concern of air pollution in Islamabad attributed to vehicular emissions, particularly during the dry winter spell and its role in contributing to smog formation. Mandated by Article 11 of the Pakistan Environmental Protection Act, 1997, the campaign was led by Ms. Farzana Altaf Shah, Director General, Pak-EPA, and Dr. Zaigham Abbas, Director (Lab/NEQS), Pak-EPA, Ministry of Climate Change and Environmental Coordination. Encompassing seven strategic locations, including major gateways, entry and exit points, and central areas, the campaign focused on comprehensive monitoring and control of vehicular emissions. Key locations included G-14 Srinagar Highway, GT Road near I-14, Srinagar Highway G-9 Exit Point, Islamabad Express Highway PWD Exit, 9th Avenue I-9 Entry Point, Shahpur Bypass Bharakahu, and D-Chowk and Aabpara Chowk, centrally located in the heart of the city. The inspection covered 383 vehicles across categories such as buses, vans, cars, minitrucks, trucks, and tractors, identifying Heavy Transport Vehicles (HTV) using Diesel fuel as primary contributors to smoke emissions. Rigorous testing focused on soot carbon smoke emissions, resulting in fines for 27% of vehicles exceeding NEQS emission levels by over 40% according to the Ringelmann scale. This collaborative effort underscores Pak-EPA and Islamabad Traffic Police's dedication to sustainable urban living and sets a precedent for future environmental protection initiatives. The campaign's success emphasizes the continuous need for monitoring and enforcement to address air quality concerns in the capital city, fostering a healthier environment for residents.

1. Introduction:

Islamabad is situated at the northern edge of the Potohar Plateau, a region in the northeastern part of the country. With a population of 1.26 million, it is undergoing rapid urbanization and economic growth. However, this progress has come at the cost of escalating air pollution, primarily attributed to industrialization. Key contributors to this issue include motor vehicles, industrial activities, and coal-fired power plants. According to Barber's research in 2008, the average Pakistani vehicle emits significantly higher levels of pollutants compared to vehicles in the United States. Specifically, Pakistani vehicles emit about 25 times more carbon dioxide (CO₂) and carbon monoxide (CO), 20 times more nonmethane hydrocarbons (NMHCs), and 3.5 times more sulfur dioxide (SO₂). This alarming disparity underscores the urgent need for effective measures to address and mitigate air pollution in the country, considering its detrimental impact on public health and the environment. Air pollution stands as a significant environmental concern, denoting the presence of harmful substances in the air that can detrimentally impact human health, wildlife, and the overall ecosystem. A primary contributor to air pollution is the emissions generated by vehicles, releasing pollutants such as carbon monoxide (CO), nitrogen oxides (NO_x), sulfur oxides (SO_x), particulate matters, and soot carbon. Of particular concern is the emission of soot carbon from D vehicles, which significantly adds to air pollution and poses substantial health risks. The intricate relationship between vehicular emissions and air quality emphasizes the pressing need to implement comprehensive strategies to address this environmental issue and protect public health.



The National Environmental Quality Standards (NEQS) for ambient air in Pakistan specify permissible limits for various pollutants. These standards include a 1-hour average limit of $130 \mu\text{g m}^{-3}$ for ozone (O_3), with a World Health Organization guideline value set at $100 \mu\text{g m}^{-3}$ for an 8-hour daily average. Sulfur dioxide (SO_2) has an annual average limit of $80 \mu\text{g m}^{-3}$ and a 24-hour average limit of $120 \mu\text{g m}^{-3}$. Nitric oxide (NO) and nitrogen dioxide (NO_2) both have an annual and 24-hour average limit of $40 \mu\text{g m}^{-3}$ each. Carbon monoxide (CO) is subjected to an 8-hour standard limit of 5mg m^{-3} and a 1-hour limit of 10mg m^{-3} . Additionally, particulate matter ($\text{PM}_{2.5}$) has a 24-hour limit of $35 \mu\text{g m}^{-3}$ and an annual average of $15 \mu\text{g m}^{-3}$. These standards aim to regulate and maintain air quality within acceptable levels to safeguard public health and the environment.

The main objective of this study is to characterize the air pollutants in ambient air of Islamabad, Pakistan; examine their relationship to meteorology, and origin of air masses, i.e., back-trajectory analysis; perform a ratio analysis of the measured pollutants ([CO] to [NO], and [SO_2] to [NO]) in Islamabad to gain insight in emission sources; and compare these results with available emission inventories for these pollutants. This study would be significant for regulatory agencies to conduct monitoring and plan mitigation measures in order to improve the air quality of the city. Moreover, this data set would be of immense value to the urban, regional, and global air quality modeling community.



1.1. Description of Sites:

Islamabad, the Federal Capital of Pakistan, situated at $33^{\circ}26'N$ $73^{\circ}02'E$, hosts a population of 1.26 million. Covering an expanse of 906 km^2 , it extends over 2717 km^2 into the Marghallah Hills in the north and northeast, with elevations ranging from 507m in the plains to 1604m in the hill areas. Throughout the winter season, Islamabad encounters a semi-arid climate characterized by cold temperatures. The air quality is influenced by various factors. Polluted air masses are predominantly conveyed into Islamabad from the southeast, originating from the Industrial Estate and Rawalpindi. Furthermore, air pollution is significantly contributed to by vehicular emissions and industrial processes. The sampling locations were selected after a complete research on all the entry and exit point of the city. These following locations are:



S.No.	Location	Description
1.	G-14 Srinagar Highway	Major gateway
2.	GT Road near I-14	Entry point
3.	Srinagar Highway G-9 Exit Point	Exit point
4.	Islamabad Express Highway PWD Exit	Exit point
5.	9th Avenue I-9 Entry Point	Entry point
6.	Shahpur Bypass Bharakahu	Entry point
7.	D-Chowk and Aabpara Chowk	Central location in the heart of the city



1.2. Objectives of Vehicular Emission Testing System (VETS):

The Vehicular Emission Testing System (VETS) in Islamabad Capital Territory (ICT) aims to achieve several key objectives:

Control of Pollution:

The primary objective of VETS is to control pollution by inspecting smoke-emitting vehicles plying on the roads of ICT.

Excessive Emission Reduction:

VETS seek to reduce excessive emissions by providing counseling and guidance to the general public, encouraging them to maintain their vehicles in proper condition.

Public Awareness:

Another objective is to create awareness among the public about smoke emissions and their adverse effects on human health.

Environmental Protection:

VETS aims to sensitize citizens to the importance of protecting the natural environment to support VETS, a mobile monitoring team, comprising four monitoring inspectors, was constituted by Pak-EPA. This team played a vital role in the success of VETS by conducting vehicle checks and participating in awareness campaigns. The monitoring team's efforts were instrumental in achieving the objectives of VETS and promoting a healthier environment in the capital city. Monitoring equipments.

A VET is equipped mainly with:

- I. Smoke Soot Pump.
- II. Analogue Counter.
- III. Digital Noise Meter

Health impacts of Carbon Soot:

The health impacts of carbon soot, a significant component of vehicular emissions, are substantial and pose serious risks to human health. Carbon soot, also known as black carbon, is a type of particulate matter that is a major contributor to air pollution, particularly in urban areas. The following are the health impacts associated with carbon soot, based on the provided information and relevant research:

Respiratory and Cardiovascular Effects:

Exposure to carbon soot is linked to a range of respiratory and cardiovascular health effects. It can exacerbate asthma, cause respiratory symptoms, and lead to decreased lung function. Additionally, it is associated with an increased risk of heart attacks and other cardiovascular problems. There is evidence to suggest that exposure to carbon soot may be associated with an increased risk of lung cancer. Premature Death Long-term exposure to carbon soot is linked to an increased risk of premature death, particularly from heart and lung diseases.

Environmental Impact:

In addition to its effects on human health, carbon soot also contributes to climate change and has detrimental effects on the environment.

The health impacts of carbon soot are a pressing concern, and efforts to mitigate its emissions are essential for protecting public health and the environment.

1.3. Methodology:

The methodology adopted for the Vehicular Emission Testing System (VETS) includes the following steps:

- A vehicle emission data sheet is developed to record the required information about vehicles at the spot.



- Diesel and Petrol vehicles are tested for smoke opacity using VETS equipment. The measured values are then compared with National Environmental Quality Standards (NEQS), and vehicles are classified as pass or fail depending on whether they comply with NEQS or not.
- After a successful test, vehicles are permitted to operate, and their information is documented. Owners/drivers are then advised regarding any necessary adjustments or repair work required to ensure that the emissions from the vehicle comply with NEQS (National Environmental Quality Standards).
- One test typically takes 1-3 minutes for Petrol/CNG and Diesel vehicles. This duration includes the placement of filter paper and observing spot formation on the filter paper to match with the scale on the basis of the Ringelmann scale.
- Vehicles that violate NEQS are challenged with different charges by Islamabad Traffic Police constables, using motor vehicle rules as legal basis support.

1.3.1 Methodology for Traffic Counting:

The traffic counting methodology involved the manual use of analogue counters positioned strategically at key locations across Islamabad's road network. Trained personnel were stationed at designated observation points equipped with analogue counters to manually tally the number of vehicles passing through during specified time intervals. Each observer was responsible for accurately recording vehicle counts, distinguishing between different types of vehicles, such as cars, buses, and motorcycles, and noting relevant details such as date, time, and location. Prior to data collection, comprehensive training sessions were conducted to familiarize observers with the counting process, ensure consistency in data collection techniques, and minimize human error.



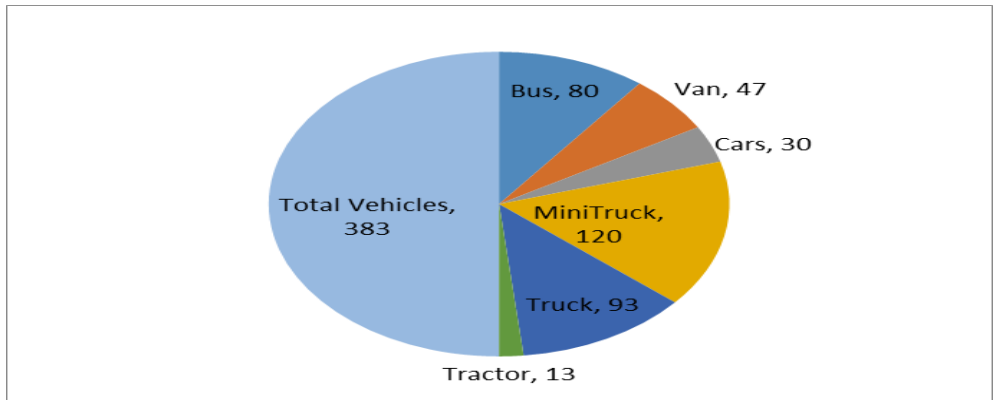
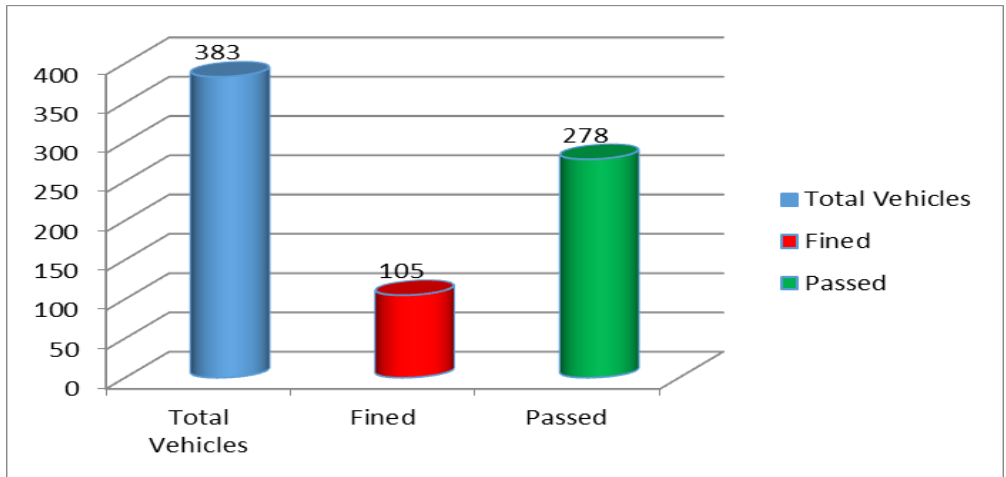
1.3.2 Methodology for Noise Level Measurement:

The noise level measurement process involved the use of noise meters strategically positioned at selected sites across Islamabad to monitor ambient noise levels. Each noise meter was calibrated according to standard procedures to ensure accuracy and consistency of measurements. The meters were programmed to record noise levels at regular intervals during specified time periods, corresponding to peak traffic hours and times of high activity. Trained technicians conducted site surveys to identify suitable locations for placing the noise meters, considering factors such as proximity to traffic routes, urban infrastructure, and residential areas. Data collected from the noise meters provided valuable insights into the ambient noise environment at different locations, enabling authorities to assess noise pollution levels, identify sources of excessive noise, and implement targeted mitigation measures to safeguard public health and enhance the quality of life in Islamabad.



2. Results:

The campaign against smoke-emitting vehicles inspected 383 vehicles across different categories, identifying Heavy Transport Vehicles (HTVs) using diesel fuel as the main contributors to smoke emissions, with fines imposed on 27% of them. Rigorous testing for soot carbon smoke emissions led to 105 fines imposed on vehicles exceeding NEQS emission levels by over 40% against the Ringelmann scale. A total of 383 vehicles were inspected during the campaign, spanning different categories: 80 buses, 47 vans, 30 cars, 120 minitrucks, 93 trucks, and 13 tractors were included in the assessment. This comprehensive inspection covered a range of vehicle types to assess compliance with emission standards.



2.1 Traffic Count at Sites:

The traffic count data reveals significant vehicular activity at various key locations in Islamabad during the specified dates and times. Notably, major gateways such as G-14 Srinagar Highway and GT Road near I-14 experience high traffic volumes, with counts exceeding 9,000 vehicles during the observation periods. Entry and exit points along major highways, including Srinagar Highway G-9 Exit Point and Islamabad Express Highway PWD Exit, also witness substantial traffic flow, with counts surpassing 11,000 and 17,000 vehicles respectively. Even central points of the city, like D-Chowk and Aabpara Chowk, register considerable traffic, albeit to a lesser extent compared to highway junctions. This data underscores the importance of efficient traffic management strategies to address congestion and ensure smooth mobility across Islamabad's road network.

2.2 Noise Level at Sites:

The noise level measurements indicate varying degrees of environmental noise pollution at different locations in Islamabad during the specified time frames. Notably, areas such as GT Road near I-14 and 9th Avenue I-9 Entry Point record noise levels exceeding the standard threshold of 85dBA, with readings reaching 126dBA and 110dBA respectively. Other sites, including G-14 Srinagar Highway and Shahpur Bypass Bharakahu, also exhibit elevated noise levels, albeit relatively lower compared to GT Road and 9th Avenue. However, despite being central points of the city, D-Chowk and Aabpara Chowk register comparatively lower noise levels within acceptable limits. These findings underscore the need for noise mitigation measures and urban planning strategies to minimize the adverse effects of noise pollution on public health and well-being in Islamabad.



Vehicular Emission Data

Sr.No	Type	Reg No. Of Vehicles	Make	Model	Driver Name	Smoke Opacity	Fuel Type
1	Van	LSC-4925	Toyota	1969	M. Asim	90%+	Petrol
2	Car	LOH-2262	Toyota	1982	Abdullah Majeed	90%+	Petrol
3	Car	AWB-12	Toyota	2021	Bridg Sarfaraz	60%+	Petrol
4	Car	AAE-04	Toyota	2016	Zaheer	80%	Petrol
5	Suzuki	RIS-04	Suzuki	2017	Nasseb-ullah	20%	Petrol
6	Jeep	B-5346	Toyota	1986	M.Amin	80%	Diesel
7	Coaster	CAF-5648	Toyota	2015	Hazrat Mohib	40%	Diesel
8	Van	UK-235	Suzuki	2022	Sajjid Ali	40%	Petrol
9	Truck	TKK-332	Hino	2000	Fazal Kareem	90%+	Diesel
10	Van	CP-7449	Toyota	2014	Ahmad Khan	70%+	Diesel
11	Truck	C-2573	Mazda	2002	Zamir Ahmed	90%+	Petrol
12	Van	LRE-5826	KIA	1995	Muhammad Asad	90%+	Petrol
13	Truck	Z-5725	Hino	1994	Muhammad Arshad	80%+	Diesel
14	Loader	RIG 6567	Rocket	1979	Nazakat Ali	90%+	Diesel
15	Loader	RIS-5462	Foton	2017	Ateeq Ur Rehman	70%+	Diesel
16	Coaster	Cah-1657	Toyota	2014	Ihsan Ullah Khan	60%+	Diesel
17	Loader	RIS-4361	Foton	2017	Sohail Khan	90%+	Diesel
18	Car	BCB-1	Honda	2023	Qazi Inayat Ullah	20%+	Petrol
19	Bus	E-1204	Daewoo	2017	Muhammad Haris	90%+	Diesel
20	Shahzore	C-4102	Toyota	1994	M Amin	90%+	Diesel
21	Van	NK-641	Nissan	2005	Nasseer	80%+	Petrol
22	Bus	BSA-691	Hino	2005	Shafqat Mehmood	80%+	Diesel
23	Car	BCW-5521	Hyundai	2023	Sheyeer	10%+	Petrol
24	Car	IDE-643	Land Cruiser	1990	Amir Shezad	90%+	Petrol
25	Wagon	JMC-4249	Ford	1986	Hafeez Ahmad	90%	Petrol
26	Suzuki	TZ-725	Suzuki	2009	M.Waqar	35%	Petrol
27	Wagon	LFS-1758	Toyota	2017	Naiz Ali	60%	Diesel
28	Wagon	E-1653	Toyota	1993	Imran Khan	80%	Petrol
29	Coaster	LFS-7819	Toyota	2015	Anwar Ali	90%+	Diesel
30	Car	Dy-130	Toyota	2015	Shaukat Ali	30%+	Petrol

31	Van	AHY-888	Toyota	2018	Shamraz Mughal	40%+	Petrol
32	Wagon	MIC-8901	Toyota	2007	Gulaam Qasim	20%+	Petrol
33	Wagon	PLF-4777	Toyota	1992	Abdul Satar	20%+	Diesel
34	Coaster	LAS-4445	Toyota	2013	Isar Khan	50%	Diesel
35	Shahzore	RIS-3372	Hyundai	2007	M. Asif	80%	Diesel
36	Shahzore	TAB-911	Hyundai	2022	M.Naeem	80%	Diesel
37	Shahzore	IDS-3179	Hyundai	2005	M.Amin	50%	Diesel
38	Wagon	ITS-364	Hyundai	2010	Ilyas Khan	20%	Petrol
39	Wagon	AS-382	Mitsubishi	2004	M. Sabir	20%	Petrol
40	Wagon	IES-191	TOYOTA	2013	Shahzad Iqbal	50%	Petrol
41	Shahzore	IDS-2200	Hyundai	2004	MD Foods Co.	60%	Diesel
42	Shahzore	C-1517	Hyundai	2003	Faisal Abbasi	90%	Diesel
43	Shahzore	Idt-3423	Hyundai	2001	Khayal Mehmood	90%	Diesel
44	Loader	C-2225	Changan	2010	Akbar Ali	90%	Diesel
45	Loader	Cak-3856	Isuzu	2022	Muhammad Shahazad	90%	Diesel
46	Bus	C-8413	Youtong	2022	Abdul Wali	90%	Diesel
47	Loader	Les-2851	Isuzu	2019	Afzal Khan	80%	Diesel
48	Bus	A-9486	Toyota	2015	Sardar Ali	60%	Diesel
49	Bus	GAG-077	Hino	2018	Abdul Shakoor	80%	Diesel
50	Bus	LFS-4795	Daewoo	2016	Umer Daraz	90%	Diesel
51	Bus	BSC-048	Higer	2022	Qaiser Khan	80%	Diesel
52	Bus	GB-832	Nissan	2003	Ansar Mehmood	90%	Diesel
53	Bus	GB-831	Nissan	2003	Saeed Mehmod	90%	Diesel
54	Truck	Z-6693	Hino	1999	Abul Hameed	60%	Diesel
55	Truck	FDY-6797	Mazda	1997	Inaam Ul Haq	80%	Diesel
56	Truck	KU-7645	Mercedes	1960	Zameer Ul Haq	90%	Diesel
57	Wagon	LES-5260	Toyota	2014	Mohid Farid	60%	Petrol
58	Truck	Z-9356	Hino	1999	Mazhar Khan	60%	Diesel
59	Wagon	LES-43607	Toyota	2010	Naveed Khan	60%	Petrol
60	Shahzore	TAB-341	Hyundai	2022	Kamran Hussain	80%	Diesel
61	Bus	CAH-4488	Youtong	2022	Noor Zaman	20%	Diesel
62	Shahzore	LES-5165	Hyundai	2008	Daniyal Khan	90%	Diesel
63	Bus	GAK-137	Hino	2021	Ashfaan	60%	Diesel

64	Suzuki	LC-6678	Changan	2023	Awan Ullah	20%	Diesel
65	Wagon	RLE-3789	Toyota	1991	Safir Ahmed	20%	Petrol
66	Truck	RIG-81004	RCB	2008	Munawar	90%	Diesel
67	Wagon	G-0655	Ford	1999	Saddam Hussain	40%	Petrol
68	Wagon	ET-3194	Toyota	1992	Tanveer	10%	Petrol
69	Datsun	KW-5174	Nissan	1988	Asad Shabbir	60%	Diesel
70	Coaster	LES-2763	Hino	1996	Abdul Rehman	60%	Diesel
71	Truck	E-1553	Hino	2003	Hamza Khan	40%	Diesel
72	Truck	LES-7149	Mazda	2012	Gulfam	30%	Diesel
73	Truck	K-7291	Ford	1983	Zahid Khan	30%	Diesel
74	Truck	Z-3709	Hino	2001	Zahir Shah	90%	Diesel
75	Shahzore	KP-8570	Hyundai	2008	Zafran	90%	Diesel
76	Coaster	RIS-2311	Toyota	2015	Zeeshan	50%	Diesel
77	TRUCK	IDS-2066	FORD	2004	Khitab Gul	70%	Diesel
78	Bus	CAM-6705	TOYOTA	2023	Tahir	50%	Diesel
79	TRUCK	JZ-5537	Mazda	1983	M. Subhaan	90%	Diesel
80	TRUCK	TW-930	Foton	2017	Miskeen	60%	Diesel
81	Shahzore	LES-7075	JAC	2018	Mursaleen	70%	Diesel
82	Shahzore	RIS-2281	Hyundai	2008	Zeeshan	70%	Diesel
83	TRUCK	LET-3465	DONOFORD	2017	Zakir Hussain	60%	Diesel
84	TRUCK	RIS-3296	Isuzu	2019	M. Saleem	70%	Diesel
85	Datsun	C-6290	TOYOTA	1993	M. Riasat	90%	Diesel
86	Bus	LEI-2801	TOYOTA	2016	M. Farooq	90%	Diesel
87	Bus	RIR-2366	FORD	1978	Sohail Raza	90%	Diesel
88	TRUCK	GAG-9764	Foton	2021	Sajid Mehmood	60%	Diesel
89	TRUCK	JU-6632	HINO	2018	Talha	70%	Diesel
90	Van	SPV-5732	Suzuki	2003	Wajid Mehmood	60%	Petrol
91	TRUCK	TKH-197	HINO	2018	Jamal Khan	70%	Diesel
92	TRUCK	LWC-9043	Mazda	2007	M. Nazir	60%	Diesel
93	TRUCK	C-2286	HINO	2003	Hamid Nawaz	90%	Diesel
94	Datsun	RIS-2525	TOYOTA	2016	M. Sharaz	60%	Diesel
95	Bus	LZJ-6300	YURU	2019	M. Anwar	80%	Diesel
96	Bus	BTA-221	Youtong	2023	M. Shahid	60%	Diesel
97	WAGON	BMB-526	TOYOTA	2016	Ali Waleed	70%	Petrol

98	Bus	LES-5175	Daewoo	2012	Ummer Ahmed	70%	Diesel
99	Bus	CAJ-9911	Youtong	2003	Asif Shah	60%	Diesel
100	Bus	RIS-771	Youtong	2018	Saleem	70%	Diesel
101	Bus	LES-7911	Daewoo	2016	Manzoor	40%	Diesel
102	TRUCK	AST-473	HINO	2020	Izzat Mehmood	40%	Diesel
103	Bus	CAF-6464	Daewoo	2021	Imran	30%	Diesel
104	TRUCK	TKS-885	HINO	2015	Jawaid	50%	Diesel
105	Suzuki	CAJ-5396	Suzuki	2022	M.Ismail	30%	Petrol
106	Shahzore	J-7297	Hyundai	2003	Shahzaib	90%	Diesel
107	Minitruck	BLNB-816	Forland	2020	Zubair	50%	Diesel
108	Car	IDN-443	Toyota	2010	Sardaraz	40%	Petrol
109	Coaster	Jg-6190	Toyota	2003	Safeer	60%	Diesel
110	Minitruck	RIS-5272	Isuzu	2010	Tahir Ahmad	50%	Diesel
111	Van	FY-801	Changan	2022	Yasir Nawaz	70%	Petrol
112	Car	MJ-005	KIA	1996	Kumail Khan	50%	Petrol
113	Suzuki	IDD-9211	Carry Suzuki	2020	M.Yaqoob	30%	Petrol
114	Bus	IDD-9643	Mazda	1998	M.Ilyas	70%	Diesel
115	Minitruck	RIS-241	Foton	2018	M.Majid	70%	Diesel
116	Car	MK-826	Toyota	1988	Khushal Khan	60%	Petrol
117	Car	N-9248	Suzuki	2004	Huzaifa	30%	Petrol
118	Bus	GB-230	Hino	2005	Mumraiz Khan	30%	Diesel
119	Bus	GAK-236	Isuzu	2017	Imdad Hussain	30%	Diesel
120	Truck	JZ-5905	Forland	2019	Mubashir Ali	50%	Petrol
121	Shahzore	CAC-4672	Hyundai	2021	Arshad Sultan	70%	Diesel
122	Shahzore	LE-2218	Hyundai	2009	Lal Hussain	50%	Diesel
123	Truck	RIS-3889	Isuzu	2018	Ansar Ashique	90%	Diesel
124	Shahzore	IDS-2462	Hyundai	2005	Liquat Khan	80%	Diesel
125	Shahzore	RID-8328	Hyundai	2005	Ejaz Ahmad	90%	Diesel
126	Datsun	RIN-4871	Toyota	1989	M. Ejaz	80%	Diesel
127	Suzuki	RIS-1773	Suzuki	2013	M. Asif	70%	Petrol
128	Truck	CAF-1625	Isuzu	2023	M. Shafiq	20%	Diesel
129	Van	LWC-663	Hyundai	2022	Altaf Hussain	30%	Petrol
130	Shahzore	GAS-1008	Hyundai	2007	Sjawal Hussain	70%	Diesel
131	Bus	GZ-518	Hino	1997	Sagheer Abbasi	70%	Diesel

132	Bus	Gx-984	Hino	2012	Nasir Javed	40%	Diesel
133	Van	KW-3077	Mercedes	1969	Inam Ul Haq	90%	Petrol
134	Bus	GX-986	Hino	2012	Mukhtiyar	90%	Diesel
135	Van	THC-227	E- Vehicle	2022	Umer Daraz	0%	Electric
136	Shahzore	RIS-5193	Hyundai	2019	Shoaib	40%	Diesel
137	Bus	BSB-361	Higer	2022	Saeed Afridi	30%	Diesel
138	Coaster	CAC-1759	Toyota	2015	Ammar Rafi	30%	Diesel
139	Suzuki	CA-492	Forland	2023	Noman Khan	40%	Petrol
140	Car	LRF-2021	Toyota	2006	Muhammad Khan	50%	Petrol
141	Truck	LES-4681	Mazda	2017	Liaquat Ali	30%	Diesel
142	Suzuki	CAL-6416	Suzuki	2022	Muhammad Afzal	20%	Petrol
143	Loader	JV-5394	Mitsubishi	2018	Saif Ur Rehman	70%	Diesel
144	BUS	GW-961	Hino	2017	Aftab Ahmad	60%	Diesel
145	Suzuki	TJ-259	Suzuki	2010	Khan Afsar	40%	Petrol
146	Bus	GG-856	Nissan	2005	Tariq Azeem	50%	Diesel
147	Bus	QAF-2230	Ftr	1990	Arshad	50%	Diesel
148	Shahzore	CAB-3184	Hyundai	2020	Waris Khan	50%	Diesel
149	Shahzore	JAB-524	Jac	2022	Abdul Rehman	50%	Diesel
150	Bus	GB-014	Nissan	2003	Ghulam Mustafa	40%	Diesel
151	Coaster	JF-3250	Toyota	2012	Waqas Khan	50%	Diesel
152	Bus	CAF-1999	Higer	2021	Nasir Mehmood	40%	Diesel
153	Shahzore	CAA-2201	Hyundai	2020	Basit Ali	90%	Diesel
154	Truck	Z-8316	Mercedes	1996	Qasim Mehmood	50%	Diesel
155	Bus	LES-9696	Yutong	2020	Jaffar Iqbal	40%	Diesel
156	Shahzore	TZ-2431	Suzuki	2017	Nazir Hussain	30%	Diesel
157	Truck	GZRA-2175	Hino	1999	Junaid Ahmad	70%	Diesel
158	Shahzore	Ris-1331	Hyundai	2007	Pervaiz Ahmad	80%	Diesel
159	Truck	JT-6077	Hino	1977	Maqsood	60%	Diesel
160	Truck	Gltb-2213	Hino	1990	Umair Saleem	70%	Diesel
161	Truck	EA-5288	Hino	2003	Nasir Abbas	70%	Diesel
162	Truck	LES-5398	Isuzu	2007	Waris Ali	30%	Diesel
163	Minitruck	Caj-2055	Foton	2022	Nayar Iqbal	20%	Diesel
164	Truck	Nag-597	Hino	2004	Waqasali	30%	Diesel
165	Shahzore	Rlc-	Hyundai	2005	Muhamamd	30%	Diesel

		2305			Imran		
166	Bus	Ris-2156	Hino	2018	Junaid	20%	Diesel
167	Truck	Rin-7655	Hino	2011	Ch. Shafiq	50%	Diesel
168	Truck	C-1054	Isuzu	1993	Abdul Qayoom	20%	Diesel
169	Coaster	Jf-8048	Toyota	1992	Zubair Hussain	70%	Diesel
170	Tractor	BRC-5026	Massey	2006	M. Arif	25%	Diesel
171	Tractor	KK-453	Massey	2004	Musadaq Hussain	30%	Diesel
172	Tractor	Gha-4069	Millat	2000	M. Imran	50%	Diesel
173	Truck	Lzj-5963	Mazda	2006	Waqas	40%	Diesel
174	Bus	JB-5834	Hino	2015	Mudassir	50%	Diesel
175	Truck	XA-188	Bedford	1976	M. Imran	80%	Diesel
176	Bus	C-2273	Hino	2017	M. Hamza	40%	Diesel
177	Tractor	Lxk-5812	Millat	1999	Ameer Mukhtiyar	70%	Diesel
178	Bus	Bqu-095	Hino	1980	Hassan	80%	Diesel
179	Truck	Ris-692	Hino	2014	M. Shahzad	60%	Diesel
180	Tractor	Stt-9861	Millat	2005	M. Akhtar Hussain	50%	Diesel
181	Van	Lxk-4559	Toyota	2002	Nabeel Khan	80%	Petrol
182	Bus	Les-248	Daewoo	2014	Kamran Hassan	30%	Diesel
183	Van	RJS-2130	Toyota	2014	Arsalan	30%	Petrol
184	TRACTOR	SAE-8381	Millat	2002	M. Irfan	40%	Diesel
185	Truck	LXC-7648	Mazda	1998	Ashfaq Ahmad	40%	Diesel
186	Minitruck	Ric-2841	Isuzu	2019	M. Hussain	50%	Diesel
187	Truck	Tkb-076	Hino	1999	Abid Ali	25%	Diesel
188	Shahzore	C-1176	Hyundai	2006	Saleem	20%	Diesel
189	Truck	C-8721	Hino	2003	Shahid Khan	90%	Diesel
190	Shahzore	Lzj-7225	Hyundai	2004	Nasir Ahmad	35%	Diesel
191	Truck	HNR-2072	Hino	2005	Liaquat Ali	60%	Diesel
192	Truck	Z-7731	Hino	2003	Nusrat Abbas	40%	Diesel
193	Truck	C-2752	Hino	2000	Aleem Shair	90%	Diesel
194	Truck	GLT-5276	Bedford	1977	Mohsin	90%	Diesel
195	Truck	Rpt-4995	Hino	1989	Naseem Khan	80%	Diesel
196	Tractor	Caj-4355	Millat	2022	Muhammad Zada	35%	Diesel
197	Truck	EA-1018	Hino	1990	Gul Nawaz	90%	Diesel
198	Truck	MNK-1159	Bedford	1987	M. Riaz	60%	Diesel
199	Truck	Les-	Mazda	2011	M. Hazrat	90%	Diesel

		1482					
200	Bus	Ja-5095	Hino	2008	M.Safdar	90%	Diesel
201	Truck	E-3493	Fuso	2022	M.Waqas	60%	Diesel
202	Truck	Lot-2695	Mazda	1994	Saleem	60%	Diesel
203	Bus	Jb-019	Yutong	2005	M. Imran	90%	Diesel
204	Bus	BSN-555	Higer	2018	Yousuf	50%	Diesel
205	Truck	TML-733	Isuzu	2020	Mobeen Akhtar	70%	Diesel
206	Minitruck	Lfs-721	Mazda	2010	M. Aslam	40%	Diesel
207	Minitruck	Qis-5355	Isuzu	2018	M. Shafique	50%	Diesel
208	Truck	XB-125	Bedford	1975	M. Asif	50%	Diesel
209	Truck	Z-3156	Hino	1996	M. Nadeem	60%	Diesel
210	Truck	Z-1077	Bedford	1995	M.Irfan	90%	Diesel
211	Truck	Glbt-2744	Hino	1997	M.Essa	60%	Diesel
212	Bus	Lwn-3441	Isuzu	1990	M.Arfa	90%	Diesel
213	Truck	LES-3519	Mazda	2001	Shahid Ahmad	90%	Diesel
214	Truck	E-4015	Isuzu	2023	Amir Khan	80%	Diesel
215	Truck	P-8760	Nissan	1987	M.Yasin	60%	Diesel
216	Truck	C-2956	Nissan	2008	M.Rafaqat	80%	Diesel
217	Tractor	Lxk-5812	Millat	1999	Mir Mukhtiyar	60%	Diesel
218	Truck	Les-457	Isuzu	2017	Zulfiqar Ali	80%	Diesel
219	Truck	GLTD-2194	Hino	2018	Abid Sultan	60%	Diesel
220	Truck	CDA-051	Hino	1980	Mustaqeem Ali	70%	Diesel
221	Car	Lea-9623	Toyota	2008	Ahmad Ali	20%	Petrol
222	Truck	Fds-2606	Mazda	2019	Asim Hazarvi	40%	Diesel
223	Suzuki	RIS-170	Suzuki	2017	Ilyas Khan	40%	Petrol
224	Van	TAC-555	Changan	2022	Shakoor Ali	40%	Petrol
225	Tractor	CAD-4442	Massy	2021	Sajjad Khan	20%	Diesel
226	Suzuki	Ris-5697	Suzuki	2019	Ramzan Ahmad	90%	Petrol
227	Suzuki	TAA-987	Hyundai	2021	Waqas	30%	Petrol
228	Wagon	Les-4980	Toyota	2011	M.Rafiq	30%	Petrol
229	Suzuki	Tv-038	Suzuki	2017	Abid Hussain	20%	Petrol
230	Shahzore	Rif-4721	Hyundai	2006	Ikram Tariq	50%	Diesel
231	Wagon	Les-4770	Toyota	2000	M. Faisal	30%	Petrol
232	Shahzore	Ris-1267	Hyundai	2009	Amjad Abbasi	90%	Diesel
233	Bus	Ajke-3603	Hino	2000	Abdul Majid	90%	Diesel
234	Bus	Les-	Yutong	2020	Allah Dita	30%	Diesel

		9696					
235	Suzuki	Tp-080	Suzuki	2016	Abdul Qayoom	20%	Petrol
236	Tractor	Gt-636	Massay	2003	M. Ramzan	60%	Diesel
237	Tractor	Gaa-392	Millat	2004	M.Saeed	40%	Diesel
238	Suzuki	Tx-600	Suzuki	2019	M.Naseem	30%	Petrol
239	Van	Cag-5798	Changan	2022	Ashiq Mehmood	30%	Petrol
240	Minitruck	Ris-2210	Isuzu	2017	Farrukh Riaz	50%	Diesel
241	Shahzore	Qaj-9833	Hyundai	2004	M.Saeed	90%	Diesel
242	Minitruck	Ris-2480	Isuzu	2016	Sher Afzal	60%	Diesel
243	Minitruck	Ris-2349	Mazda	2011	Sabir Khan	50%	Diesel
244	Minitruck	Ris-3537	Foton	2018	Asad Mehmood	70%	Diesel
245	Shahzore	Rpt-9101	Hyundai	2006	Raja Shehzad	20%	Diesel
246	Van	Lwc-9443	Toyota	2006	Sabir Shahzad	20%	Petrol
247	Shahzore	Rpt-6716	Hyundai	2001	Noor Hussain	40%	Diesel
248	Bus	Let-8965	Toyota	2000	Nabeel Abbas	90%	Diesel
249	Suzuki	Tq-641	Suzuki	2013	Faizan Rahat	30%	Petrol
250	Bus	Idj-8285	Hino	1999	M.Arshad	30%	Diesel
251	Van	Ku-8798	Mercedes	1969	M.Khayal Hussain	90%	Petrol
252	Bus	Ge-631	Hino	2008	M.Zaman	80%	Diesel
253	Bus	Ga-738	Hino	2019	Ilyas Ahmad	60%	Diesel
254	Suzuki	Lb-5812	Suzuki	2022	Haider Khan	20%	Petrol
255	Suzuki	Rlf-4532	Suzuki	1983	Masood Ali	90%	Petrol
256	Suzuki	Lrj-8808	Suzuki	2005	Anees Ahmad	70%	Petrol
257	Minitruck	Les-7973	Isuzu	2016	M. Ishtiaq	30%	Diesel
258	Shahzore	Jui-1903	Mazda	2007	M.Jahanzaib	60%	Diesel
259	Shahzore	Idp-4060	Hyundai	2010	Chanzaib	60%	Diesel
260	Suzuki	Ris-3056	Suzuki	2016	Danish	20%	Petrol
261	Bus	Gah-004	Hino	2020	Arshad Khan	30%	Diesel
262	Minitruck	Td-315	Isuzu	2022	M.Hussain	50%	Diesel
263	Car	Ru-803	Toyota	2016	Sajid Latif	40%	Petrol
264	Coaster	Lzb-5295	Hino	2008	M.Javed	40%	Diesel
265	Minitruck	TZ-914	Isuzu	2019	Imran Khan	20%	Diesel
266	Truck	MNR-3486	Mazda	1993	Hassan Raza	40%	Diesel
267	Suzuki	Lei-3533	Suzuki	1982	M.Sagheer	20%	Petrol
268	Shahzore	Tac-161	Hyundai	2023	M.Adnan	20%	Diesel

269	Truck	Rel-615	Mazda	2016	Dilawar	40%	Diesel
270	Suzuki	Ris-5149	Suzuki	2019	M.Rafay	40%	Petrol
271	Suzuki	Tt-671	Suzuki	2015	M.Yasin	20%	Petrol
272	Shahzore	Ids-6268	Hyundai	2004	Atif Khan	50%	Diesel
273	Minitruck	Les-3137	Isuzu	2007	Tahir Mehmood	60%	Diesel
274	Shahzore	Rle-4623	Hyundai	2009	Zeeshan Khan	60%	Diesel
275	Suzuki	Les-1211	Suzuki	2020	M.Adeel	20%	Petrol
276	Suzuki	Cac-7682	Suzuki	2019	Zakir Khan	30%	Petrol
277	Bus	Idd-9265	Hino	2007	M.Fayyaz	30%	Diesel
278	Shahzore	Ids-6670	Hyundai	2007	Ashar Hussain	70%	Diesel
279	Suzuki	Tg-281	Suzuki	2010	M.Habib	10%	Petrol
280	Suzuki	Tac-629	Suzuki	2023	M.Jameel	10%	Petrol
281	Van	Lxp-2417	Hyundai	2000	M.Sadiq	50%	Petrol
282	Suzuki	Tv-789	Suzuki	2016	M.Dawood	10%	Petrol
283	Truck	AJKF-8405	Hino	2015	Muhammad Khan	90%	Diesel
284	Coaster	Les-981	Toyota	2015	M.Azam	40%	Diesel
285	Bus	K-3044	Hino	2009	Imran	90%	Diesel
286	Coaster	Lwc-1576	Toyota	2006	Asif	80%	Diesel
287	Truck	Tkg-656	Hino	2003	Asad	40%	Diesel
288	Coaster	Xa-232	Toyota	1972	Amir Khan	40%	Diesel
289	Shahzore	Lro-6905	Hyundai	2005	Danish	30%	Diesel
290	Wagon	Ku-1154	Toyota	2016	Ikram	20%	Petrol
291	Minitruck	LES-5836	Mazda	2010	Kabir Khan	90%	Diesel
292	Shahzore	Rlc-2160	Hyundai	2006	Fazal Hussain	50%	Diesel
293	Coaster	STD-3044	Toyota	1992	Zulnurain	20%	Diesel
294	Truck	Tkx-791	Hino	2010	Abdul Hameed	30%	Diesel
295	Coaster	LES-875	Toyota	2015	Sajawal	30%	Diesel
296	Minitruck	Ris-1182	Forland	2019	Fazal Razi	20%	Diesel
297	Wagon	Lzr-5253	Toyota	2005	Mazhar Abbasi	20%	Petrol
298	Tractor	T-0276	Millat	1996	Wahid Ullah	50%	Diesel
299	Van	Jf-2013	Toyota	1996	Pervez Abbasi	50%	Petrol
300	Shahzore	Rpt-6200	Hyundai	2000	Iqbal Hussain	80%	Diesel
301	Van	Rpt-8528	Toyota	1993	Mohsin Abbasi	40%	Petrol
302	Minitruck	Can-042	Foton	2023	Mazhar Waqas	40%	Diesel
303	Minitruck	Ris-	Fuso	2016	Ghulam	60%	Diesel

		3426			Murtaza		
304	Truck	Les-3077	Hino	2007	Zahir Khan	50%	Diesel
305	Truck	SGF-3795	Mazda	1990	Asif Khan	40%	Diesel
306	Coaster	BMA-072	Toyota	2005	Nazir Hussain	40%	Diesel
307	Coaster	LES-999	Toyota	2019	Amir Younus	70%	Diesel
308	Coaster	LES-4744	Toyota	2003	Ch.Danish	30%	Diesel
309	Van	TAA-732	Toyota	2011	Imran Abbasi	30%	Petrol
310	Coaster	C-2564	Toyota	1996	Rabnawaz	60%	Diesel
311	Truck	GLTD-1647	Dong Feng	2018	Gulfaraz	30%	Diesel
312	Van	JF-5636	Toyota	2013	Tahir	50%	Petrol
313	Suzuki	Caq-1752	Suzuki	2021	Saqib Hussain	30%	Petrol
314	Bus	Qm-4762	Hino	2005	Faisal Hussain	80%	Diesel
315	Bus	KB-9595	Toyota	1995	Sheraz	50%	Diesel
316	Truck	Rpi-15	Mazda	2018	Talib Hussain	40%	Diesel
317	Truck	C-2384	Hino	2012	Shahid Hussain	50%	Diesel
318	Van	Bh-Ra-052	Toyota	1992	Atiq Ur Rehman	70%	Petrol
319	Minitruck	Ris-3603	Isuzu	2018	Murtaza	50%	Diesel
320	Bus	Sgf-3251	Toyota	2004	Naqash Ali	60%	Diesel
321	Suzuki	Ris-2091	Suzuki	2018	Sameer Abbasi	50%	Petrol
322	Van	Les-8311	Toyota	2013	M.Aqif	20%	Petrol
323	Coaster	Rnr-6688	Toyota	2016	Usama	30%	Diesel
324	Coaster	Mnq-5025	Toyota	1992	M.Saqib	50%	Diesel
325	Shahzore	Ris-2161	Hyundai	2007	M.Naveed	30%	Diesel
326	Suzuki	Ris-1592	Suzuki	2019	M.Kashif	20%	Petrol
327	Van	E-1763	Toyota	1998	M.Saddique	50%	Diesel
328	Bus	Rir-7591	Bedford	1984	Zain Abbasi	70%	Diesel
329	Van	Lxp-1198	Toyota	2000	M.Amjad	30%	Petrol
330	Van	Les-1143	Toyota	2013	M.Asif	40%	Petrol
331	Truck	Jy-0509	Toyota	1991	Fida Ahmad	90%	Diesel
332	Van	Cp-4621	Mazda	2004	M.Ashraf	90%	Petrol
333	Suzuki	Tq-257	Mitsubishi	2013	Aurangzeb	40%	Petrol
334	Car	Lef-3670	Suzuki	2018	Malik Akhtar	20%	Petrol
335	Truck	GD-863	Isuzu	2003	ICT Police	20%	Diesel
336	Shahzore	Lwn-	Hyundai	2005	Safeer	80%	Diesel

		2320					
337	Van	Les-5441	Toyota	2018	Zakria Khan	30%	Petrol
338	Suzuki	Ids-1412	Suzuki	2003	Gul Nawaz	40%	Petrol
339	Suzuki	Rir-1848	Suzuki	1987	Naseer Ahmad	30%	Petrol
340	Car	Rin-816	Toyota	2005	Ahmad Khan	80%	Petrol
341	Datsun	Les-6250	Toyota	2014	Ibrar Hussain	90%	Diesel
342	Car	V-1252	Toyota	2005	M. Ramzan	60%	Petrol
343	Truck	Hm-28	Mazda	2008	Aurangzeb	50%	Diesel
344	Car	Cd-85-53	Toyota	2022	Paul Londel	20%	Petrol
345	Truck	Jy-9076	M - Forland	2017	M. Imran	50%	Diesel
346	Van	Lrt-9045	Toyota	2003	Imtiaz Ahmad	70%	Petrol
347	Suzuki	Ris-633	Suzuki	2013	Hakim Nawaz	30%	Petrol
348	Van	Cal-3194	Hyundai	2021	Sabtain Ahmad	50%	Petrol
349	Car	Lee-169	Toyota	2014	Khurram Shehzad	10%	Petrol
350	Car	Bbu-820	Toyota	2021	M. Shoaib	20%	Petrol
351	Van	Kw-9979	Toyota	2012	M. Hassan	50%	Petrol
352	Bus	Gab-926	Hino	2016	Aqeel Rehman	60%	Diesel
353	Van	Mia-4746	Toyota	1997	Tauseef Ahmad	40%	Petrol
354	Suzuki	Ris-2118	Suzuki	2019	Abdul Jabbar	20%	Petrol
355	Bus	Gt-623	Nissan	2017	Basheer Ahmad	40%	Diesel
356	Car	Ra-872	Toyota	2012	Naveed Khan	20%	Petrol
357	Shahzore	Ris-2047	Hyundai	2007	M.Kaleem	50%	Diesel
358	Car	Bw-488	Land Cruiser	2001	Shahrukh Naqi	30%	Petrol
359	Datsun	Mk-372	Mitsubishi	2006	M.Mudasir	20%	Diesel
360	Truck	Ide-8624	Isuzu	1991	Amir Hussain	40%	Diesel
361	Van	Fdh-2558	Suzuki	1989	Adnan Hussain	50%	Petrol
362	Wagon	Ku-0224	Toyota	2022	Amir Syed	90%	Petrol
363	Car	Low-8000	Mitsubishi	1995	Wahid Khan	50%	Petrol
364	Datsun	Les-5554	Toyota	2015	Mazhar Hussain	90%	Diesel
365	Wagon	Pe-1786	Toyota	1992	M. Gulfam	30%	Petrol
366	Van	Gk-396	Mitsubishi	1980	Talib Hussain	30%	Petrol
367	Loader	Tac-827	Forland	2023	Noor Sharif	20%	Diesel
368	Wagon	Les-8860	Toyota	2014	Mehraban Ahmad	20%	Petrol
369	Coaster	Les-	Toyota	2011	Zameer	30%	Diesel

		8619			Hussain		
370	Bus	Gaa-872	Hino	2006	Shakeel	30%	Diesel
371	Bus	Gh-250	Hino	2014	Syed Usama Ijaz	70%	Diesel
372	Van	Les-5147	Toyota	2005	Taif Nazir	20%	Petrol
373	Datsun	Ris-1776	Toyota	2002	Shams Tabraiz	50%	Diesel
374	Car	Faa-161	Toyota	2015	M.Zahid	30%	Petrol
375	Wagon	Les-4793	Toyota	2008	Kaazim	30%	Petrol
376	Bus	Gx-031	Hino	2004	Saddam Hussain	90%	Diesel
377	Minitruck	Ris-3424	Isuzu	2016	Abdul Ghaffar	50%	Diesel
378	Wagon	Les-8777	Toyota	2017	Mehtab Abbasi	70%	Petrol
379	Car	Ris-1902	Toyota	2017	Matloob Ali	40%	Petrol
380	Bus	Gaa-841	Hino	2018	Chanwaiz	50%	Diesel
381	Suzuki	Lhn-8459	Suzuki	2012	Meranshah	40%	Petrol
382	Van	Ris-221	Toyota	2010	Afraz Ali	30%	Petrol
383	Bus	Lei-599	Toyota	2015	Sadiq Khan	50%	Diesel

Traffic Count at Different Sites

S.N	Location	Description	Date	Time	Total No of Vehicles
1.	G-14 Srinagar Highway	Major gateway	9-01-24	1:00 PM to 3:00 PM	10502
2.	GT Road near I-14	Entry and exit point	10-01-24	1:00 PM to 3:00 PM	9608
3.	Srinagar Highway G-9 Exit Point	Entry and exit point	11-01-24	2:00 PM to 4:00 PM	11290
4.	Islamabad Express Highway PWD Exit	Entry and exit point	12-01-24	11:00 AM to 3:00 PM	17280
5.	9th Avenue I-9 Entry Point	Entry and exit point	15-01-24	2:00 PM to 4:00 PM	995
6.	Shahpur Bypass Bharakahu	Entry and exit point	16-01-24	4:00 PM to 6:00 PM	2250
7.	D-Chowk and Aabpara Chowk	Central point of city	17-01-24	1:00 PM to 3:00	930

Noise Level at Different Site						
S.No.	Location	Description	Date	Time	Noise Standard	Noise Level
1.	G-14 Srinagar Highway	Major gateway	9-01-24	1:00 PM to 3:00 PM	85dBA	109
2.	GT Road near I-14	Entry and exit point	10-01-24	1:00 PM to 3:00 PM	85dBA	126
3.	Srinagar Highway G-9 Exit Point	Entry and exit point	11-01-24	2:00 PM to 4:00 PM	85dBA	105
4.	Islamabad Express Highway PWD Exit	Entry and exit point	12-01-24	11:00 AM to 3:00 PM	85dBA	115
5.	9th Avenue I-9 Entry Point	Entry and exit point	15-01-24	2:00 PM to 4:00 PM	85dBA	110
6.	Shahpur Bypass Bharakahu	Entry and exit point	16-01-24	4:00 PM to 6:00 PM	85dBA	103
7.	D-Chowk and Aabpara Chowk	Central point of city	17-01-24	1:00 PM to 3:00	85dBA	92

Ambient Air Quality of Islamabad 2023					
Parameters	Temperature °C	Humidity	NO ₂	SO ₂	PM _{2.5}
January	10.50	51.40	13.50	37.70	62.88
February	13.51	47.70	7.57	22.84	36.73
March	17.9	55.64	4.54	19.6	22.69
April	20.23	51.82	3.74	17.3	18.097
May	25.51	47.03	3.87	14.88	15.88
June	34.53	68,23	5.43	8.23	14.58
July	30.21	73.09	7.92	8.01	14.27
August	32.08	59.13	9.91	11.28	17.24

September	33.68	59.77	10.54	12.58	21.15
October	26.78	61.38	10.82	12.52	23.32
November	17.50	55.36	8.00	17.24	48.09
December	13.74	51.71	8.07	16.35	59.03
Average Year	22.18	61.02	7.77	16.54	27.91
NEQS Value			80 µg/m ³	120 µg/m ³	35 µg/m ³
<i>PM:</i>	<i>Particulate Matter</i>				
<i>NEQS:</i>	<i>National Environmental Quality Standards</i>				

3. Ambient Air Quality 2023:

While various factors impact ambient air quality, data from the above table underscores the significant role of vehicular emissions in contributing to air pollution in Islamabad. Elevated levels of nitrogen dioxide (NO₂) in January (13.50 µg/m³) and November (8.00 µg/m³) coincide with peaks in vehicular activity, indicating a direct correlation between traffic volume and NO₂ concentrations. Similarly, sulfur dioxide (SO₂) levels, notably high in January (37.70 µg/m³) and December (16.35 µg/m³), align with increased vehicular emissions during colder months when fuel combustion for heating purposes is common. Furthermore, particulate matter with a diameter of 2.5 micrometers or less (PM_{2.5}), which often originates from vehicular exhaust, exhibits elevated concentrations in January (62.88 µg/m³) and December (59.03 µg/m³). The data underscores the urgency of mitigating the impact of vehicular emissions on air quality in Islamabad.

4. Discussion:

The campaign against smoke-emitting vehicles involved the inspection of 383 vehicles across various categories, including buses, vans, cars, minitrucks, trucks, and tractors. Heavy Transport Vehicles (HTV) using Diesel fuel was found to be the primary contributors to smoke emissions, with fines imposed on 27% of the vehicles. Rigorous testing of soot carbon smoke emissions resulted in 105 fines being imposed on vehicles that exceeded the National Environmental Quality Standards (NEQS) emission levels by over 40% against the Ringelmann scale.

The data from the campaign highlights the significant impact of vehicular emissions on air quality and public health. It underscores the importance of monitoring and regulating smoke emissions from Diesel-fueled vehicles, particularly HTVs. The findings emphasize the need for continued efforts to ensure compliance with environmental quality standards and to mitigate the impact of vehicular emissions on the environment and human health. The campaign's results call for strict enforcement of emission regulations, especially for heavy transport vehicles, to address the issue of smoke emissions effectively.

5. Conclusion

The campaign to control smoke emissions from vehicles was a significant step towards addressing the issue of vehicular emissions and their impact on air quality and public health. The findings from the campaign underscore the importance of monitoring and regulating smoke emissions from Diesel fueled vehicles, particularly heavy transport vehicles. The imposition of fines on non-compliant vehicles and the rigorous testing of soot carbon smoke emissions highlight the need for strict enforcement of emission regulations.

6. Reference

- Faiz, Y., Tufail, M., Javed, M. T., & Chaudhry, M. M. (2009). Road dust pollution of Cd, Cu, Ni, Pb and Zn along islamabad expressway, Pakistan. *Microchemical Journal*, 92(2), 186-192.
- Rasheed, A., Aneja, V. P., Aiyyer, A., & Rafique, U. (2014). Measurements and analysis of air quality in Islamabad, Pakistan. *Earth's future*, 2(6), 303-314.
- Anjum, M. S., Ali, S. M., Subhani, M. A., Anwar, M. N., Nizami, A. S., Ashraf, U., & Khokhar, M. F. (2021). An emerged challenge of air pollution and ever-increasing particulate matter in Pakistan; a critical review. *Journal of Hazardous Materials*, 402, 123943.
- Hassan, M., Malik, A. H., Waseem, A., & Abbas, M. (2013). Air pollution monitoring in urban areas due to heavy transportation and industries: A case study of Rawalpindi and Islamabad. *J. Chem. Soc. Pak*, 35(6), 1623.
- Anwar, M. N., Shabbir, M., Tahir, E., Iftikhar, M., Saif, H., Tahir, A., ... & Nizami, A. S. (2021).

Emerging challenges of air pollution and particulate matter in China, India, and Pakistan and mitigating solutions. *Journal of Hazardous Materials*, 416, 125851.

- Nazir, R., & Shah, M. H. (2023). Evaluation of air quality and health risks associated with trace elements in respirable particulates (PM_{2.5}) from Islamabad, Pakistan. *Environmental Monitoring and Assessment*, 195(10), 1182.
- Siddique, N., Waheed, S., Daud, M., Markwitz, A., & Hopke, P. (2012). Air quality study of Islamabad: preliminary results. *Journal of Radioanalytical and Nuclear Chemistry*, 293(1), 351-358.
- Islamabad, Pakistan Metro Area Population 1950-2024. (2024). Macrotrends. Retrieved February 16, 2024, from <https://www.macrotrends.net/cities/22042/islamabad/population>.
- Ambient Air Quality 2023. (2023). Pakistan Environmental Protection Agency. <https://environment.gov.pk/>.
- Barber, N. (2008). World in Focus-Focus on Pakistan. *World Almanac Library*, Stamford, Ct.