

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	PURIttech (Passive system with FBC)
Installation date	28/Jan/2015
Report period	16/Nov/2015 – 30/Nov/2015 (fifteen days)
K value – DPF upstream	2.00 [1/m]
K value – DPF downstream	0.02 [1/m]

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.</p> <p>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>
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)	43765 km
Bus mileage over the period	1400 km
Working days over the period	11 days
Stop days	4 days
Data logger working days	11 days
Working hours over the period	124 hours 31 minutes
Average working hours per day (including stop days)	8 hours 18 minutes
Bus average speed	11.24 km/hr
idle speed time to all working time ration	58.05 %
Total Bus fuel consumption over the period	896 lit
Fuel consumption per hour	7.2 lit/hr
Average fuel consumption	0.64 lit/km
Total Bus additive consumption over the period	0.5 lit
Average additive consumption	357 cc/km
Additive consumption to fuel ration	558 cc/1000lit

Temperature, Pressure and Engine Speed Overview

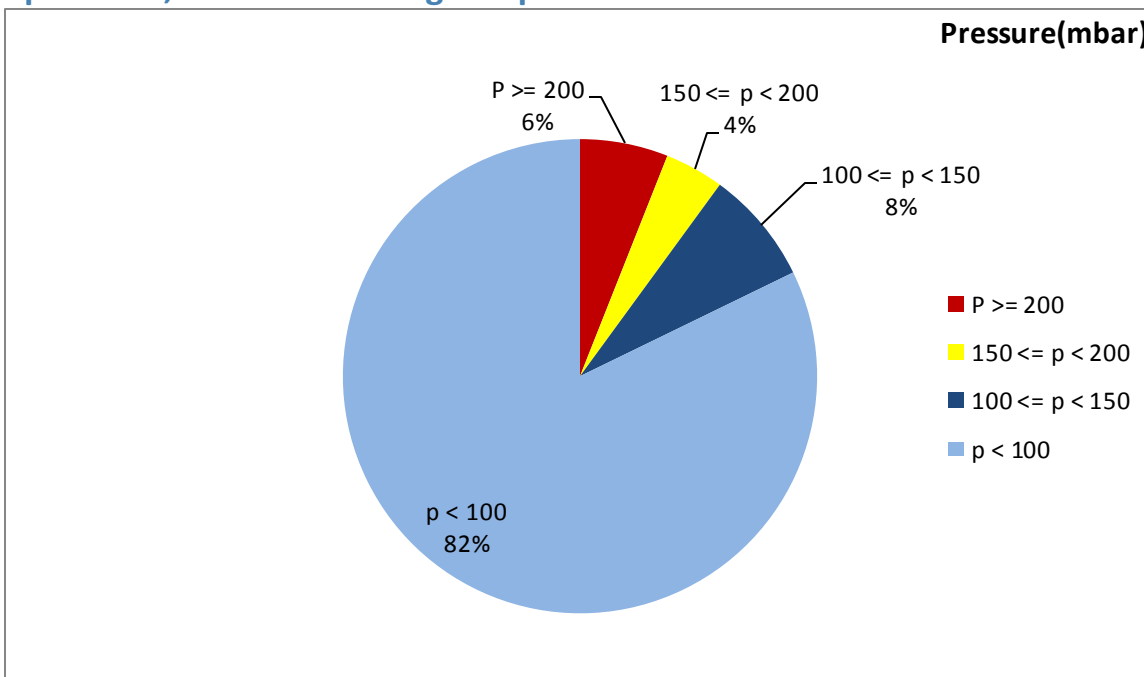


Figure 1- Pressure distribution over the working hours

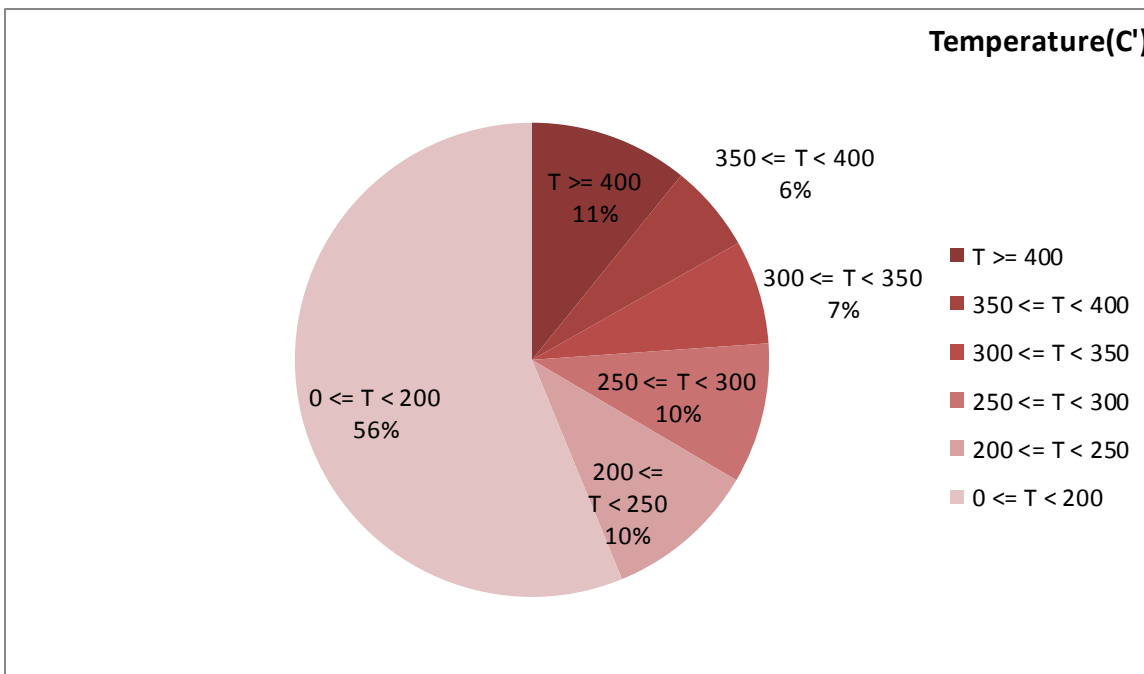


Figure 2-Temperature distribution over the working hours

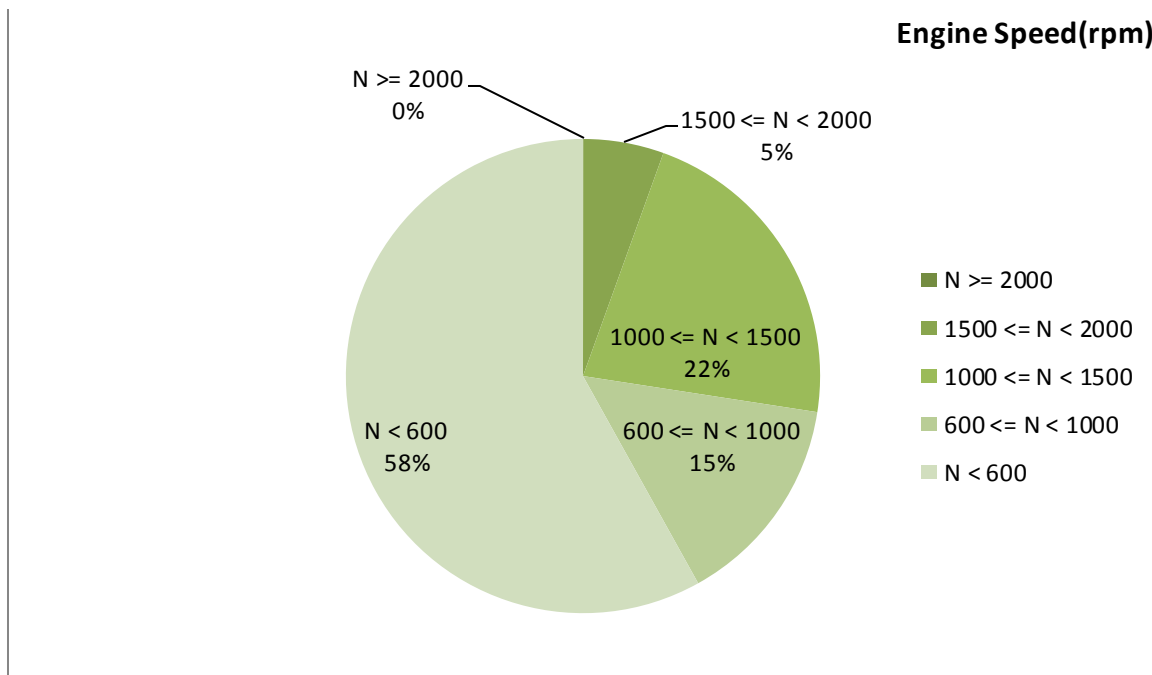


Figure 3- Engine speed distribution over the working hours

Table 4- Mean values

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
226.53	63.62	788

Table 5- Mean values without idling

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
313.81	113.32	1124

Table 6- Max-min values

Max-min temperature(C)	Max-min pressure(mbar)	Max-min engine speed(rpm)
694-50	615-0	2128-256

Detailed Pressure Analysis

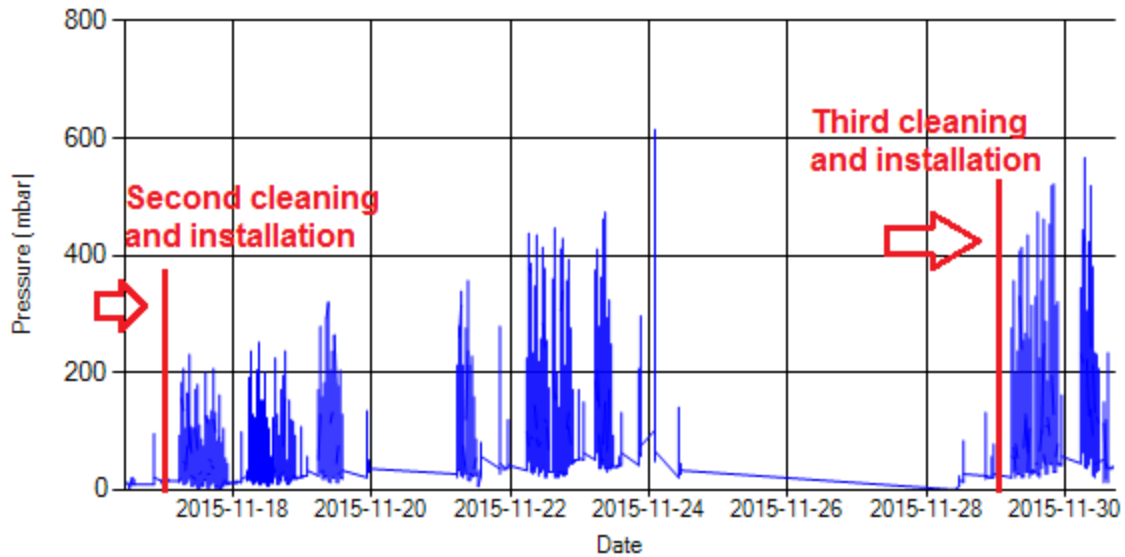


Figure 4- Pressure distribution over the period

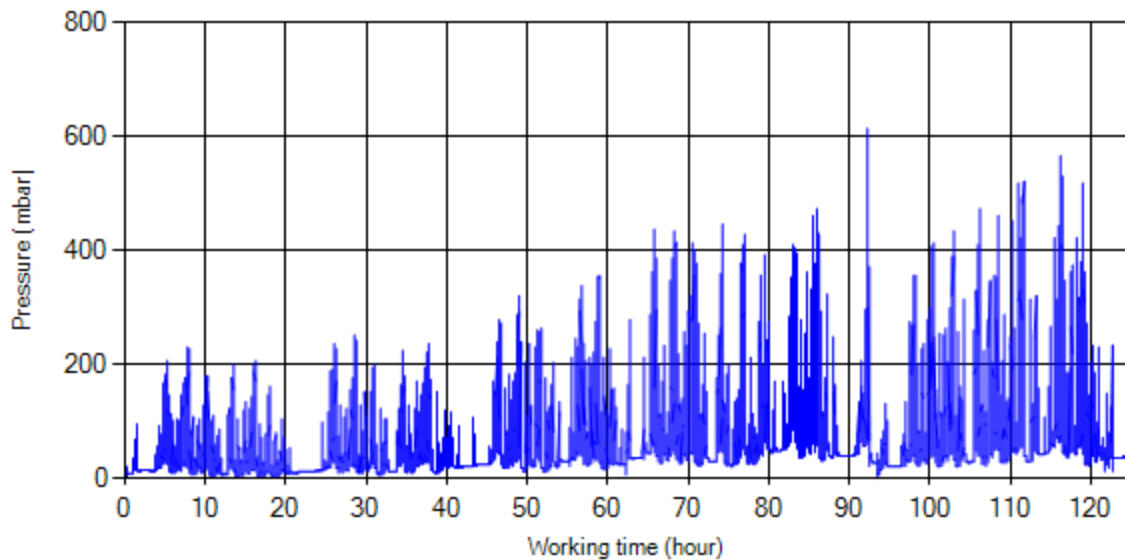


Figure 5- Pressure vs. working hours

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

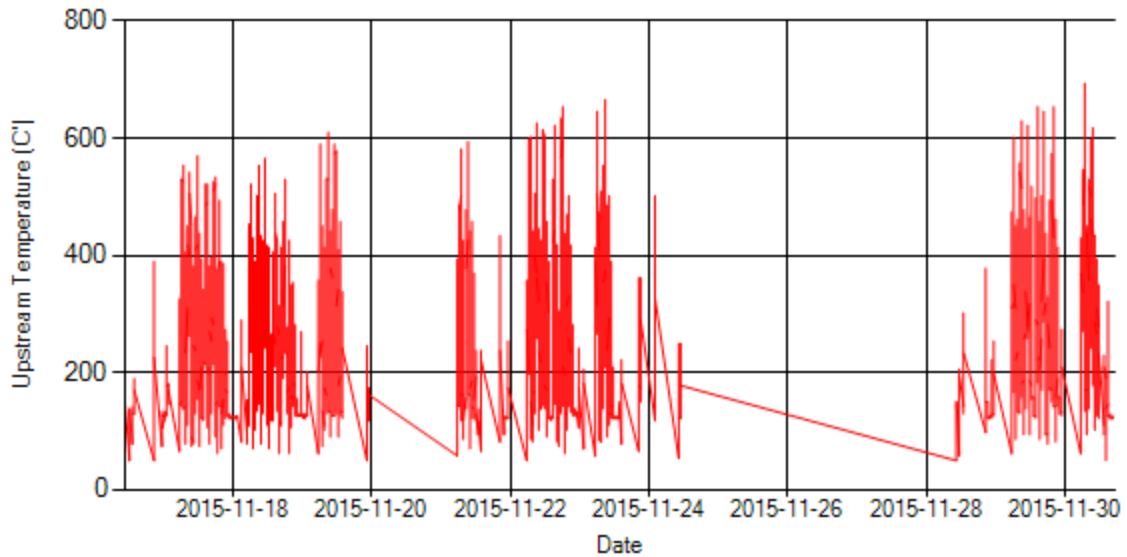


Figure 6- Temperature distribution over the period

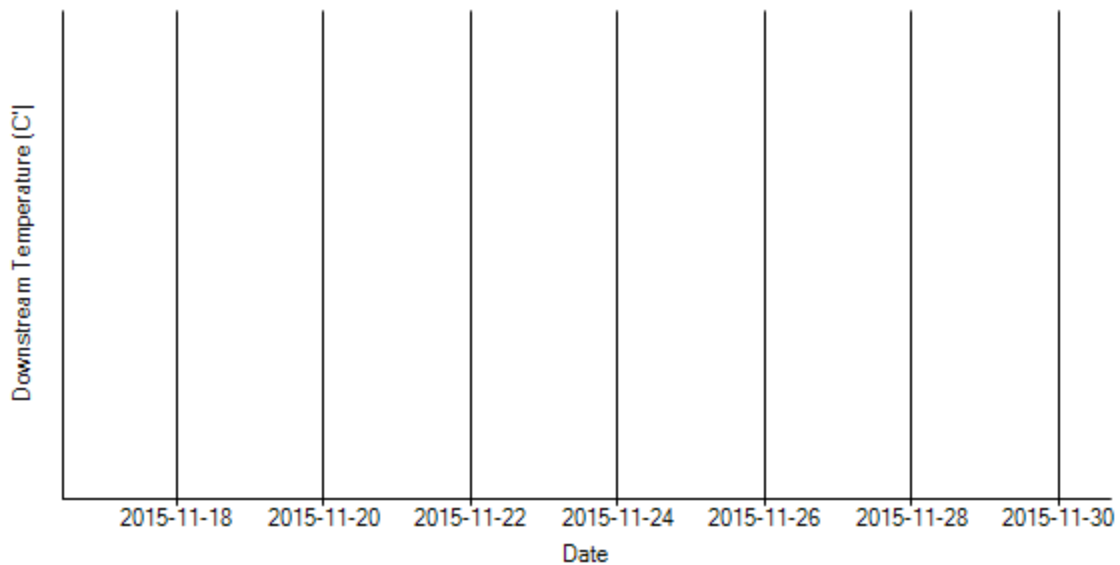


Figure 7- Temperature distribution over the period

Notice: Temp 2 sensor had problem during this period.

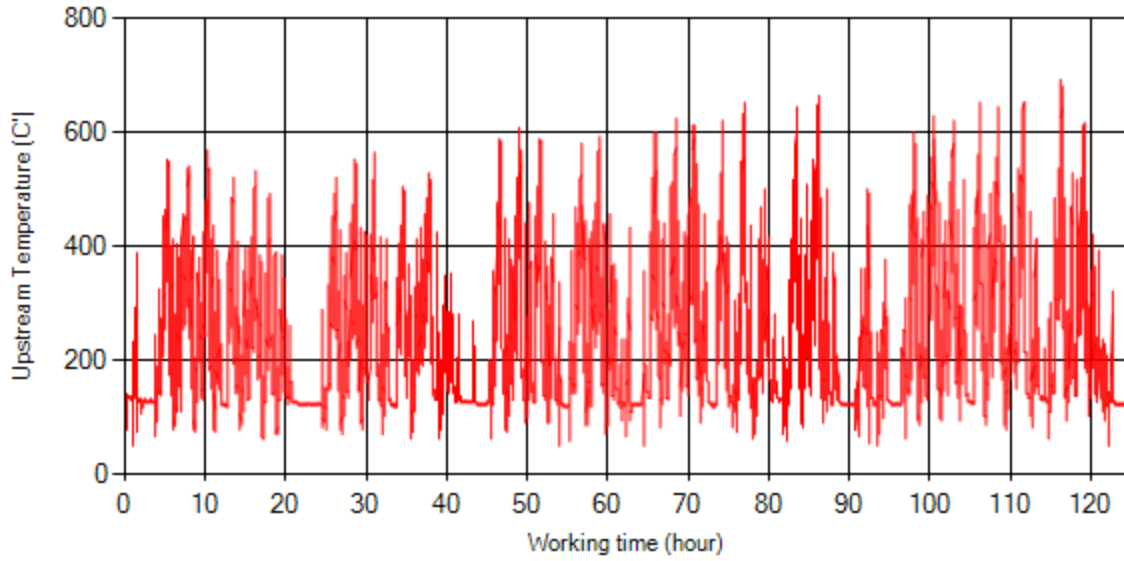


Figure 8- Temperature vs. working hours

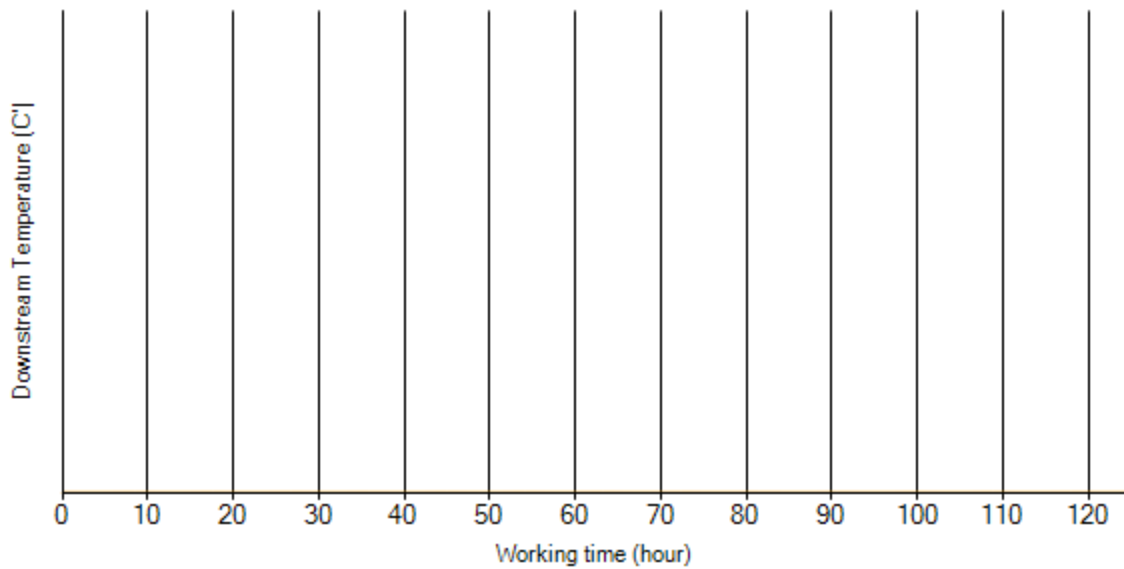


Figure 9- Temperature vs. working hours

Engine Speed Diagrams

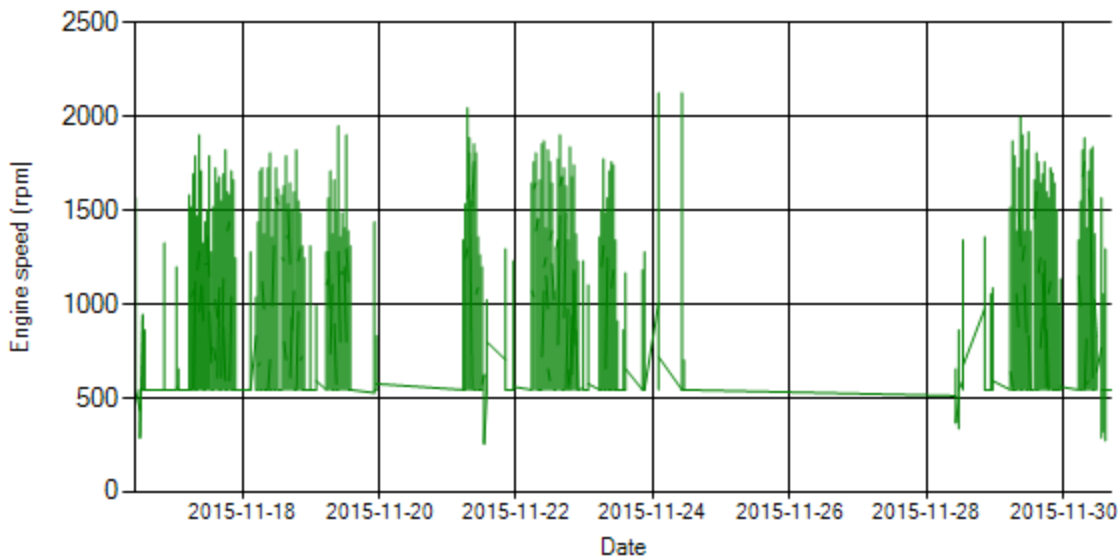


Figure 10- Engine speed distribution over the period

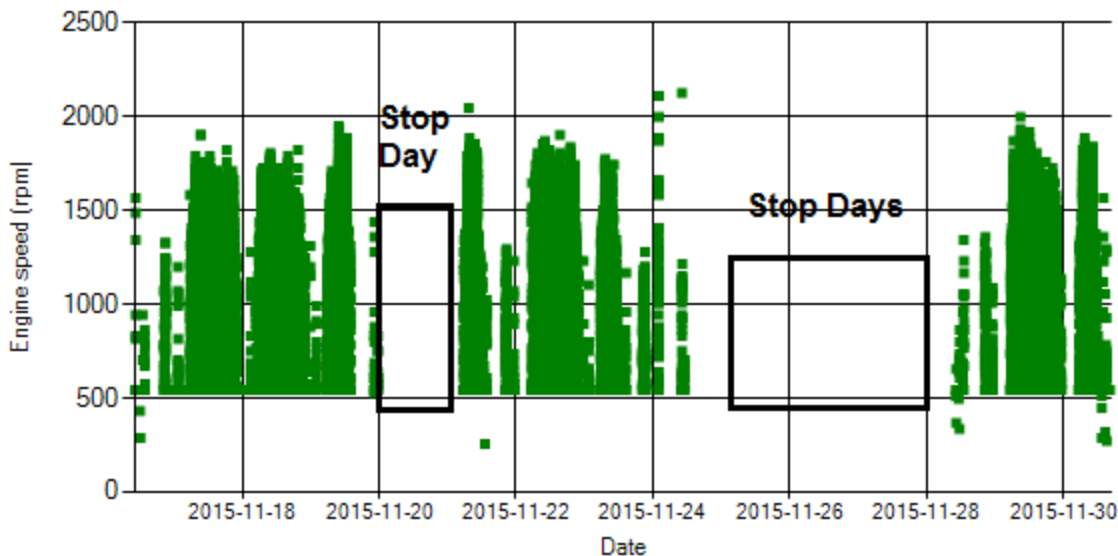


Figure 11- Engine speed diagram for calculating CPK's working days

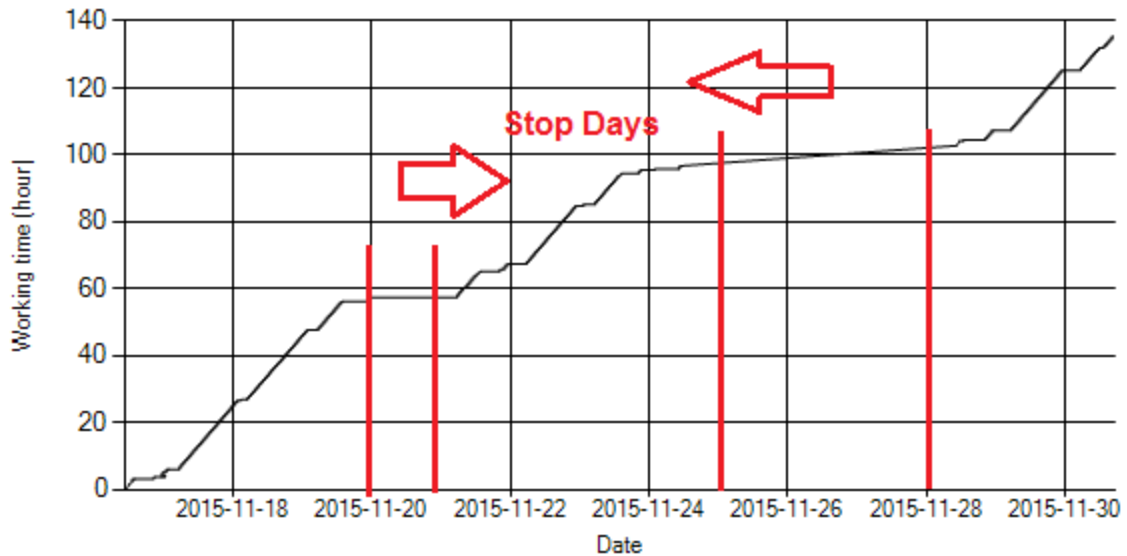


Figure 12- Time diagram for calculating CPK's working days

Notice: Data logger sampling time can be calculated from Figure 12. The lines parallel with Date axis show days without data logger data.

Pressure-Engine Speed diagrams

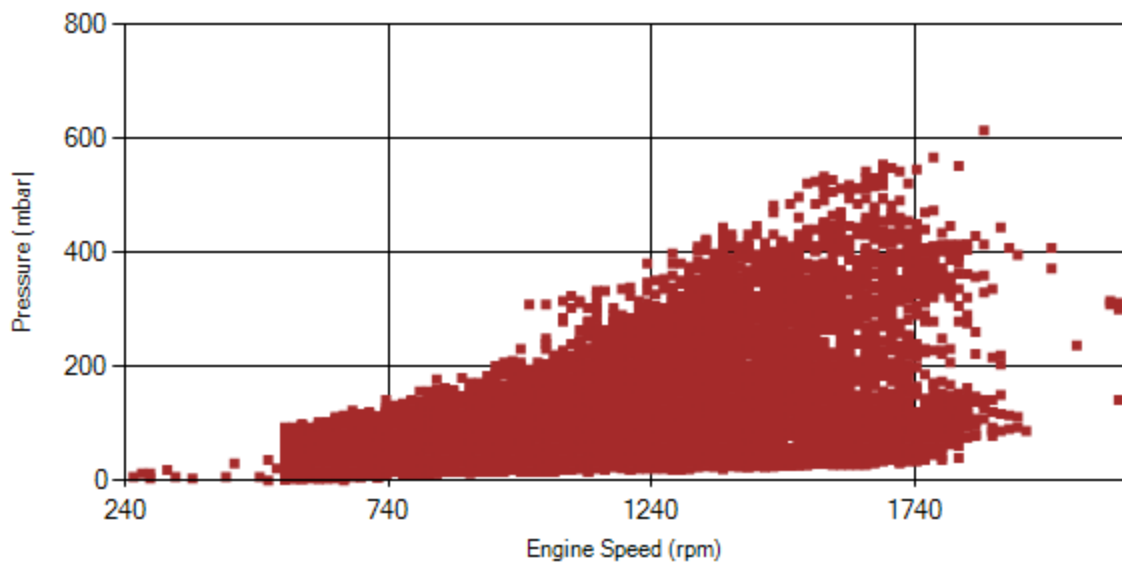


Figure 13- Pressure against engine speed

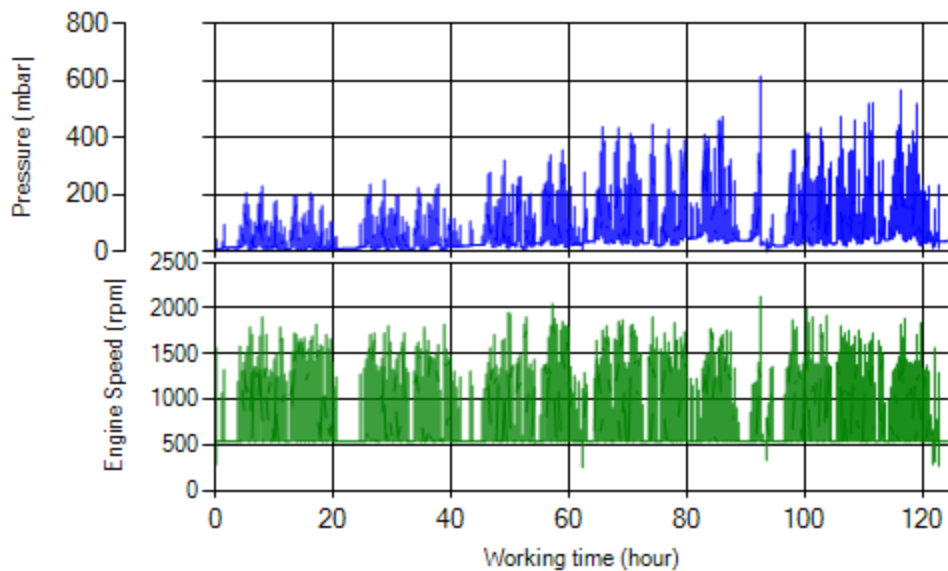


Figure 14- P, N distribution vs. working hours

Temperature-Engine Speed diagrams

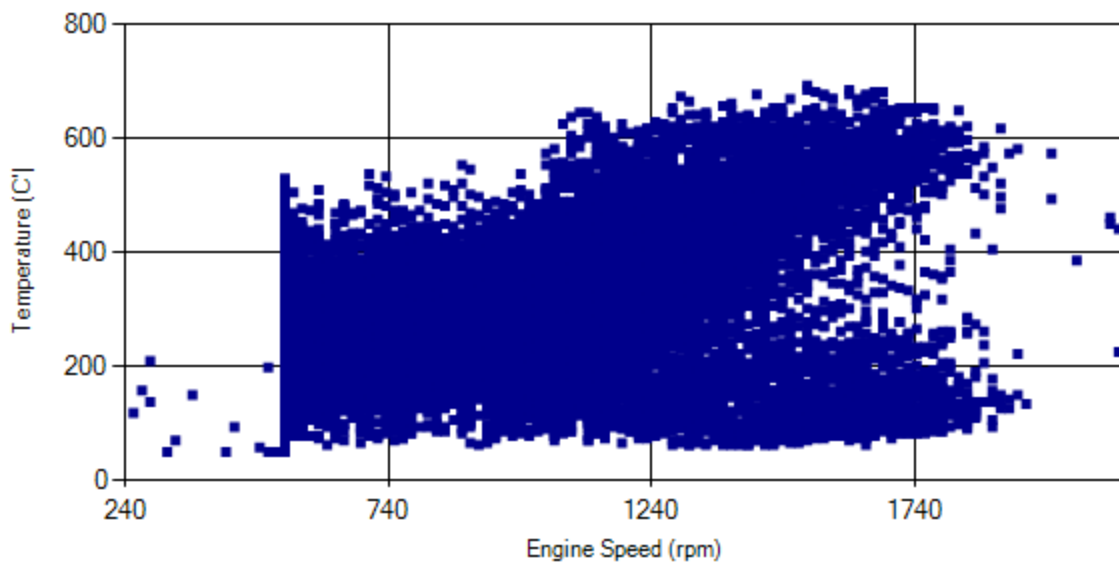


Figure 15- Temperature against engine speed

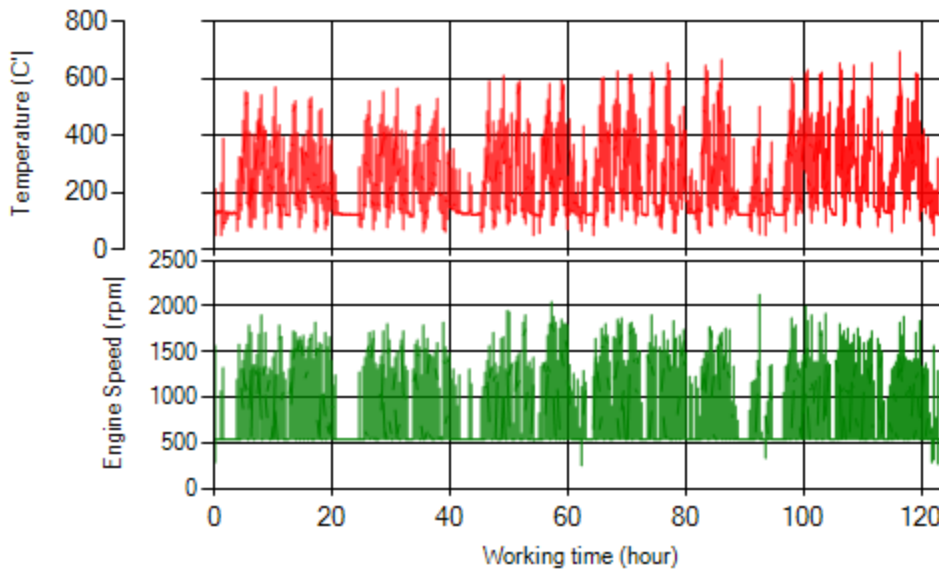


Figure 16- T, N distribution vs. working hours

Filter Operation Analysis

- As depicted in figure 1, 6% of working time pressure was above 200 mbar and only 10% 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 17% above 350°C.
- Two cleaning for 8 days working was unacceptable for this DPF operation.

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