

Overall Information

Table1- Overall Information

Vehicle plate number	78524
CPK data logger number	LN: 001443, DN: 1930, Sim +989218786219
Bus line	Number 4 (south to north Bus line)
Bus Terminals	Tehran South Bus Terminal - Park Way Bus Terminal
Total path distance	22.8 km
DPF producer company	PURltech (Passive system with FBC)
Installation date	28/Jan/2015
Report period	01/Jul/2016 – 15/Jul/2016 (fifteen days)
K value	2.00
K value	0.02

Table 2- DPF Maintenance History

Filter maintenance date	<p>DPF core was removed on Jul 22nd and was cleaned on Aug 12th for the first time. Considering system relatively high backpressure, filter isolation defect and air filter's deformation, DPF core was removed on Sep 16th and installed on Nov 17th.</p> <p>The third cleaning was unavoidable after only 6 days working and was done on 29th Nov. System only worked for two days and DPF was replaced by muffler on Nov 30th.</p> <p>DPF was installed for the fourth time on Jan/19/2016 and was replaced by muffler after only three days working because of high backpressure.</p> <p>A new DPF core was installed on May/14/2016 and was cleaned on 2016.06.25.</p> <p>The DPF core was replaced by muffler on Jul/10/2016 due to high backpressure.</p>
Dosing status	Dosing value has been kept constant from installation date until now.

Table 3- Fuel and Additive Consumption Information

Bus mileage (from DPF installation date)	95840 km
Bus mileage over the period	4834 km
Working days over the period	11 days
Stop days	4 days
Data logger working days	11 days
Working hours over the period	293 hours 7 minutes
Average working hours per day (including stop days)	19 hours 32 minutes
Bus average speed	16.5 km/hr
idle speed time to all working time ration	24.74 %
Total Bus fuel consumption over the period	2465 lit
Fuel consumption per hour	8.41 lit/hr
Average fuel consumption	0.51 lit/km
Total Bus additive consumption over the period	1.183 lit
Average additive consumption	244 cc/km
Additive consumption to fuel ration	480 cc/1000lit

Temperature, Pressure and Engine Speed Overview

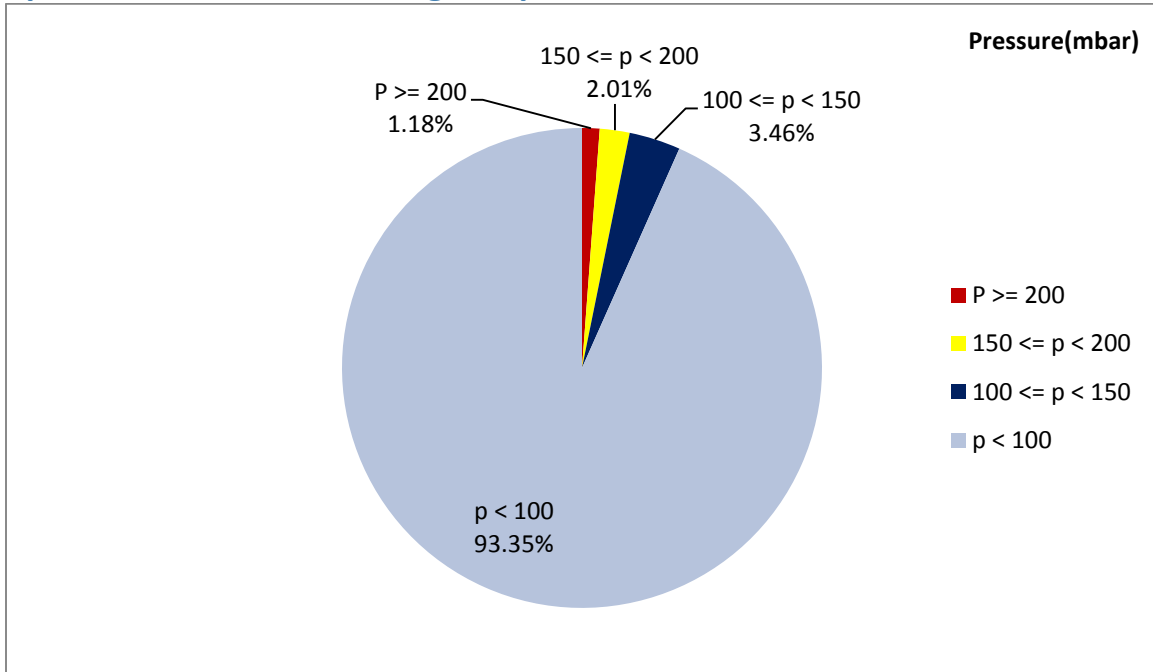


Figure 1- Pressure distribution over the working hours

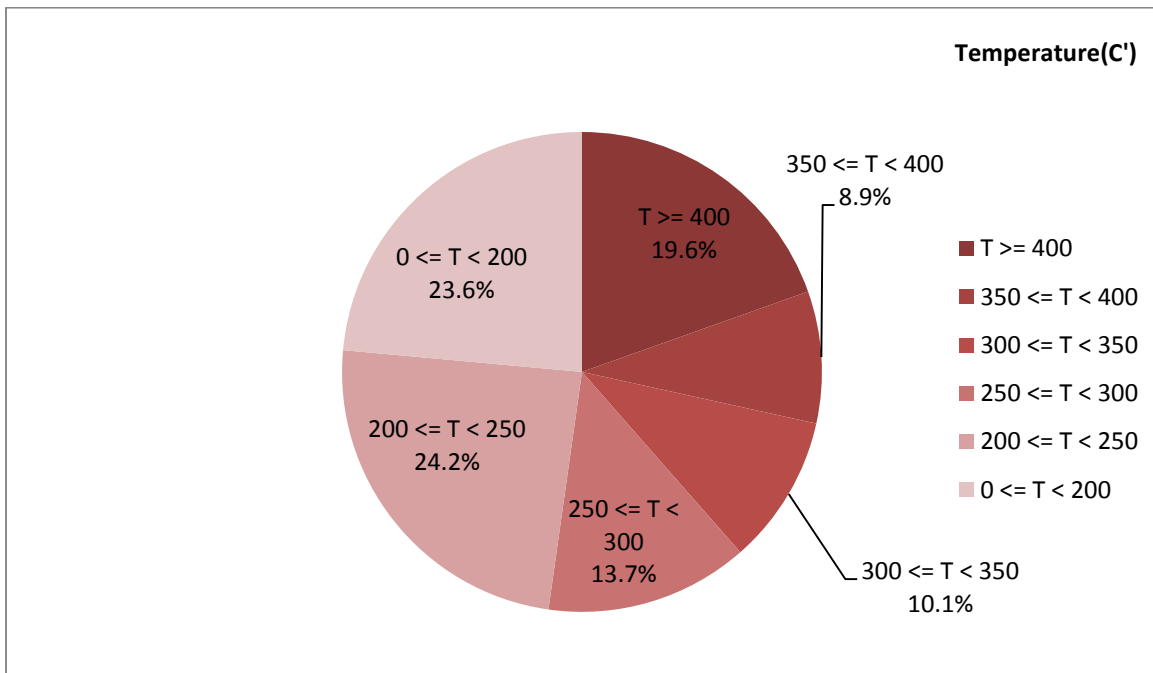


Figure 2-Temperature distribution over the working hours

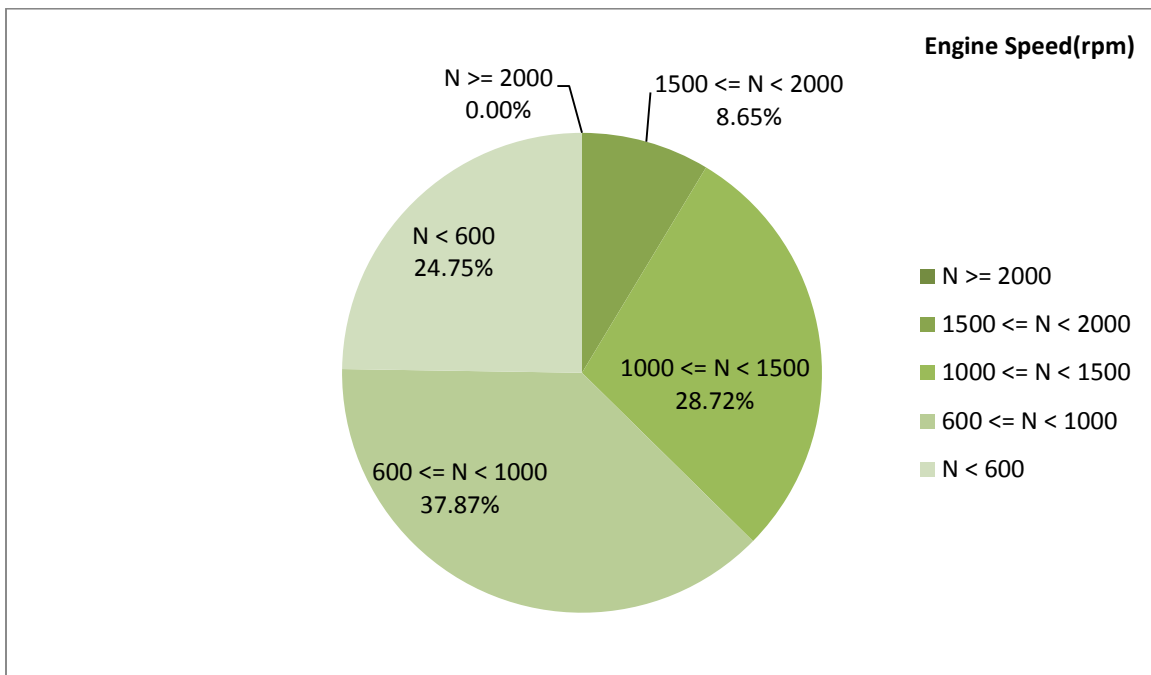


Figure 3- Engine speed distribution over the working hours

Table 4- Mean values

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
289.45	27.4	929

Table 5- Mean values without idling

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
313.77	33.95	1055

Table 6- Max-min values

Max-min temperature(C)	Max-min pressure(mbar)	Max-min engine speed(rpm)
670-50	297-0	1904-256

Detailed Pressure Analysis

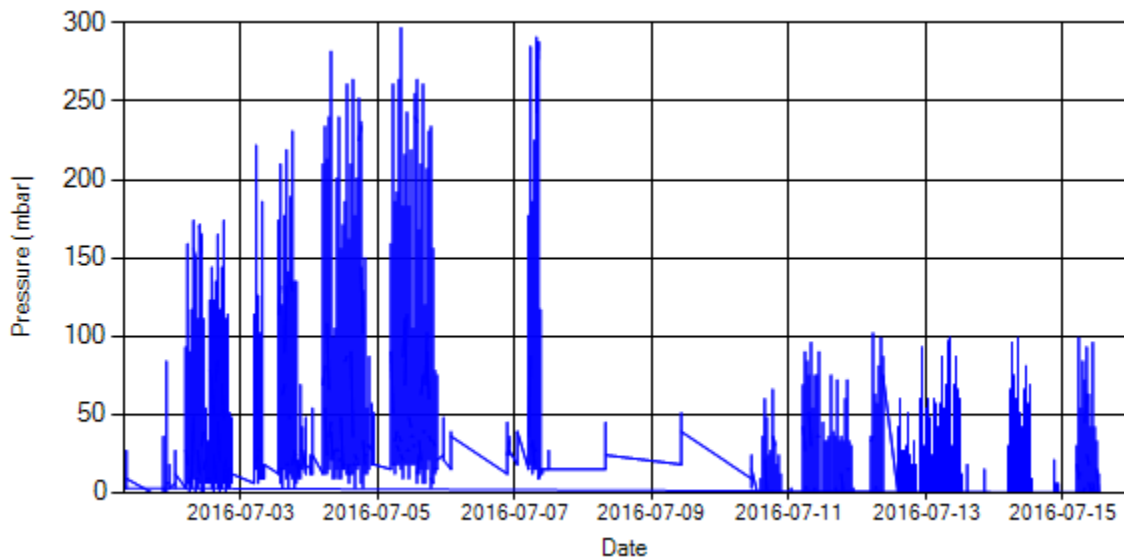


Figure 4- Pressure distribution over the period

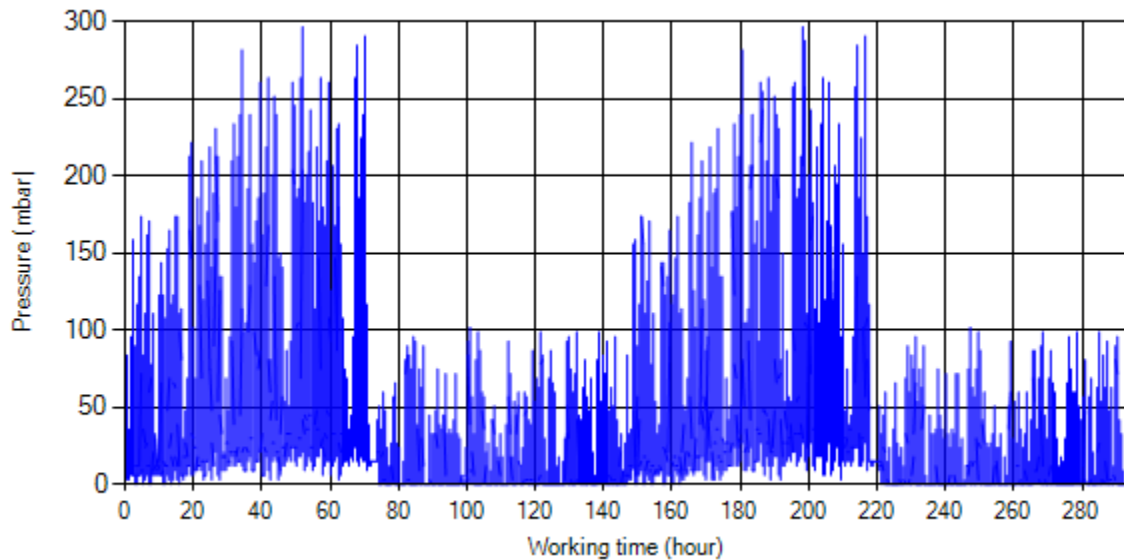


Figure 5- Pressure vs. working hours

Notice: backpressure distribution was shown into two diagrams. As obvious in figure 5, stop-working periods were eliminated and pressure was displayed along working hours.

Detailed Temperature Analysis

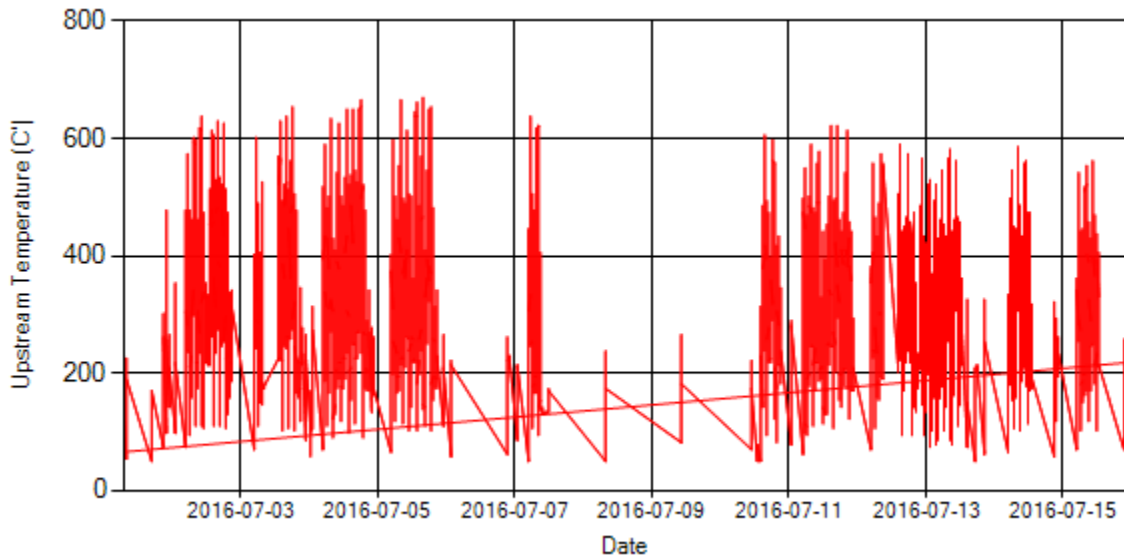


Figure 6- Temperature distribution over the period

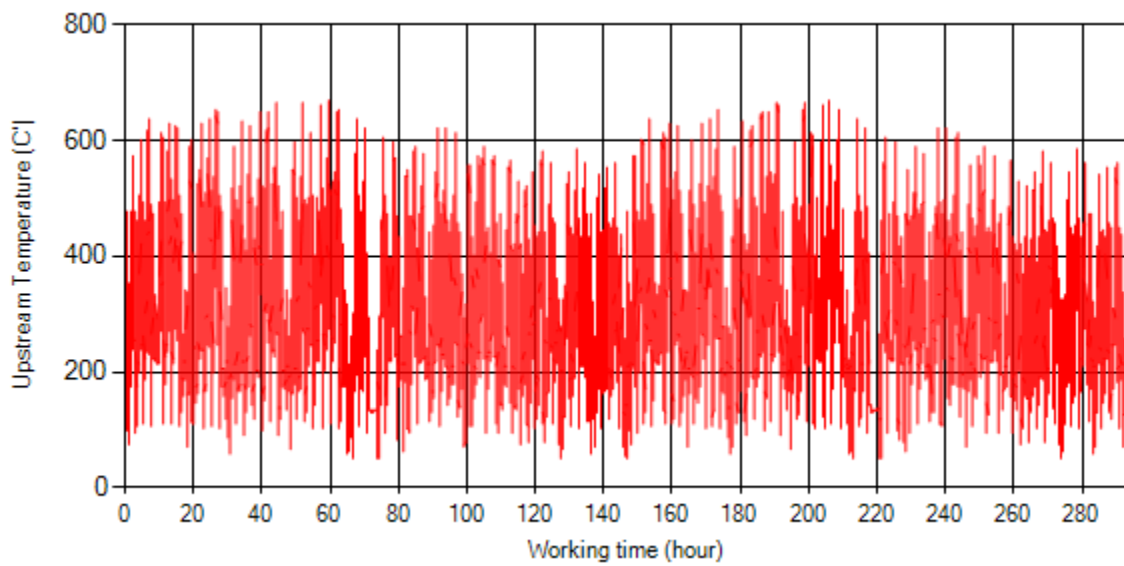


Figure 7- Temperature vs. working hours

Engine Speed Diagrams

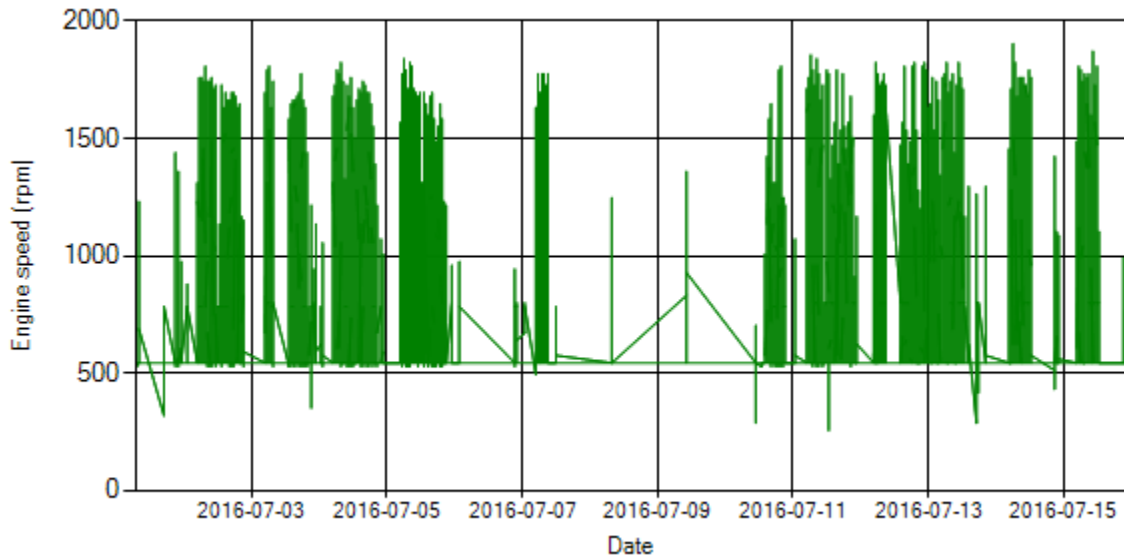


Figure 8- Engine speed distribution over the period

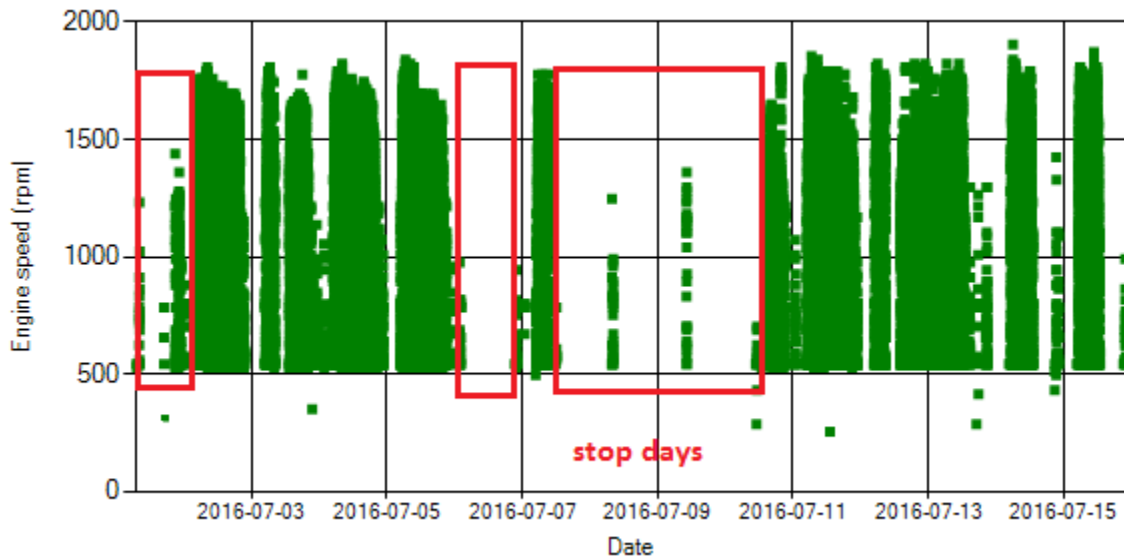


Figure 9- Engine speed diagram for calculating CPK's working days

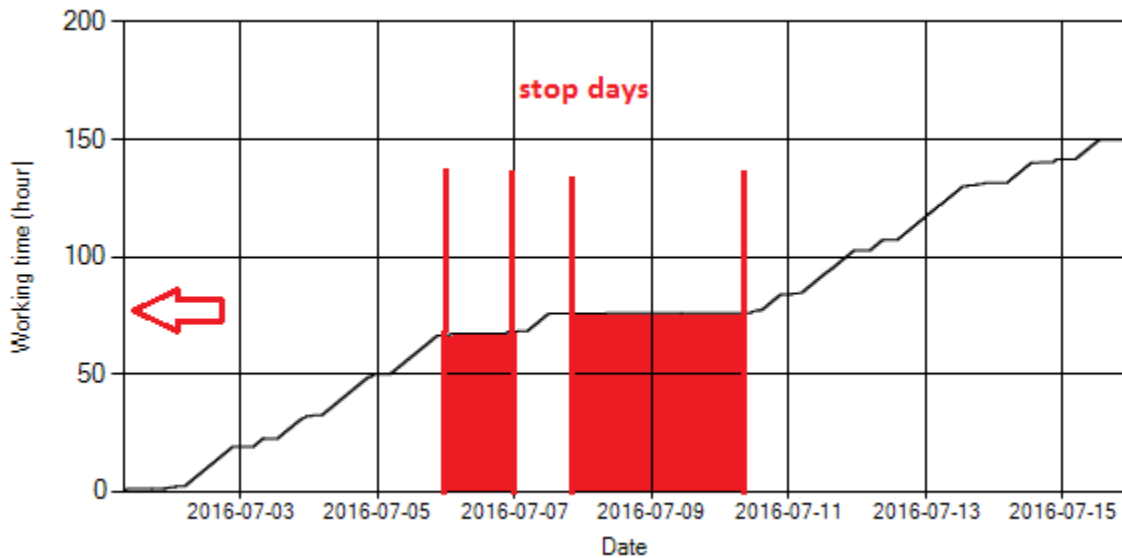


Figure 10- Time diagram for calculating CPK's working days

Notice: Data logger sampling time can be calculated from Figure 10. The lines parallel with Date axis show days without data logger data. As depicted in Figure 10 system was stationary for 4 days.

Pressure-Engine Speed diagrams

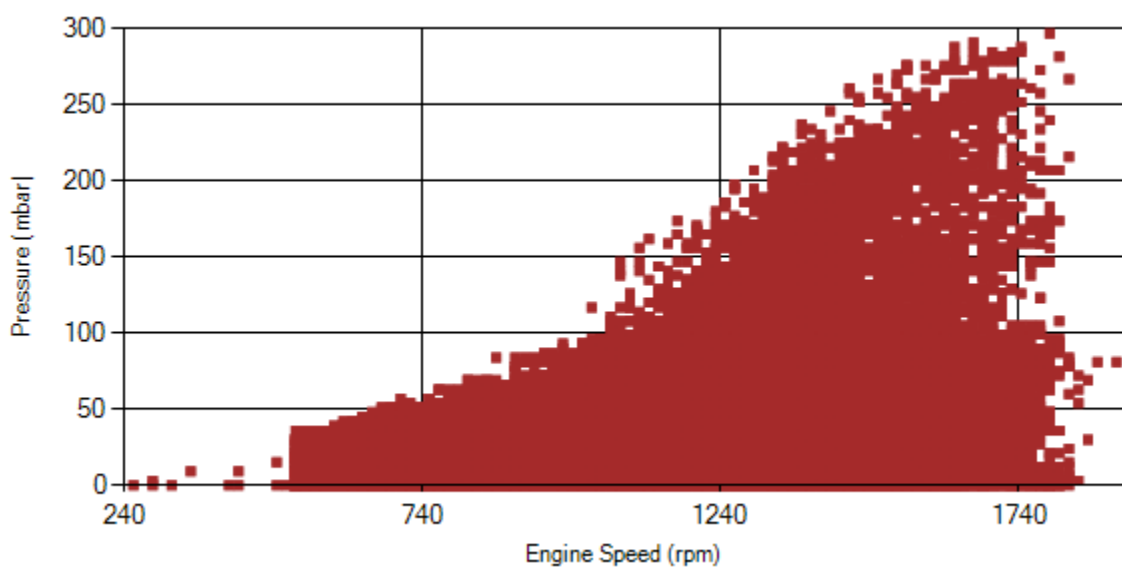


Figure 11- Pressure against engine speed

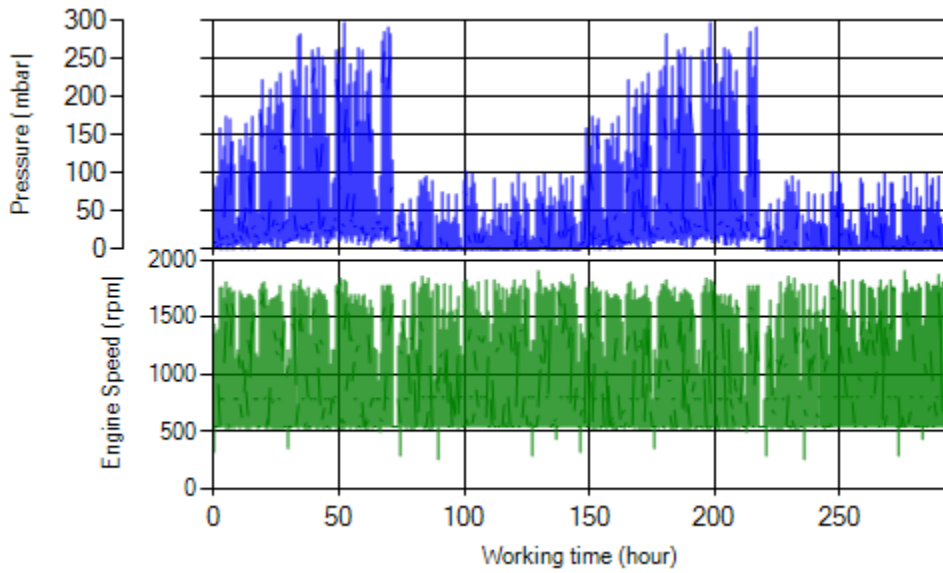


Figure 12- P, N distribution vs. working hours

Temperature-Engine Speed diagrams

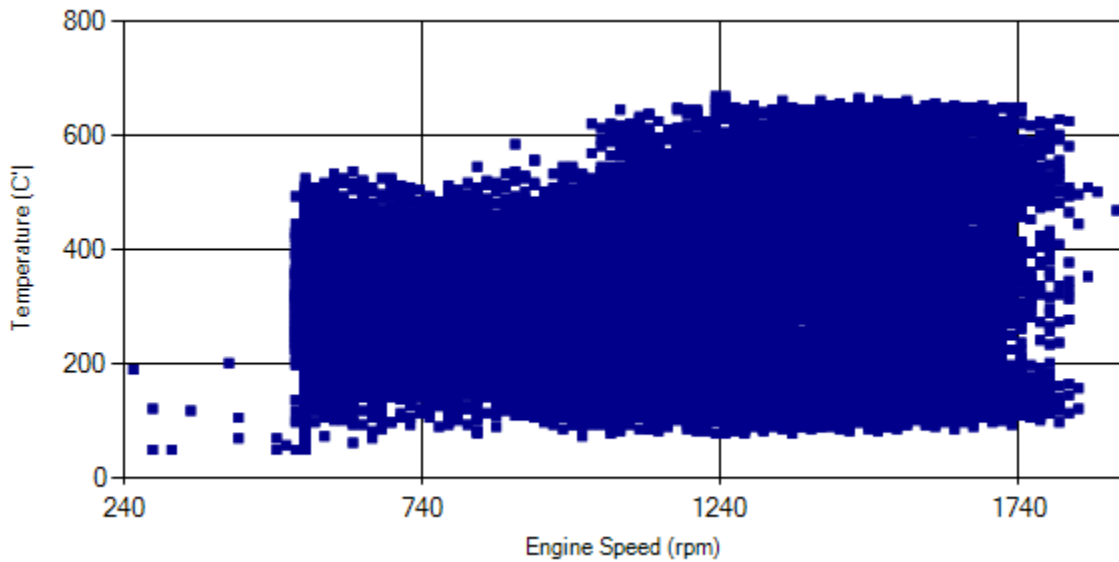


Figure 13- Temperature against engine speed

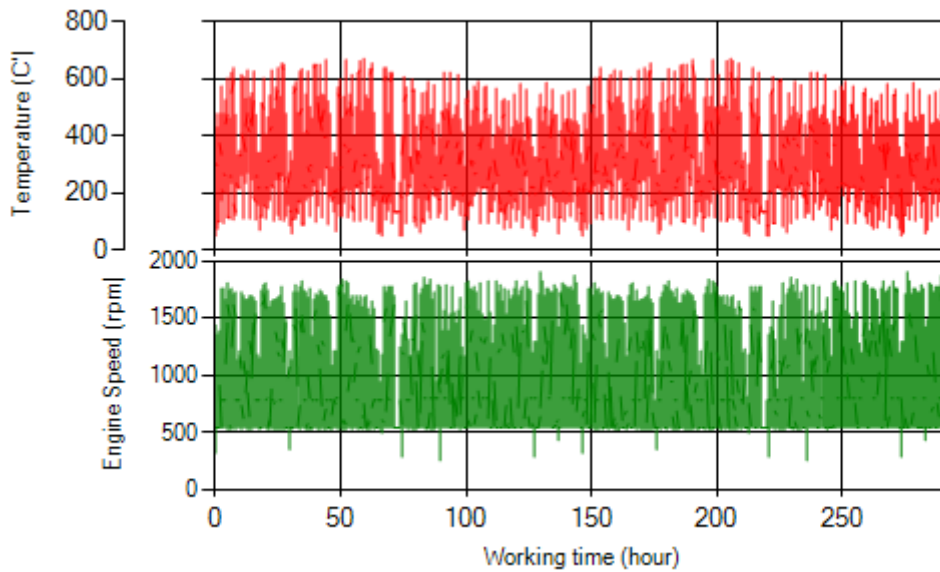


Figure 14- T, N distribution vs. working hours

Filter Operation Analysis

- As depicted in Figure 1, 1.18% of working time, pressure was above 200 mbar and 3.19% was above 150 mbar.
- Figure 2 displays flow temperature before the DPF. It can be obviously observed that 19.6% of total working time temperature is above 400 °C and 28.5% above 350°C.

Filter operation status	Excellent <input type="checkbox"/>	Good <input type="checkbox"/>
	Maintenance required <input checked="" type="checkbox"/>	Failed <input type="checkbox"/>