

## Overall Information

*Table1- Overall Information*

Vehicle plate number	85476
CPK data logger number	LN: 001508, DN: 2003, Sim +989218469624
Bus line	Number 10 (south to north Bus line)
Bus Terminals	Azadi square - Daneshgah square
Total path distance	10.7 km
DPF producer company	HJS_04 (Passive system with FBC)
Installation date	23/Feb/2015
Report period	01/Nov/2015 – 15/Nov/2015 (fifteen days)
K value - DPF upstream	1.90 [1/m]
K value – DPF downstream	0.04 [1/m]

*Table 2- DPF Maintenance History*

Filter maintenance date	DPF was cleaned on 22 <sup>nd</sup> Jul.
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)	40340 km
Bus mileage over the period	2127 km
Working days over the period	15 days
Stop days	0 days
Data logger working days	8 days
Working hours over the period	-
Average working hours per day (including stop days)	-
Bus average speed	-km/hr
idle speed time to all working time ration	57.91 %
Total Bus fuel consumption over the period	1350 lit
Fuel consumption per hour	-lit/hr
Average fuel consumption	0.63 lit/km
Total Bus additive consumption over the period	0.55 lit
Average additive consumption	259 cc/km
Additive consumption to fuel ration	407 cc/1000lit

Notice: Due to data logger problem, 7 working days' data was missed (got problem on Nov 2<sup>nd</sup> and was fixed on Nov 8<sup>th</sup>). So some parameters like working hours and its related parameters were left blank.

## Temperature, Pressure and Engine Speed Overview

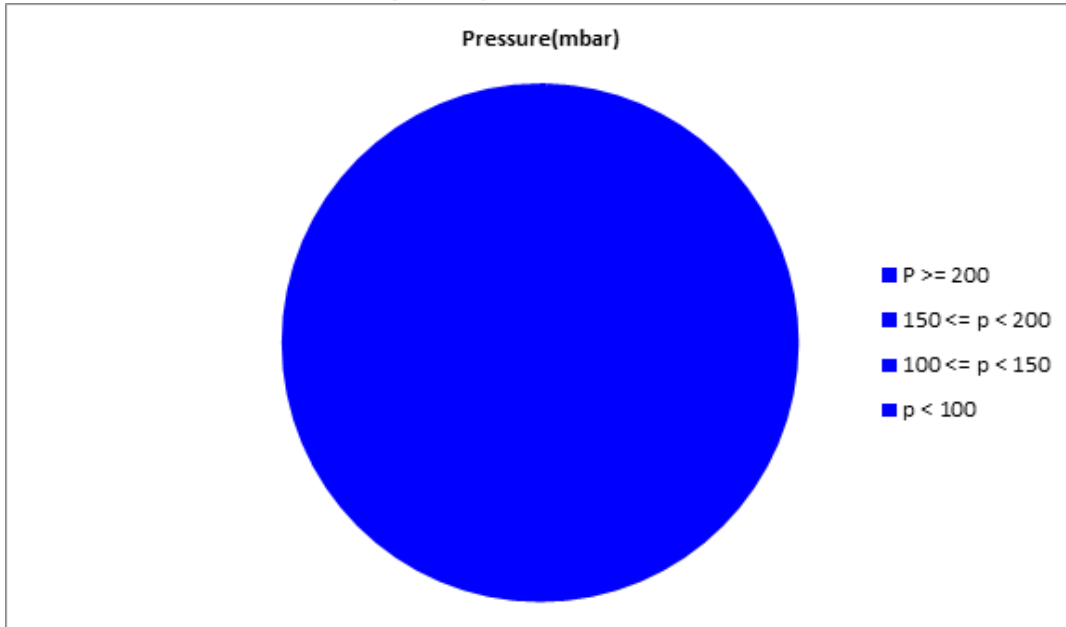


Figure 1- Pressure distribution over the working hours

Notice: Pressure sensor got problem on Nov 11th and was not fixed until the end of this period. Considering this problem besides data logger problem, pressure pie diagram was left blank due to data leakage.

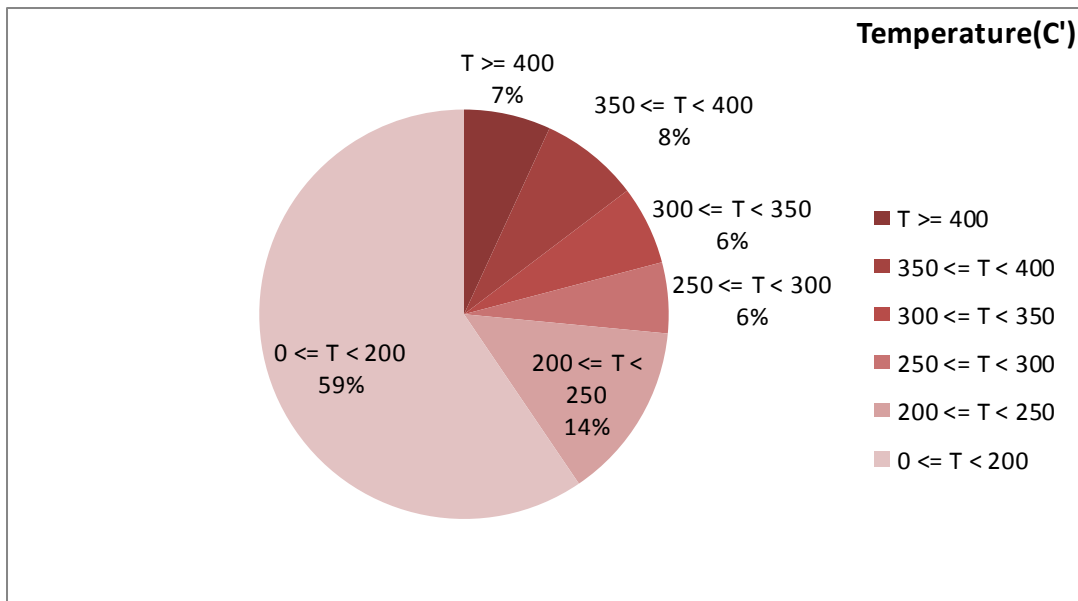


Figure 2-Temperature distribution over the working hours

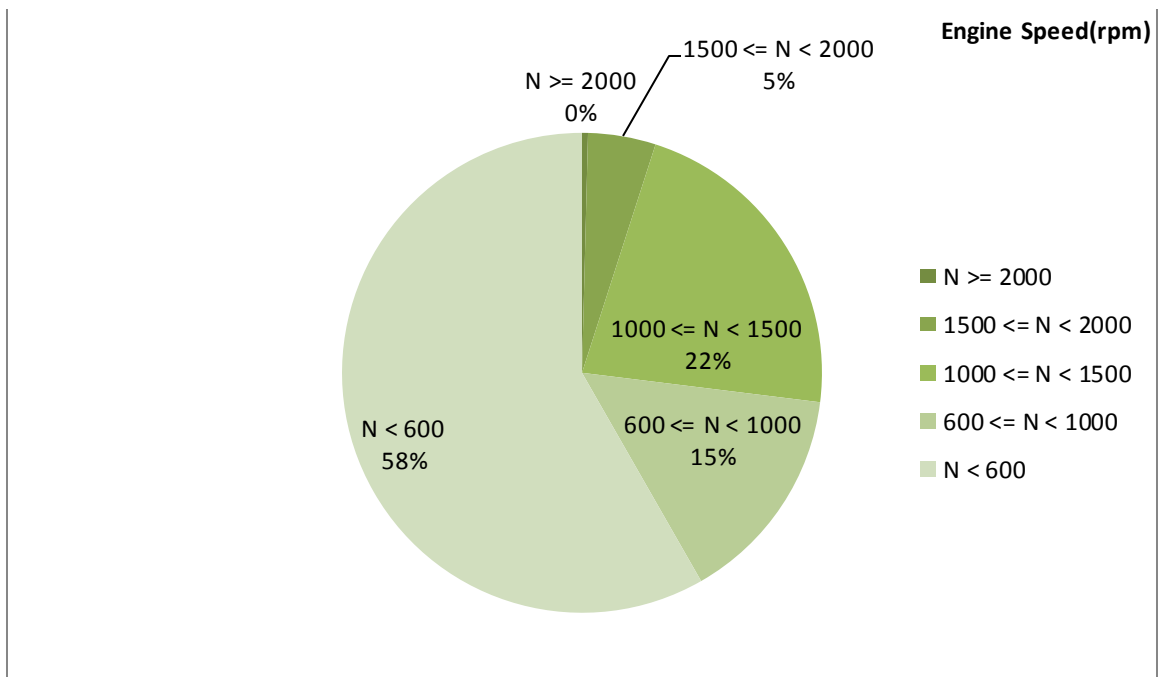


Figure 3- Engine speed distribution over the working hours

Table 4- Mean values

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
215.38	-	798

Table 5- Mean values without idling

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
263.94	-	1111

Table 6- Max-min values

Max-min temperature(C)	Max-min pressure(mbar)	Max-min engine speed(rpm)
510-54	-	2384-336

Notice: pressure values were left blank due to data leakage.

## Detailed Pressure Analysis

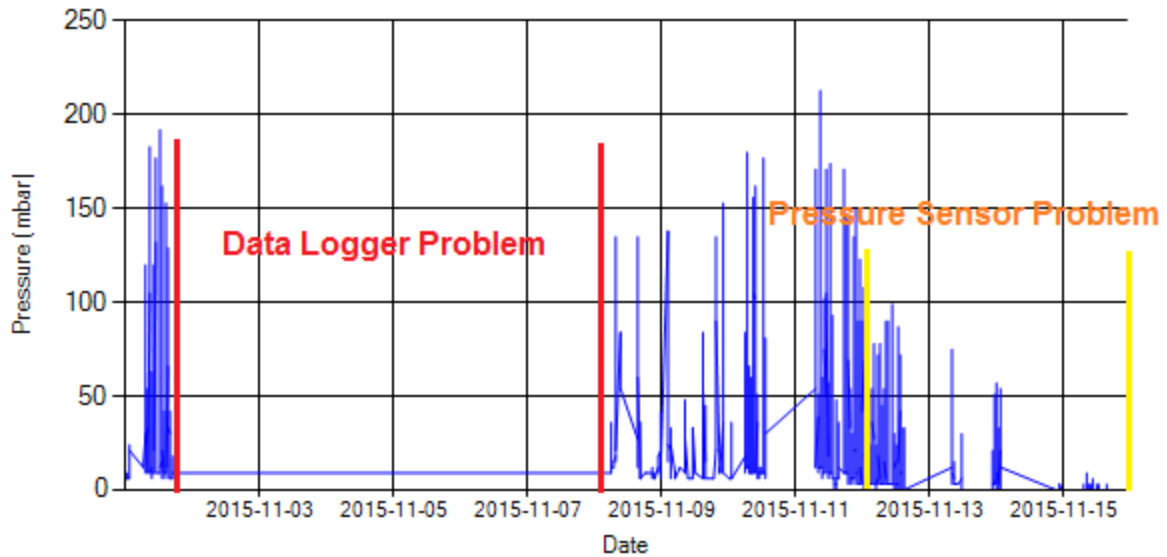


Figure 4- Pressure distribution over the period

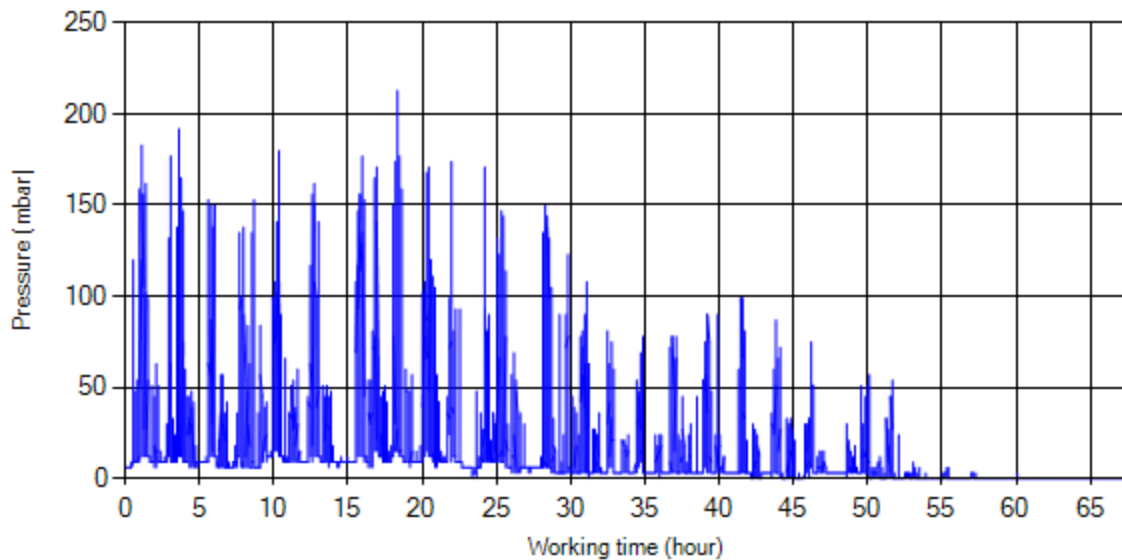


Figure 5- Pressure vs. working hours

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

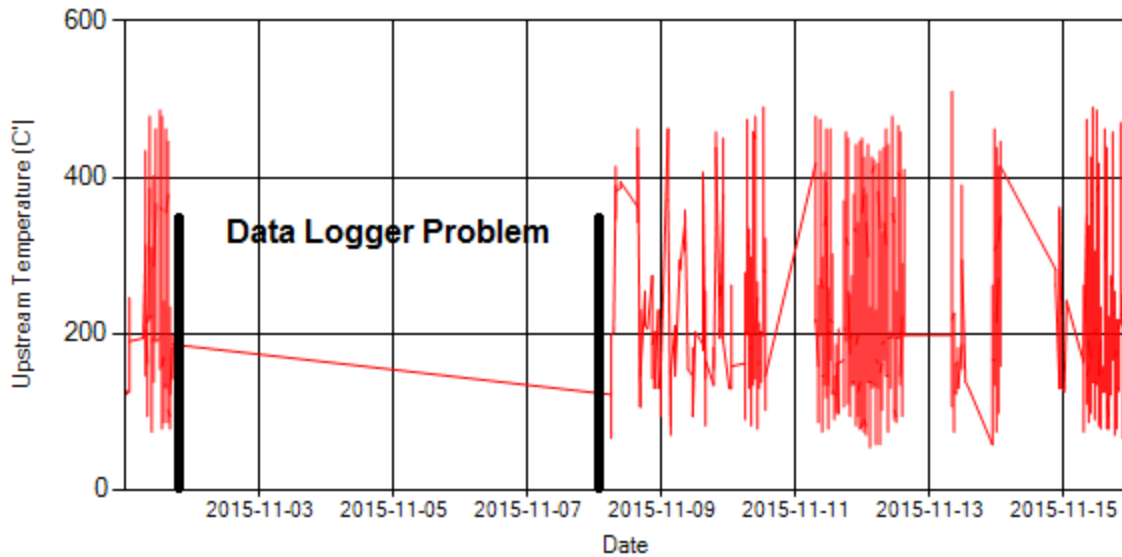


Figure 6- Temperature distribution over the period

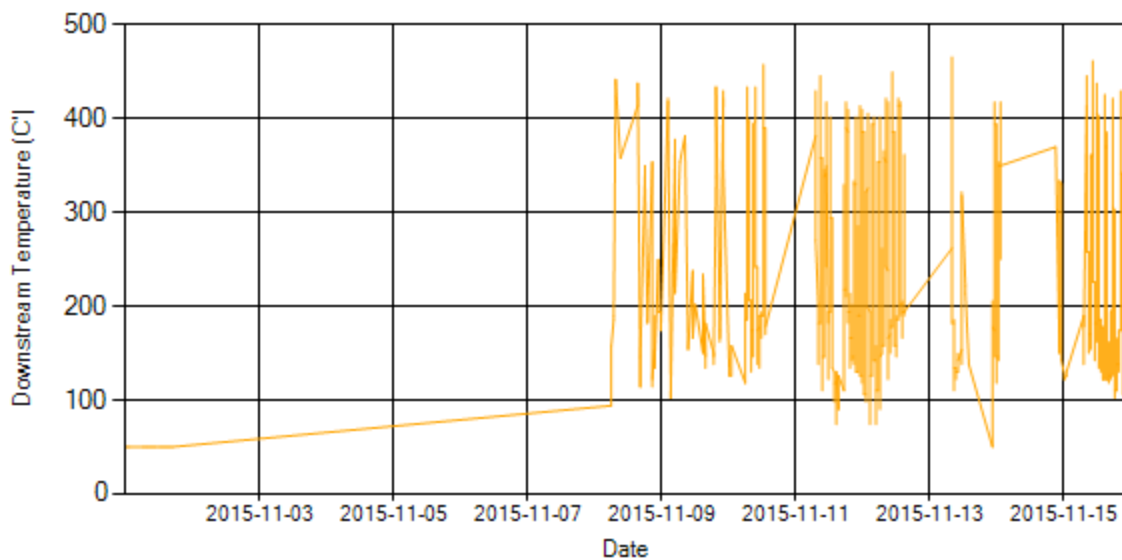


Figure 7- Temperature distribution over the period

Notice: Temp 2 sensor was installed on Nov 8<sup>th</sup>.

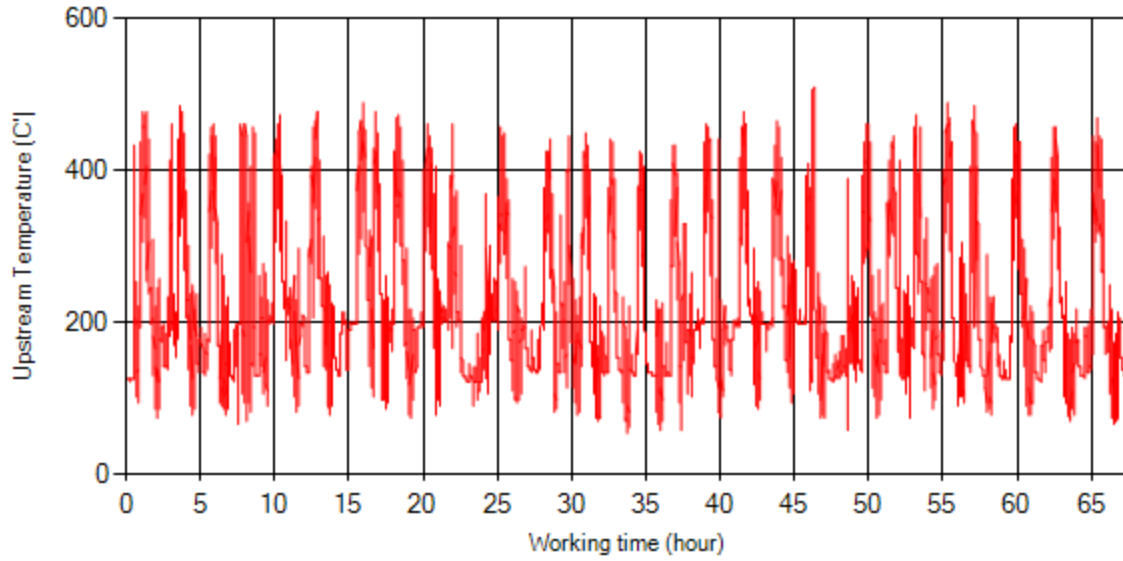


Figure 8- Temperature vs. working hours

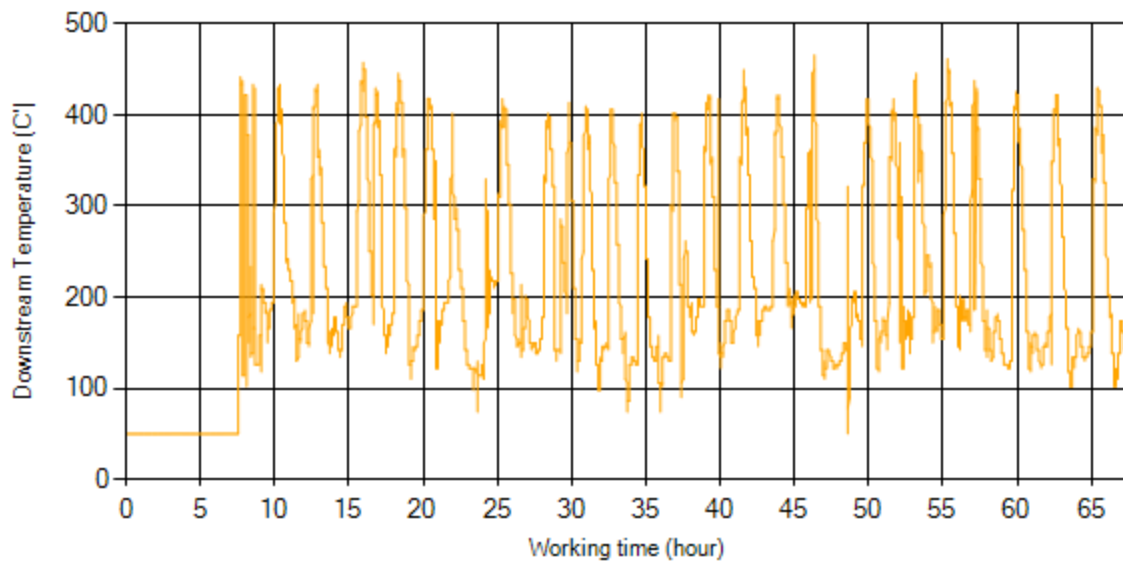


Figure 9- Temperature vs. working hours

## Engine Speed Diagrams

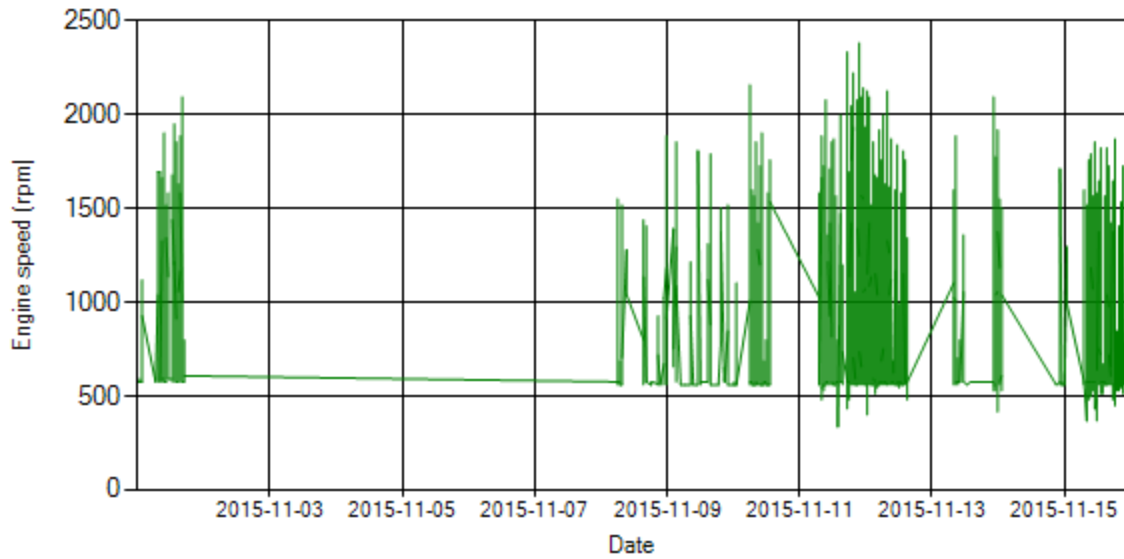


Figure 10- Engine speed distribution over the period

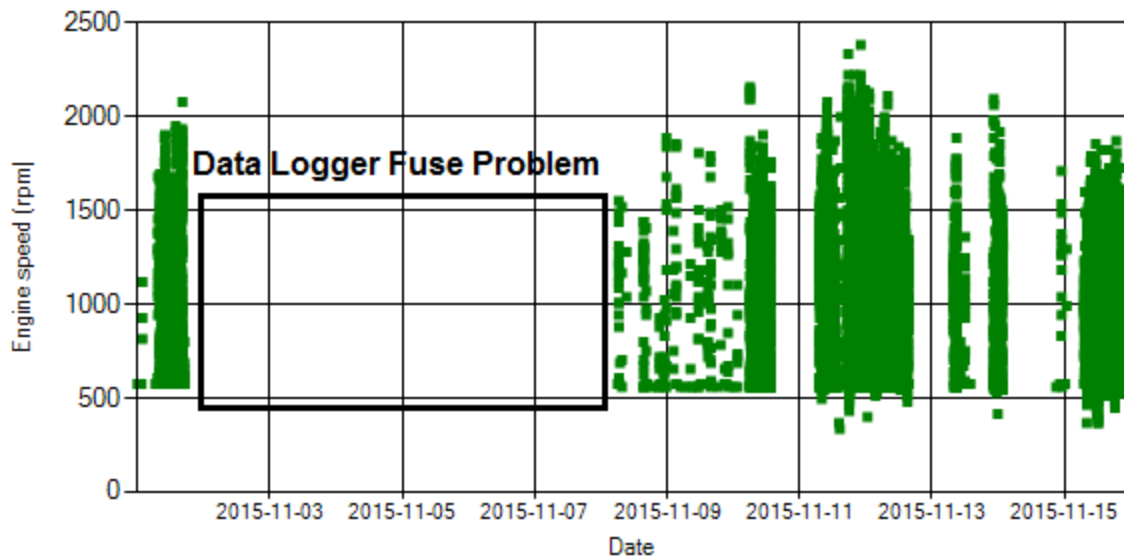


Figure 11- Engine speed diagram for calculating CPK's working days



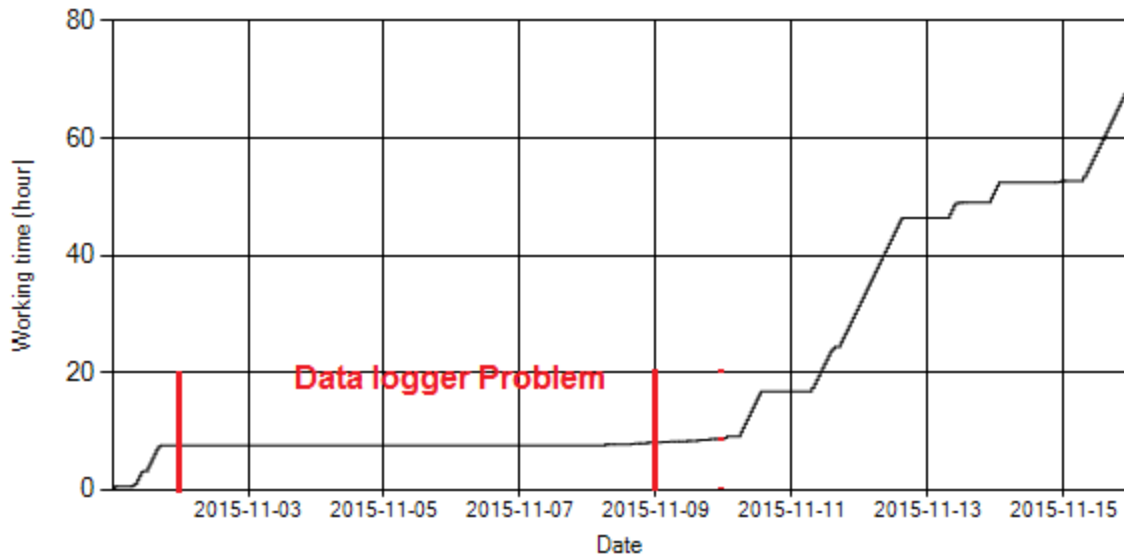


Figure 12- Time diagram for calculating CPK's working days

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

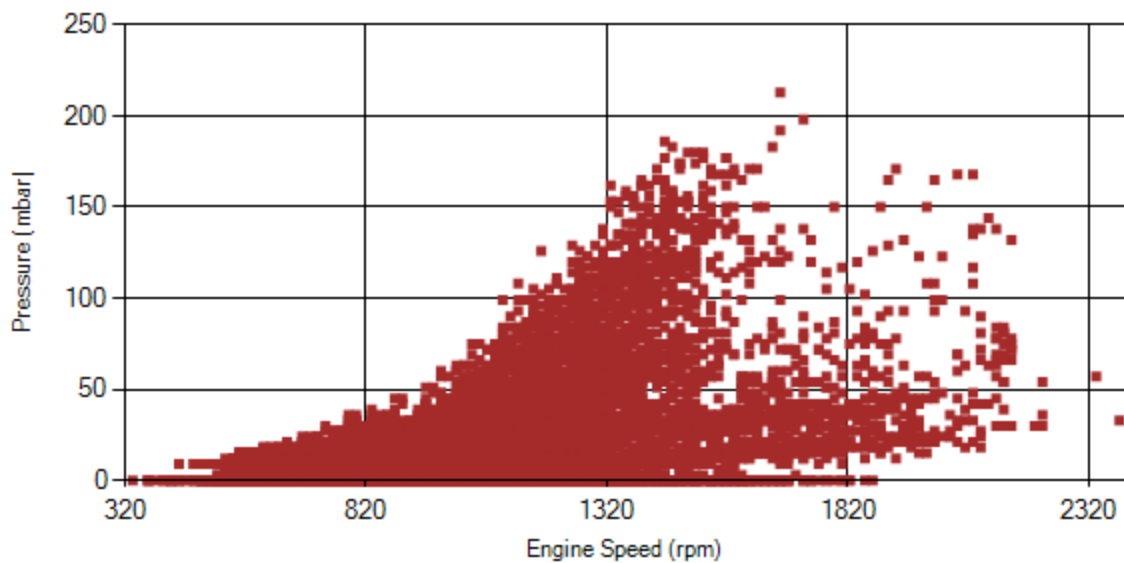


Figure 13- Pressure against engine speed

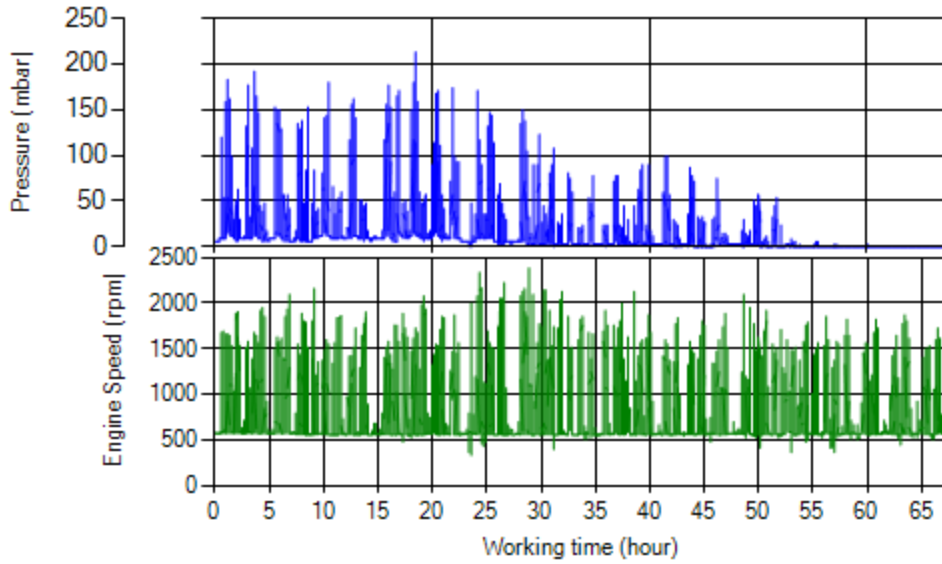


Figure 14- P, N distribution vs. working hours

### Temperature-Engine Speed diagrams

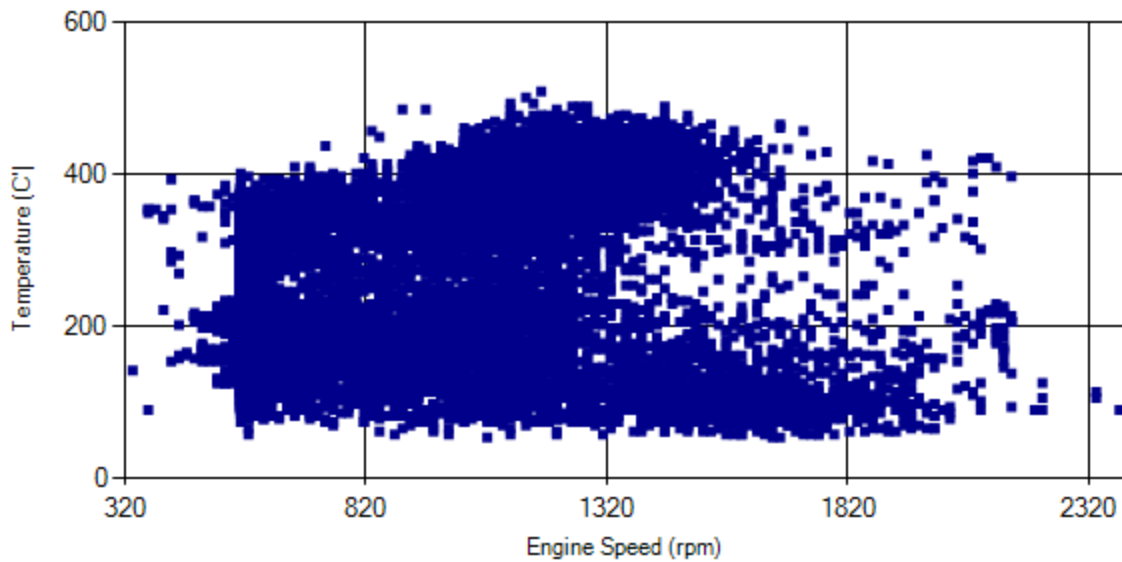


Figure 15- Temperature against engine speed

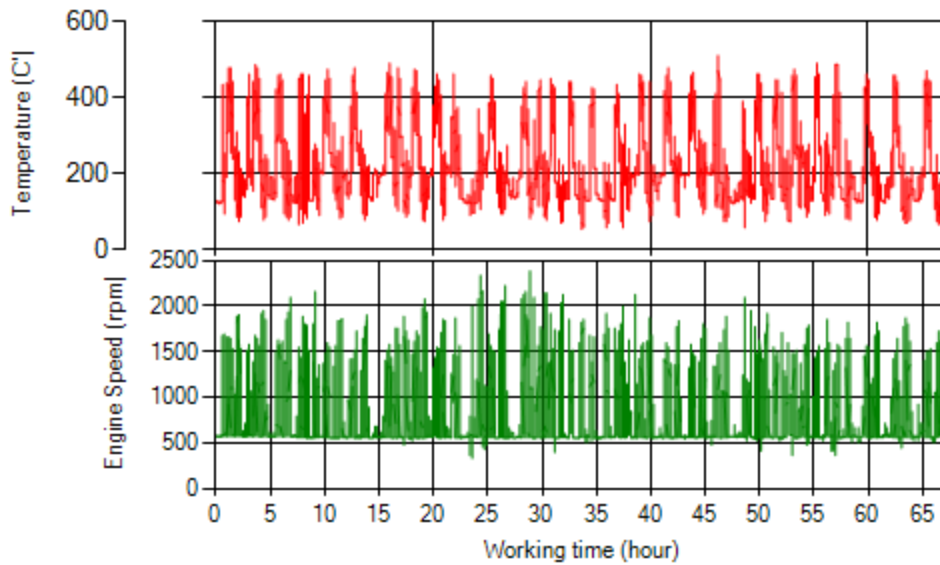


Figure 16- T, N distribution vs. working hours

### Filter Operation Analysis

- As depicted in figure 1, there wasn't enough data to evaluate DPF operation status exactly because of pressure sensor and data logger problem (**excellent or good**).
- it can be obviously observed that 7% of total working-time temperature is above 400 °C and 15% above 350°C.

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