

## 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	016/Aug/2015 – 31/Aug/2015 (sixteen 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 by 70% on March February 15 <sup>th</sup> . ( Secondary value/Initial value=0.3)

*Table 3- Fuel and Additive Consumption Information*

Bus mileage (from DPF installation date)	46047 km
Bus mileage over the period	3092 km
Working days over the period	15 days
Stop days	1 day
Data logger working days	15 days
Working hours over the period	208 hours 15 minutes
Average working hours per day (including stop days)	13 hours 1 minutes
Bus average speed	14.85 km/hr
idle speed time to all working time ration	53.91 %
Total Bus fuel consumption over the period	2000 lit
Fuel consumption per hour	9.6 lit/hr
Average fuel consumption	0.65 lit/km
Total Bus additive consumption over the period	0.51 lit
Average additive consumption	164 cc/km
Additive consumption to fuel ration	255 cc per 1000 lit (continuous dosing)

## Temperature, Pressure and Engine Speed Overview

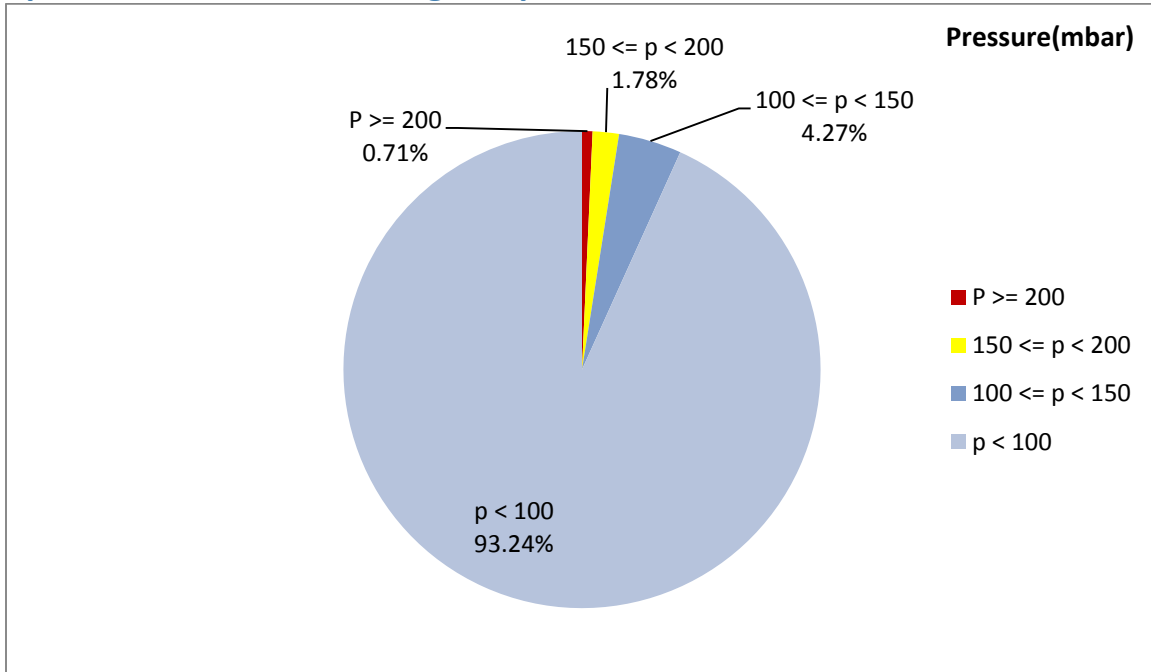


Figure 1- Pressure distribution over the working hours

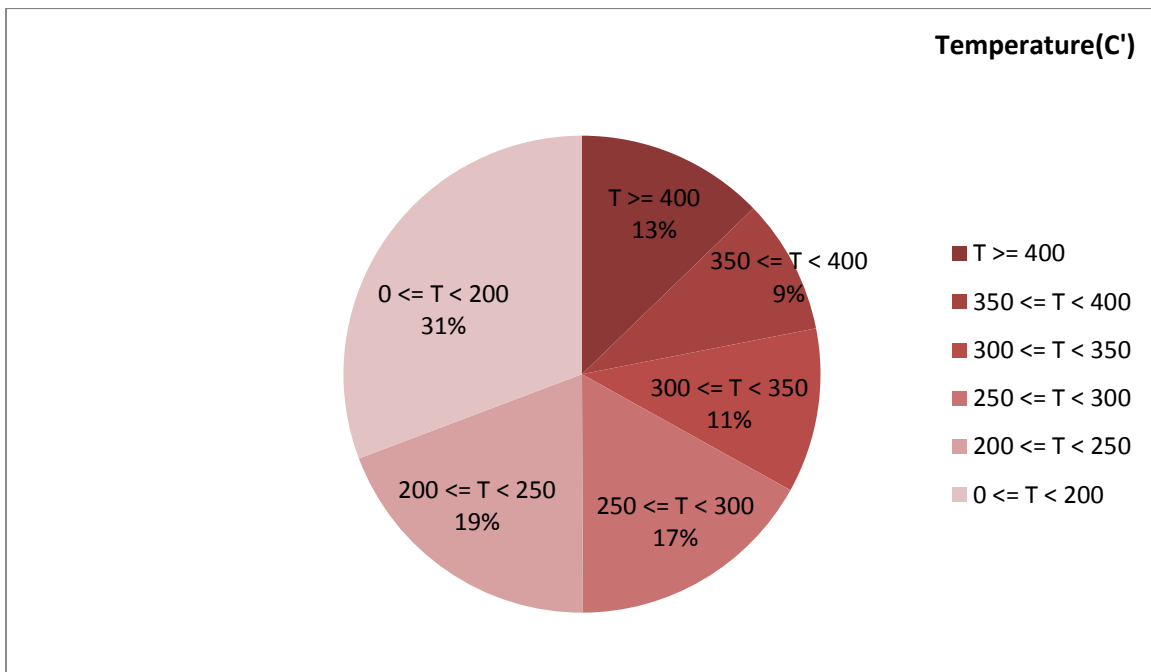


Figure 2-Temperature distribution over the working hours

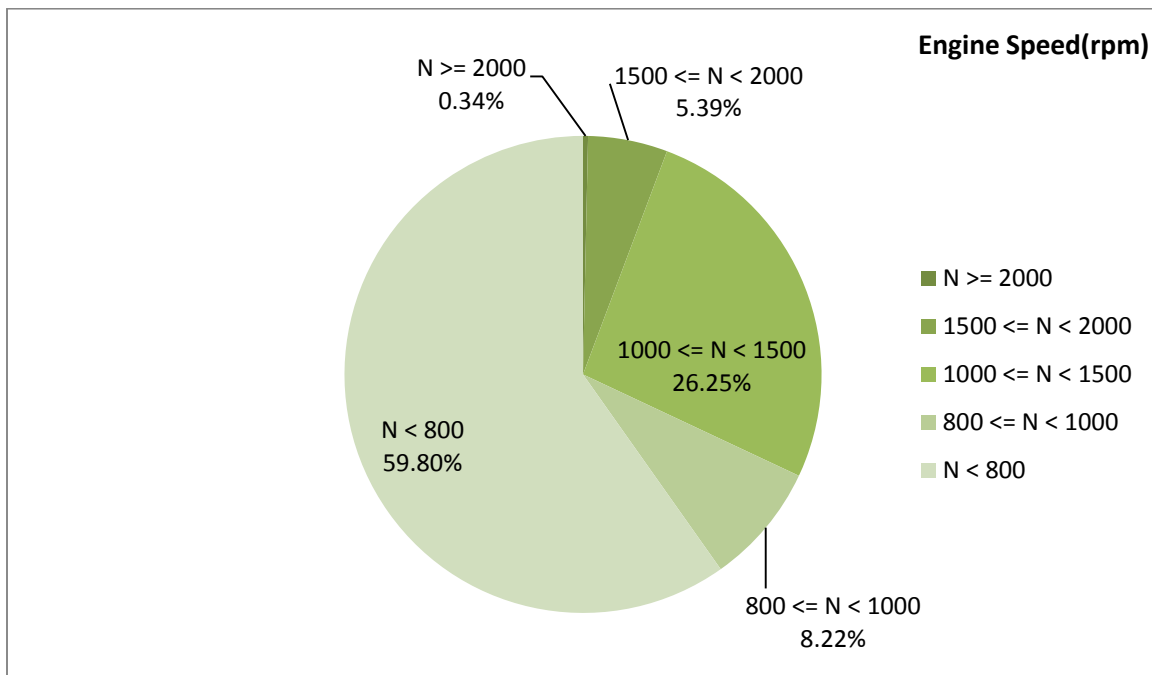


Figure 3- Engine speed distribution over the working hours

Table 4- Mean values

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
269.42	30.16	825

Table 5- Mean values without idling

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
323.75	54.07	1146

Table 6- Max-min values

Max-min temperature(C)	Max-min pressure(mbar)	Max-min engine speed(rpm)
574-50	285-0	2352-512

### Detailed Pressure Analysis

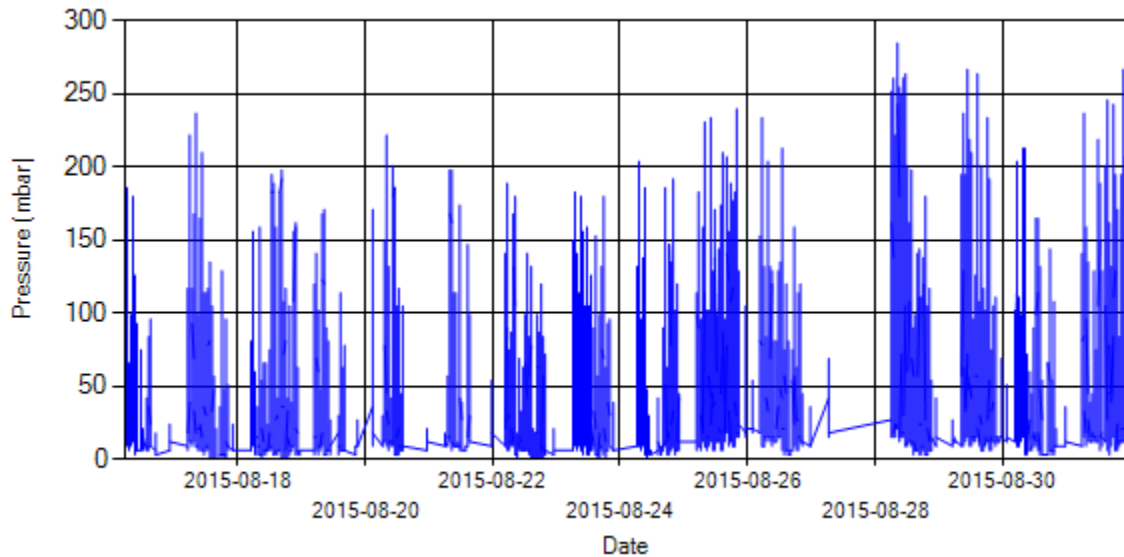


Figure 4- Pressure distribution over the period

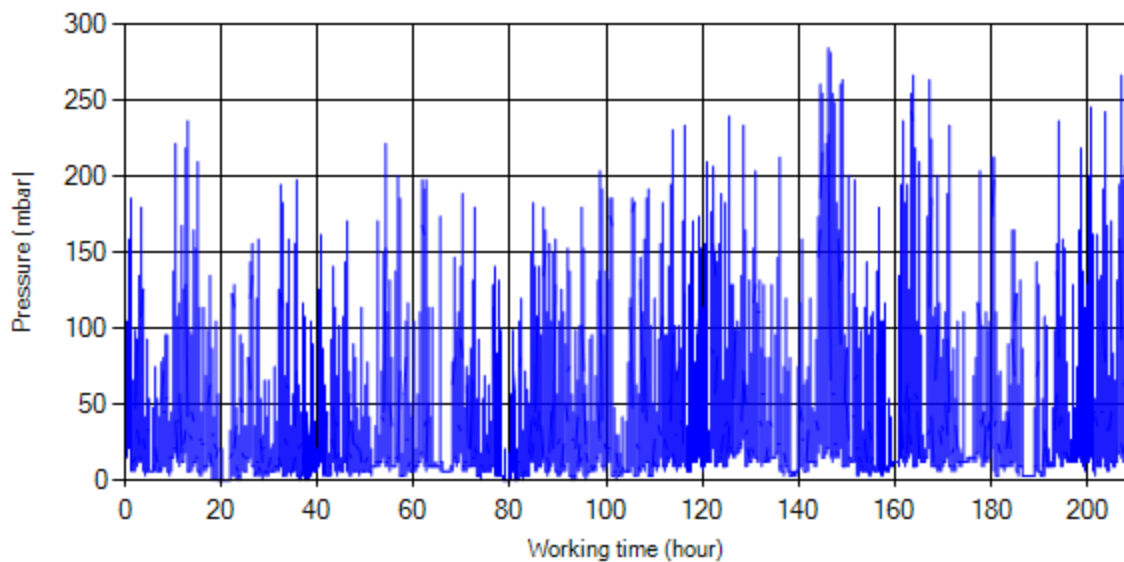


Figure 5- Pressure vs. working hours

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

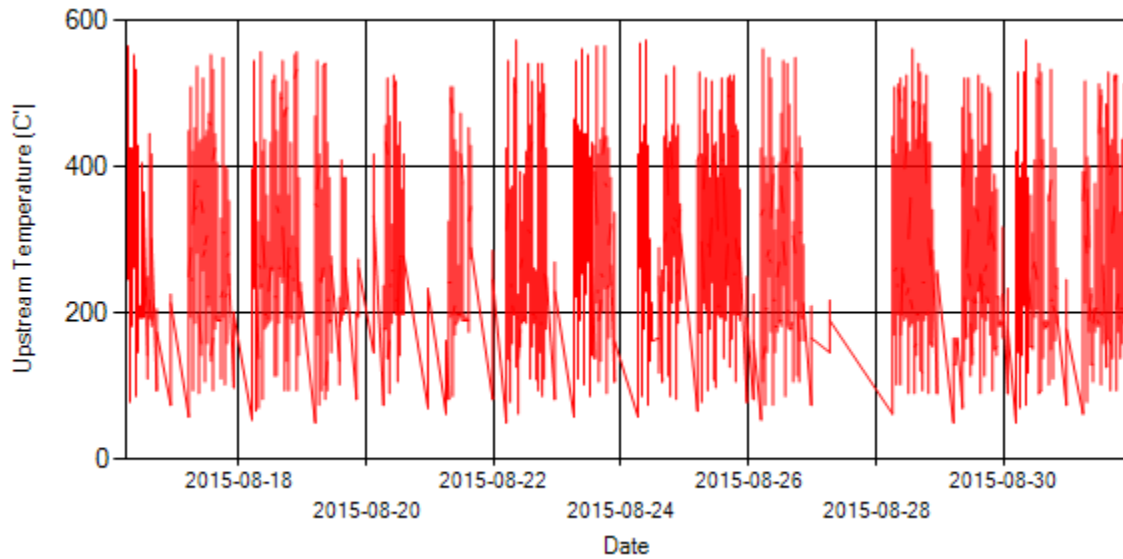


Figure 6- Temperature distribution over the period

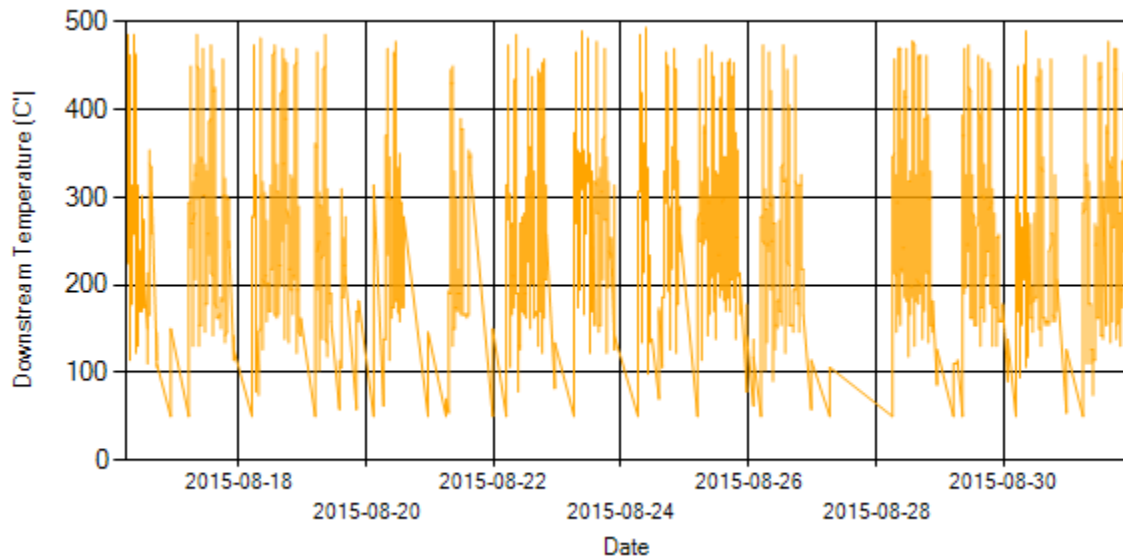
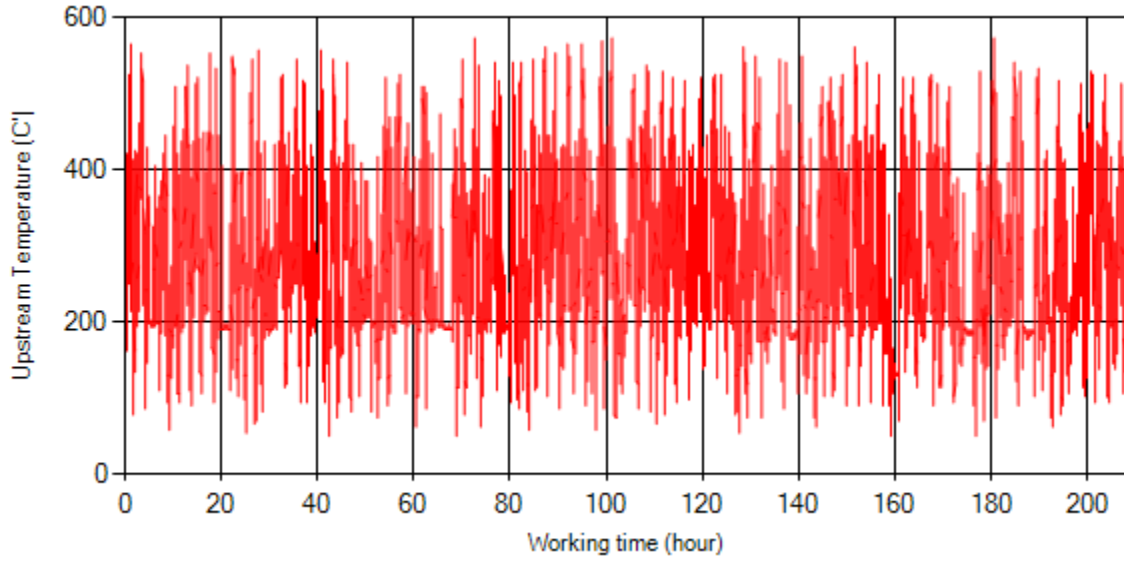
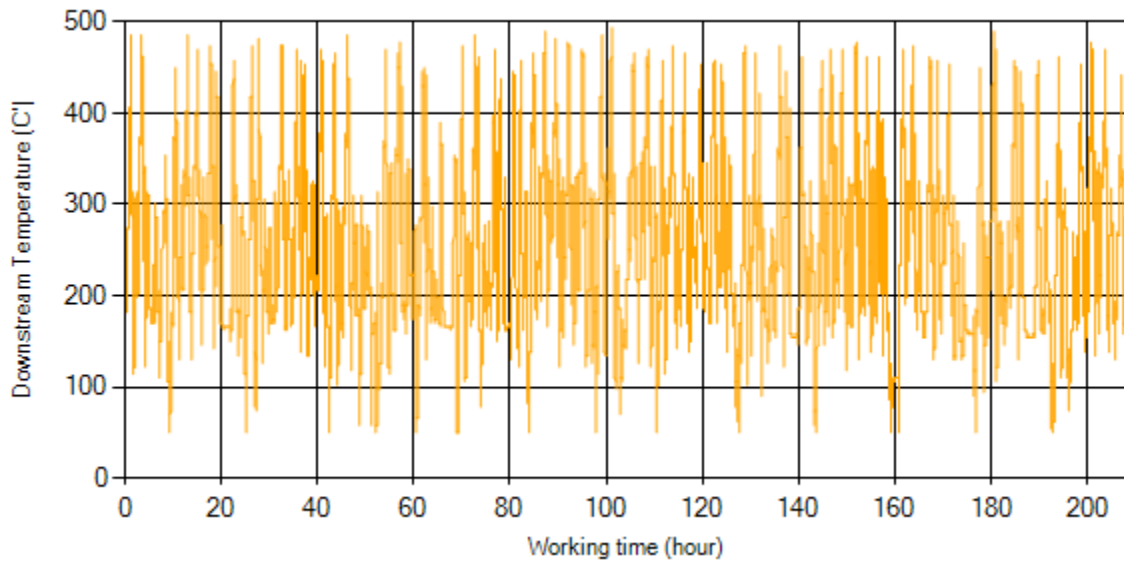


Figure 7- Temperature distribution over the period



*Figure 8- Temperature vs. working hours*



*Figure 9- Temperature vs. working hours*

## Engine Speed Diagrams

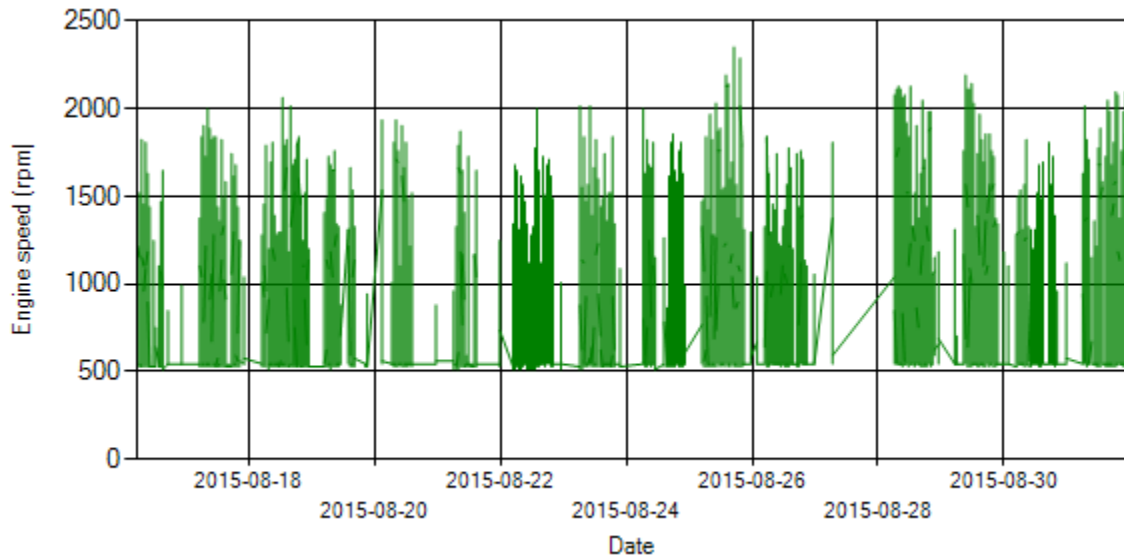


Figure 10- Engine speed distribution over the period

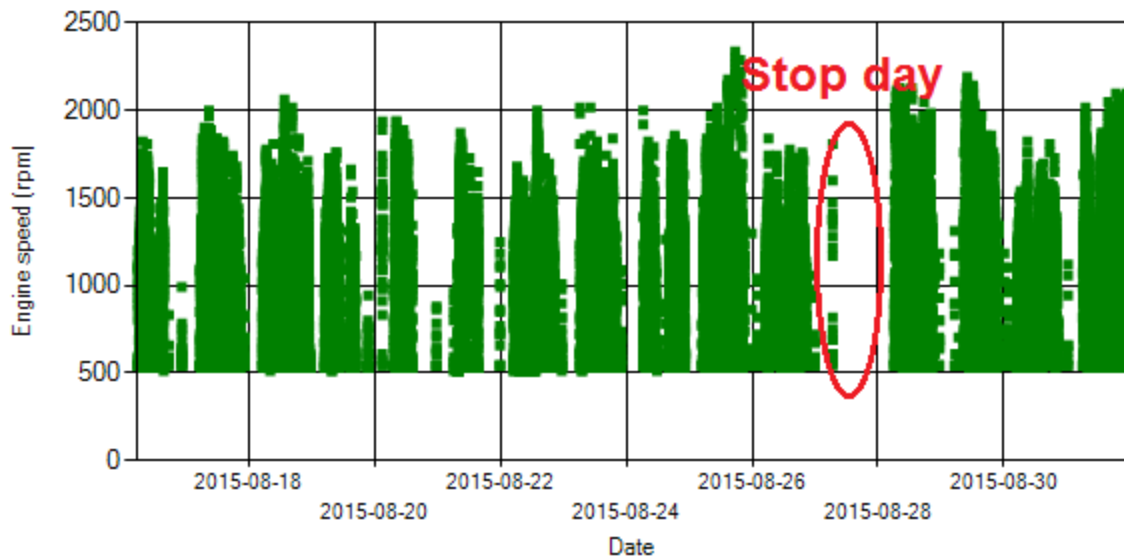


Figure 11- Engine speed diagram for calculating CPK's working days



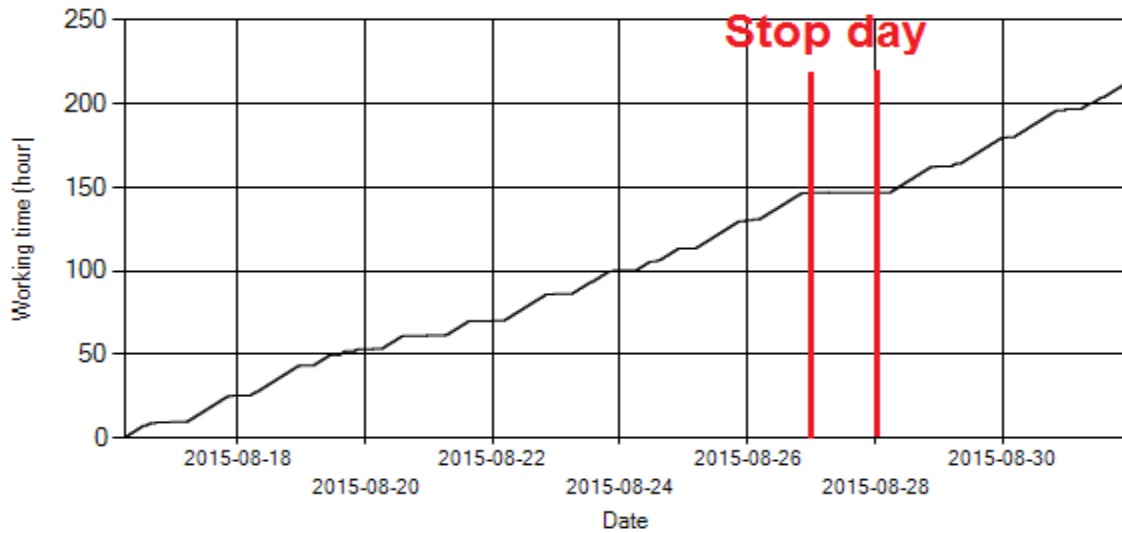


Figure 12- Time diagram for calculating CPK's working days

**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, Aug 27<sup>th</sup> was stop day.

### Pressure-Engine Speed diagrams

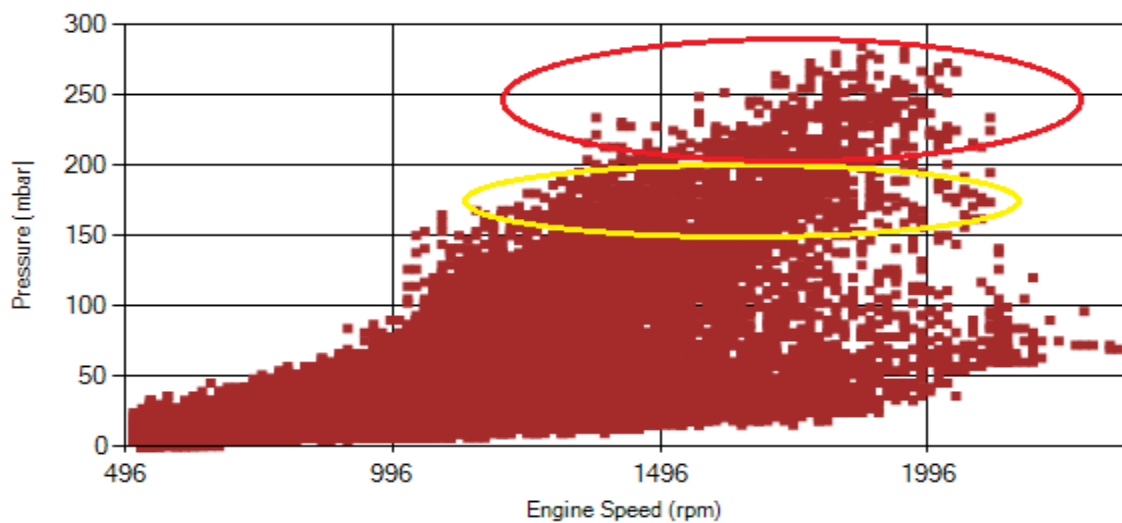


Figure 13- Pressure against engine speed

Notice: Red alarm (pressure > 200 mbar) and yellow alarm (200 > pressure > 150) ranges were indicated in figure 13.

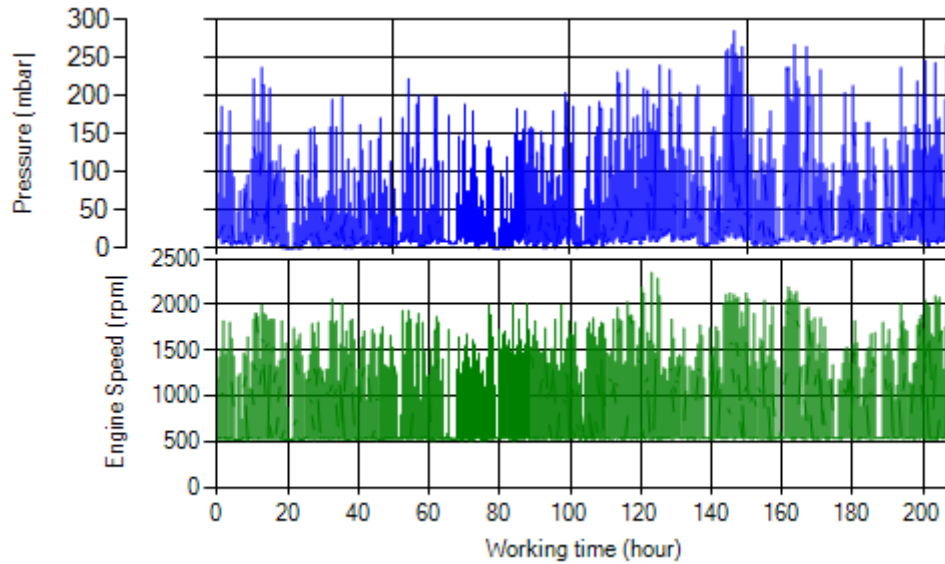


Figure 14- P, N distribution vs. working hours

### Temperature-Engine Speed diagrams

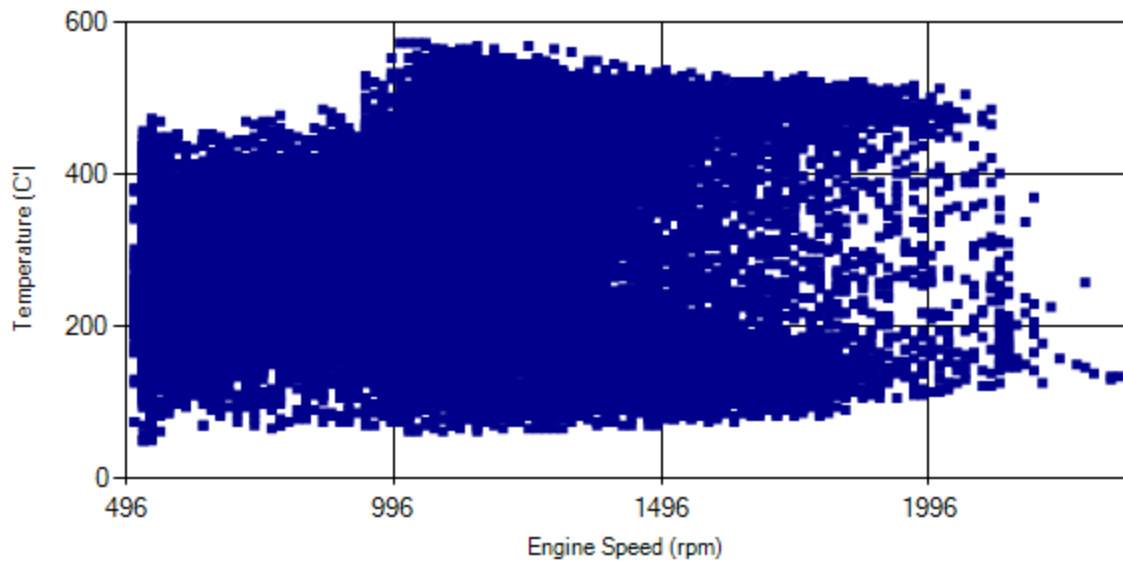


Figure 15- Temperature against engine speed

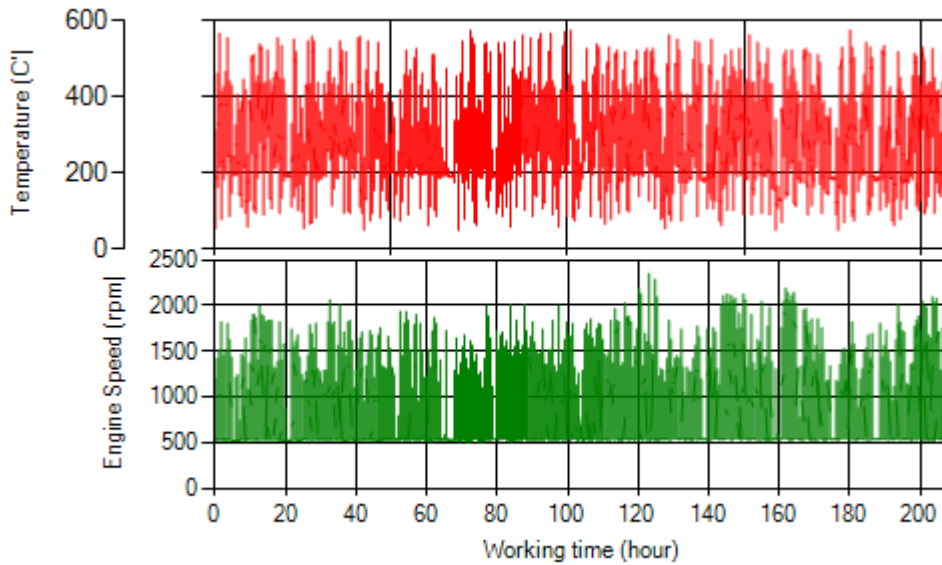


Figure 16- T, N distribution vs. working hours

### Filter Operation Analysis

- As depicted in figure 1, 0.71% of working time pressure was above 200 mbar and only 2.49% above 150mbar.
- Figure 2 displays flow temperature distribution for DPF’s upstream. It can be obviously observed that 13% of total working time, temperature is above 400 °C and 22% above 350°C.

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