

Overall Information

Table1- Overall Information

Vehicle plate number	78515
CPK data logger number	LN: 001490, DN: 1954, Sim Number +98000000000
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	Dinex_01 (passive system with FBC)
Installation date	22/Oct/2014
Report period	1/Jul/2015 – 15/Jul/2015 (fifteen days)
K value - DPF upstream	1.24 [1/m]
K value – DPF downstream	0.00 [1/m]

Table 2- DPF Maintenance History

Filter maintenance date	Filter core was changed on 15/Feb/2015.
Dosing status	Dosing value was reduced to 30% of its initial value on March February 15 th

Table 3- Fuel and Additive Consumption Information

Bus mileage (from DPF installation date)	38276 km
Bus mileage over the period	2100 km
Working days over the period	13 days
Stop days	2 days
Data logger working days	13 days
Working hours over the period	173 hour 6 minutes
Average working hours per day (including stop days)	11 hour 32 minutes
Bus average speed	12.14 km/hr ¹
Idle speed time to all working time ration	60 % ²
Total Bus fuel consumption over the period	1302 lit
Fuel consumption per hour	7.53 lit/hr
Average fuel consumption	0.62 lit/km
Total Bus additive consumption over the period	0.339 lit
Average additive consumption	161 cc/km
Additive consumption to fuel ration	260 cc per 1000 lit (continuous dosing)

1-Due to engine maintenance, idle working ratio was high. So average speed was relatively low during this period.

2- Engine rotational speed for this vehicle when air conditioning system is on, is approximately 784 rpm and without use of cooling system is about 544 rpm.

Temperature, Pressure and Engine Speed Overview

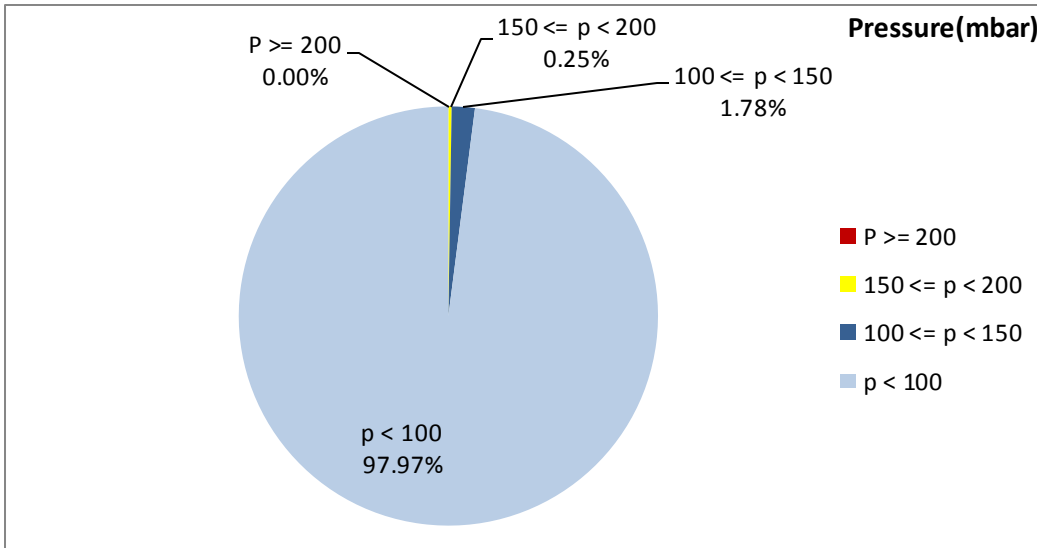


Figure 1- Pressure distribution over the working hours

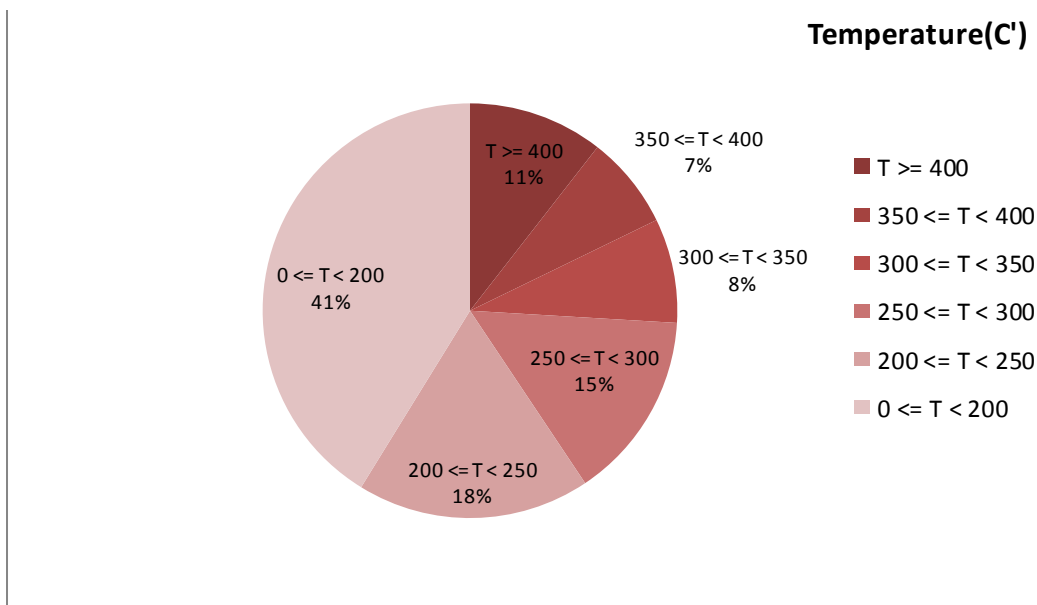


Figure 2-Temperature distribution over the working hours

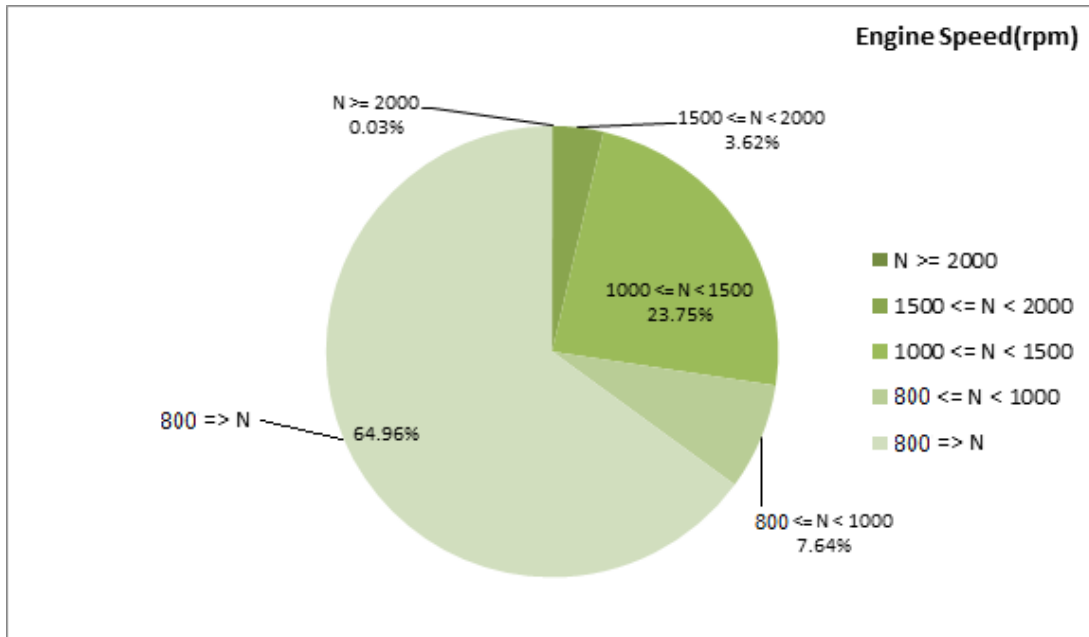


Figure 3- Engine speed distribution over the working hours

Table 4- Mean values

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
245.4	17.17	751

Table 5- Mean values without idling

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
302.96	31.30	1027

Table 6- Max-min values

Max-min temperature(C)	Max-min pressure(mbar)	Max-min engine speed(rpm)
562-50	198-0	2128-250

Detailed Pressure Analysis

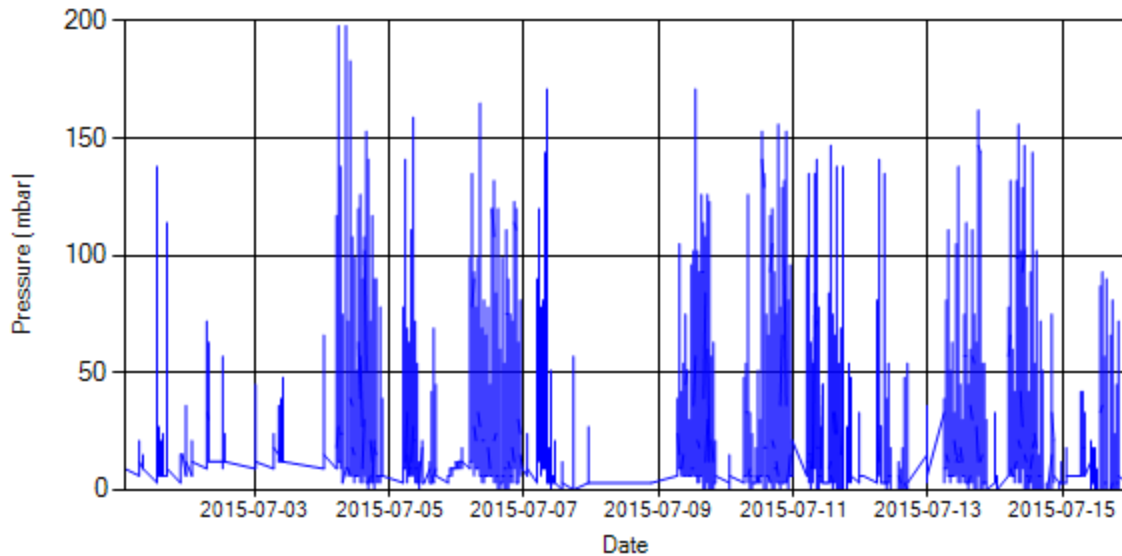


Figure 4- Pressure distribution over the period

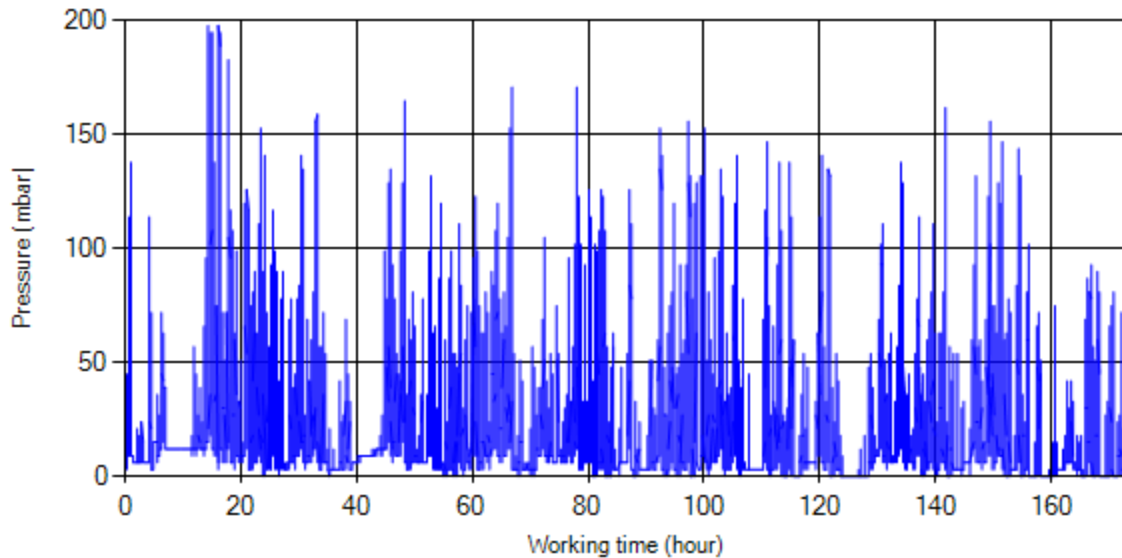


Figure 5- Pressure vs. working hours

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

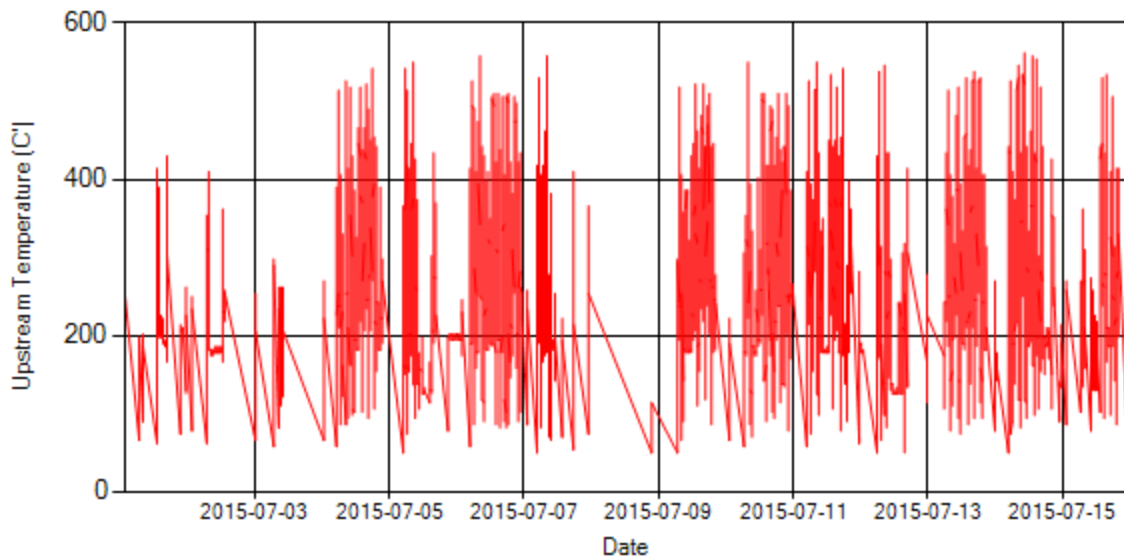


Figure 6- Temperature distribution over the period

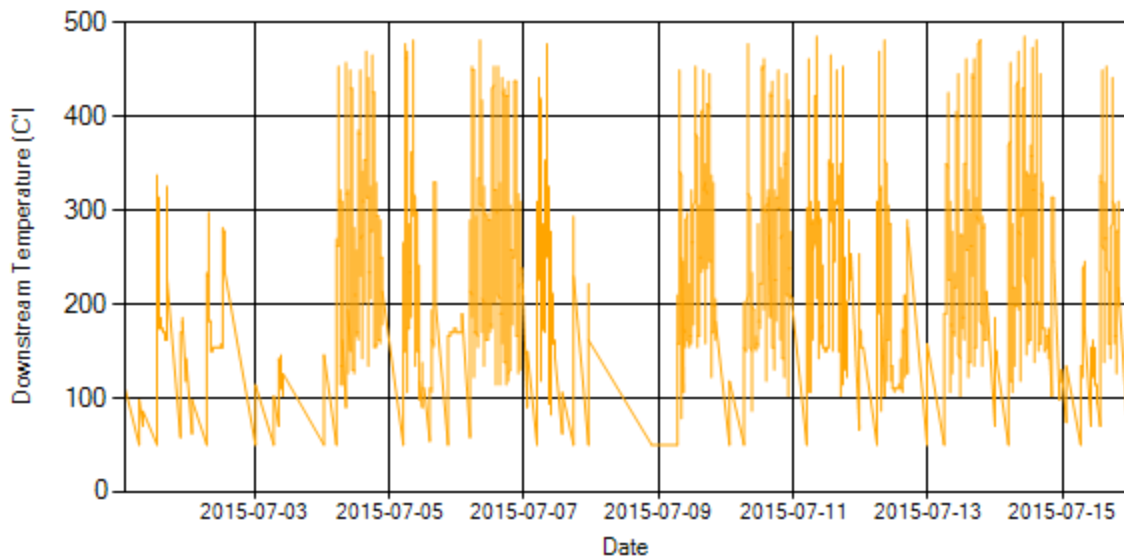


Figure 7- Temperature distribution over the period

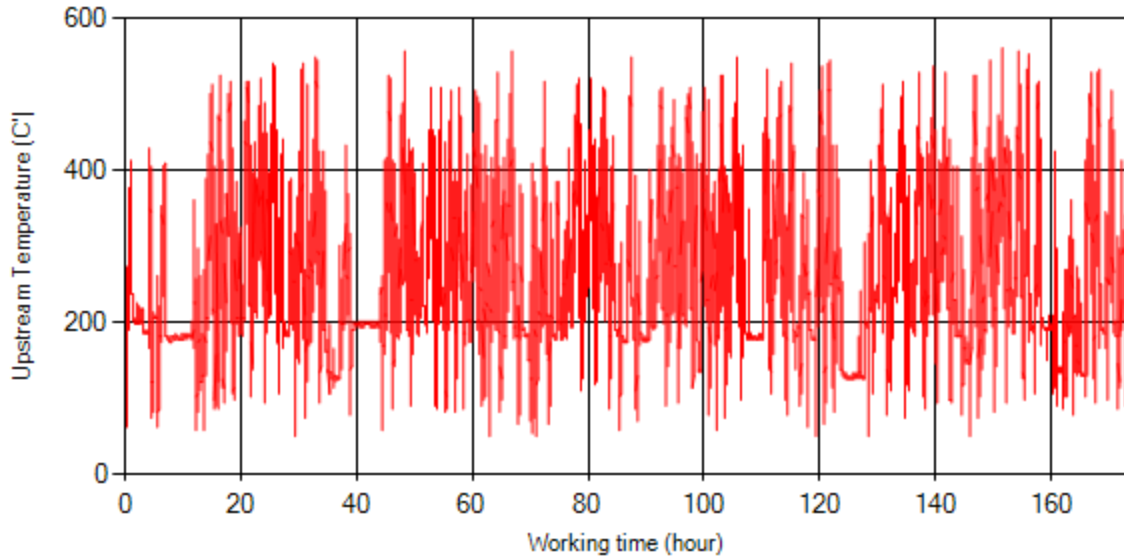


Figure 8- Temperature vs. working hours

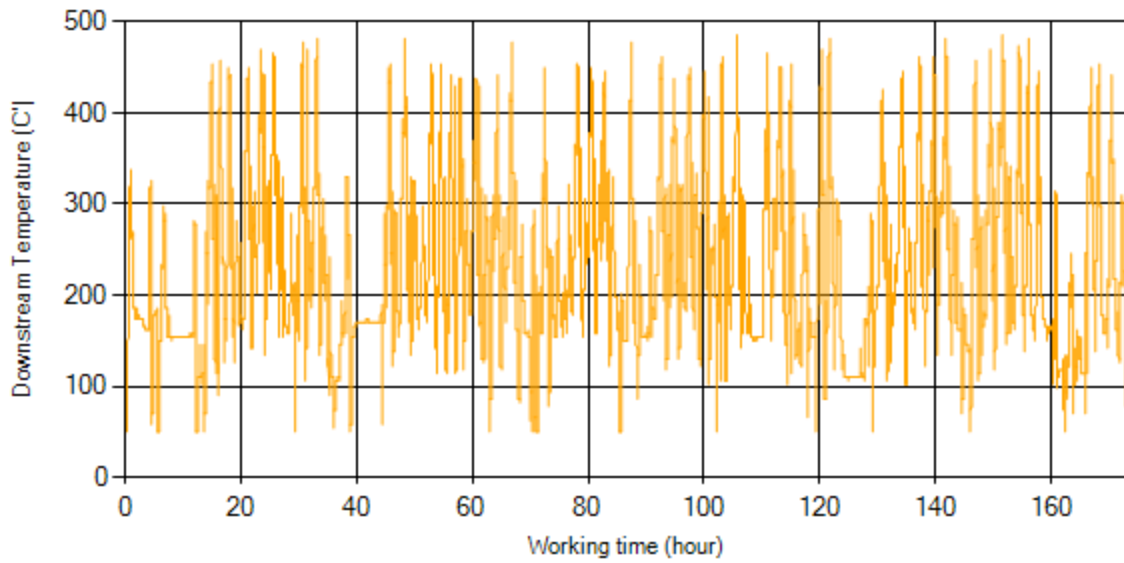


Figure 9- Temperature vs. working hours

Engine Speed Diagrams

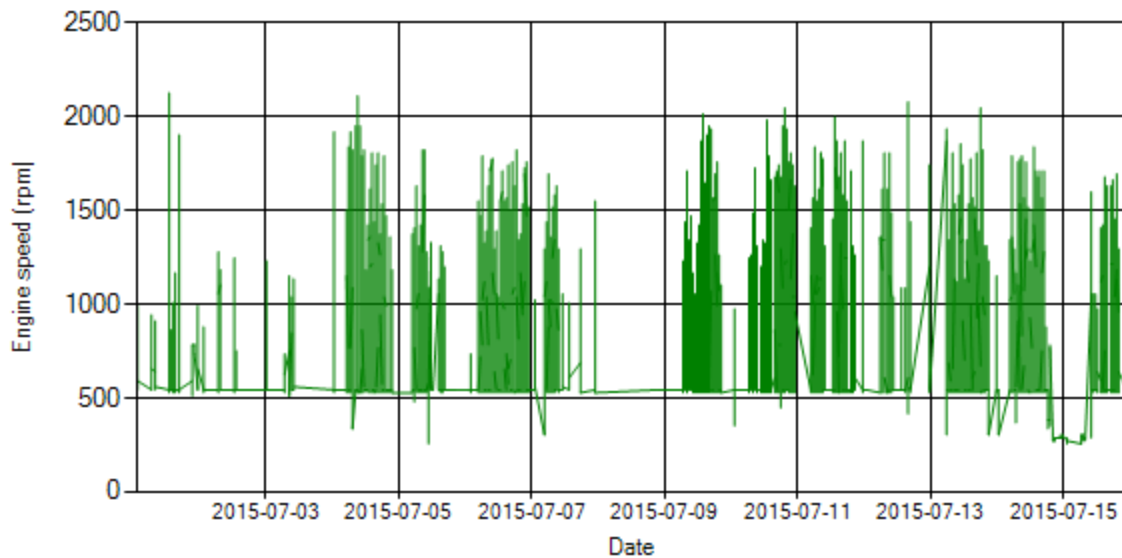


Figure 10- Engine speed distribution over the period

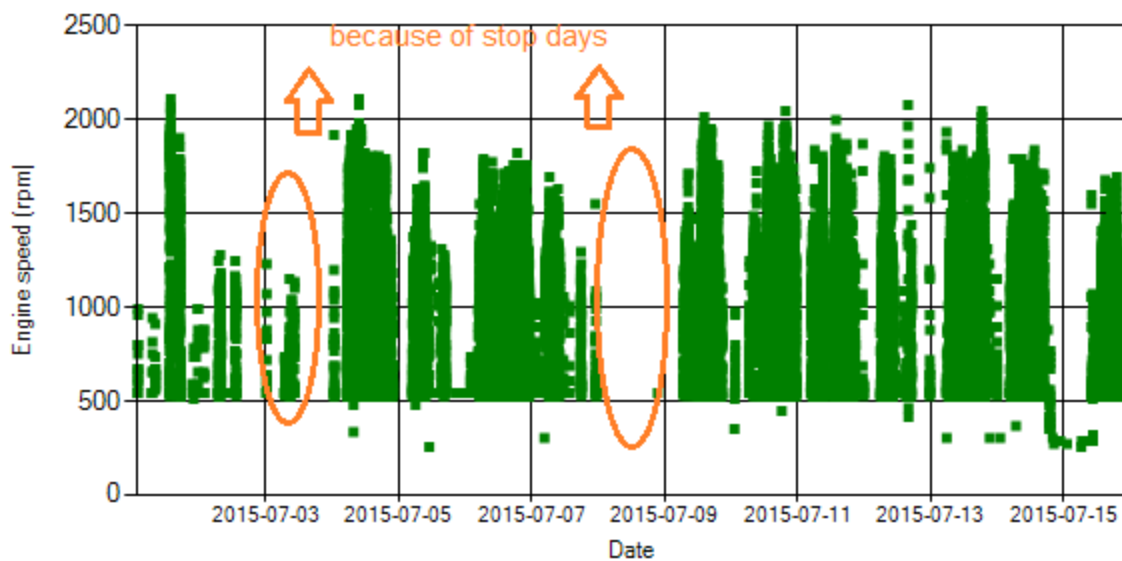


Figure 11- Engine speed diagram for calculating CPK's working days

Notice: Due to engine maintenance, idle working ratio was high on Jul 1st, 2nd and 3rd.

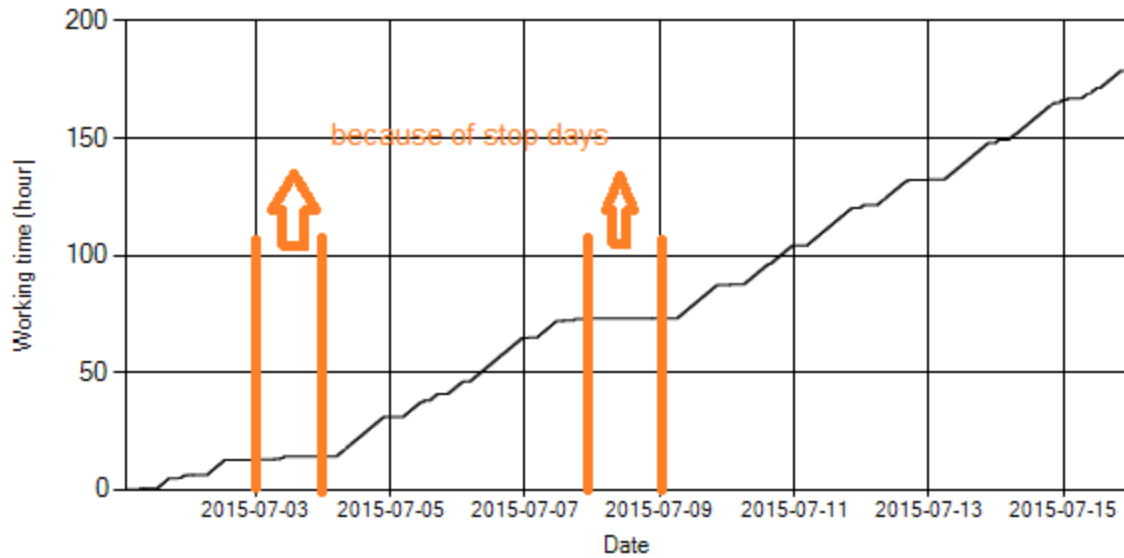


Figure 12- Time diagram for calculating CPK's working days

Notice: Data logger sampling time can be calculated from Figure 12. The lines parallel with Date axis show days without data logger data. As depicted in Figure 12, data logger didn't sample on Jul 3rd and 8th because of stop days.

Pressure-Engine Speed diagrams

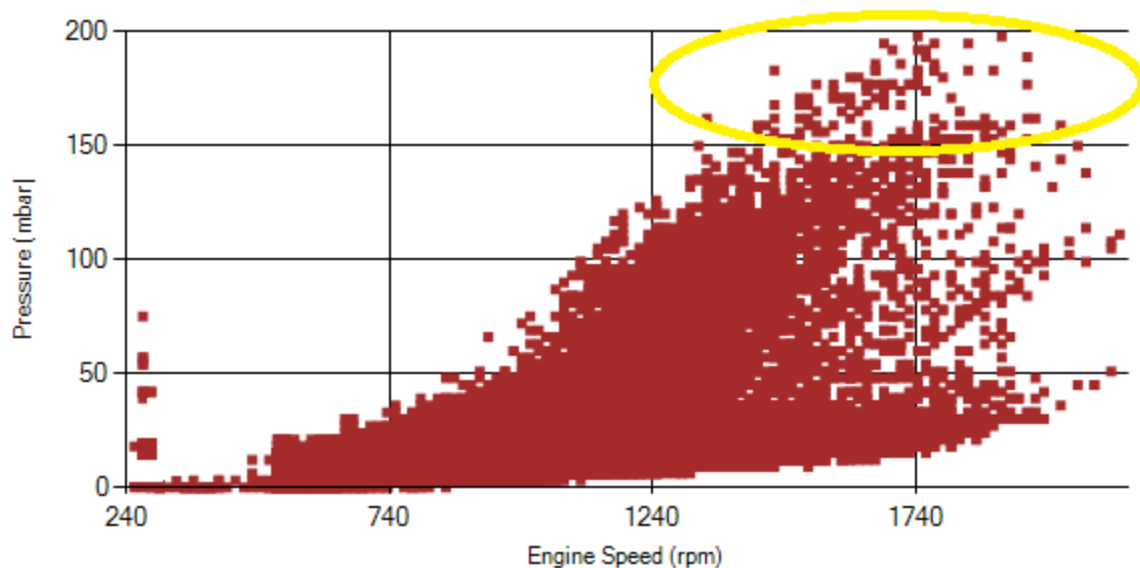


Figure 13- Pressure against engine speed

Notice: Yellow alarm ($200 > \text{pressure} > 150$) region was indicated in figure 13.

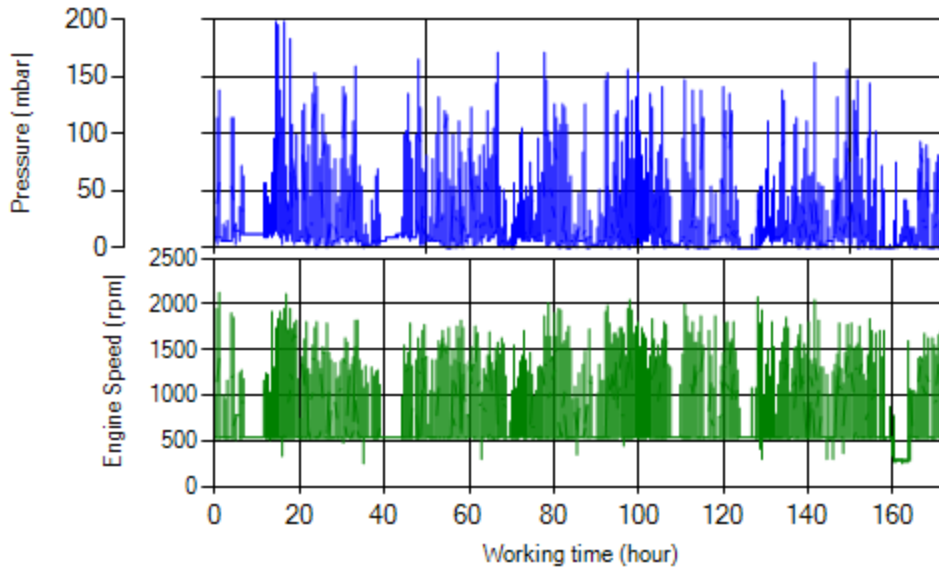


Figure 14- P, N distribution vs. working hours

Temperature-Engine Speed diagrams

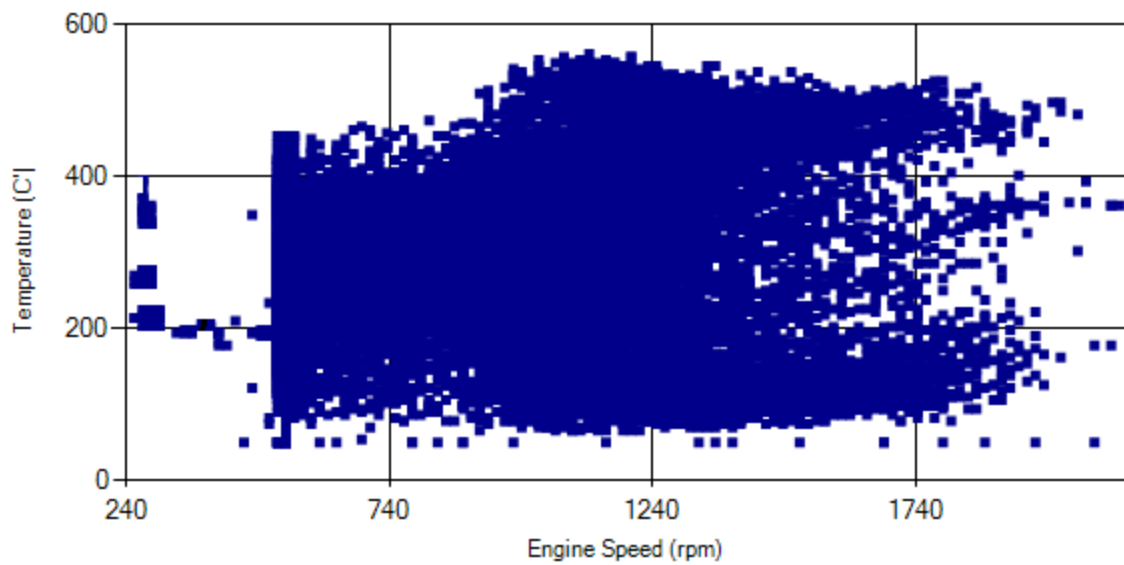


Figure 15- Temperature against engine speed

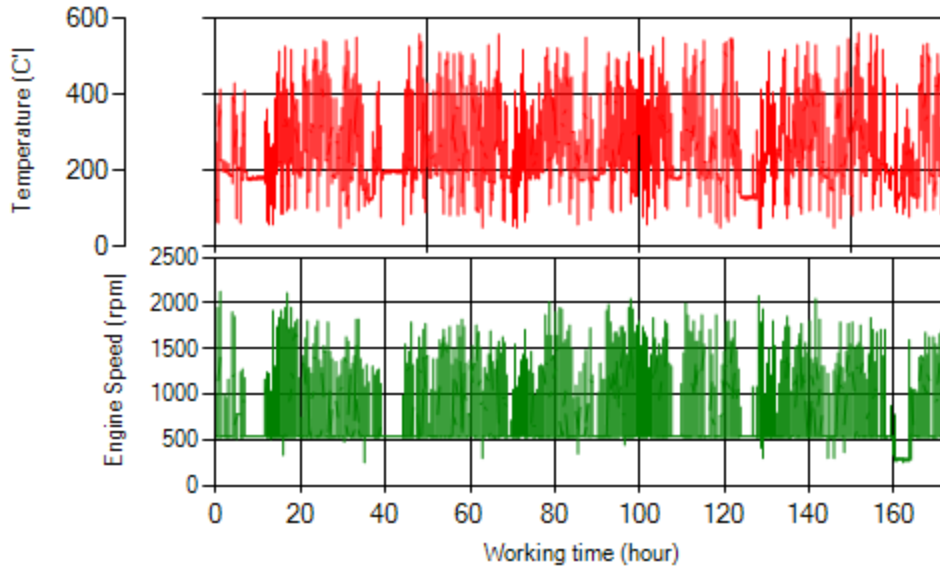


Figure 16- T, N distribution vs. working hours

Filter Operation Analysis

- As depicted in figure 1, pressure above 200 mbar can't be seen and only 0.25% above 150mbar.
- Figure 2 displays flow temperature distribution for DPF's upstream. It can be obviously observed that 11% of total working time, temperature is above 400 °C and 18% above 350°C.

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