

## 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	16/Apr/2016 – 30/Apr/2016 (Fifteen days)
K value	1.85
K value	1.85

*Table 2- DPF Maintenance History*

Filter maintenance date	<p>DPF core was removed on Jul 22<sup>nd</sup> and was cleaned on Aug 12<sup>th</sup> 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 16<sup>th</sup> and installed on Nov 17<sup>th</sup>.</p> <p>The third cleaning was unavoidable after only 6 days working and was done on 29<sup>th</sup> Nov. System only worked for two days and DPF was replaced by muffler on Nov 30<sup>th</sup>.</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>
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)	71110 km
Bus mileage over the period	3192 km
Working days over the period	15 days
Stop days	0 day
Data logger working days	15 days
Working hours over the period	228 hours 0 minutes
Average working hours per day (including stop days)	15 hours 11 minutes
Bus average speed	14 km/hr
idle speed time to all working time ration	-
Total Bus fuel consumption over the period	1723 lit
Fuel consumption per hour	7.5 lit/hr
Average fuel consumption	0.54 lit/km
Total Bus additive consumption over the period	- lit
Average additive consumption	- cc/km
Additive consumption to fuel ration	- cc/1000lit

Notice: rpm sensor had a problem during this period and showed zero values. So engine speed and some related parameters were missed.

### Temperature, Pressure and Engine Speed Overview

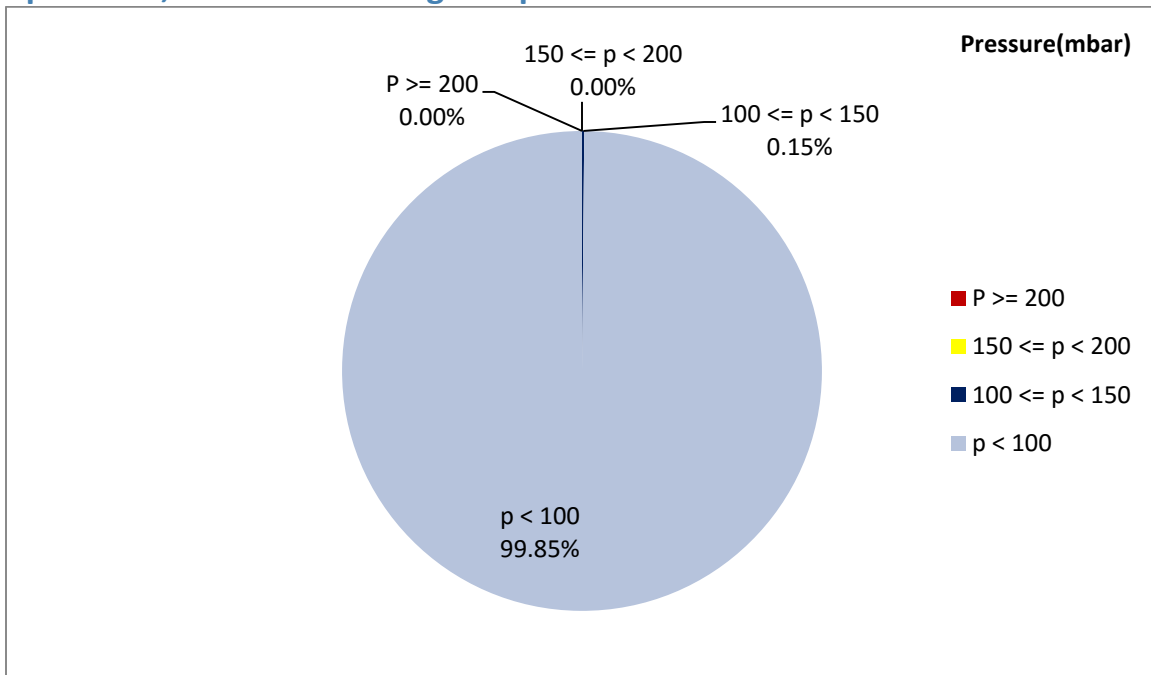


Figure 1- Pressure distribution over the working hours

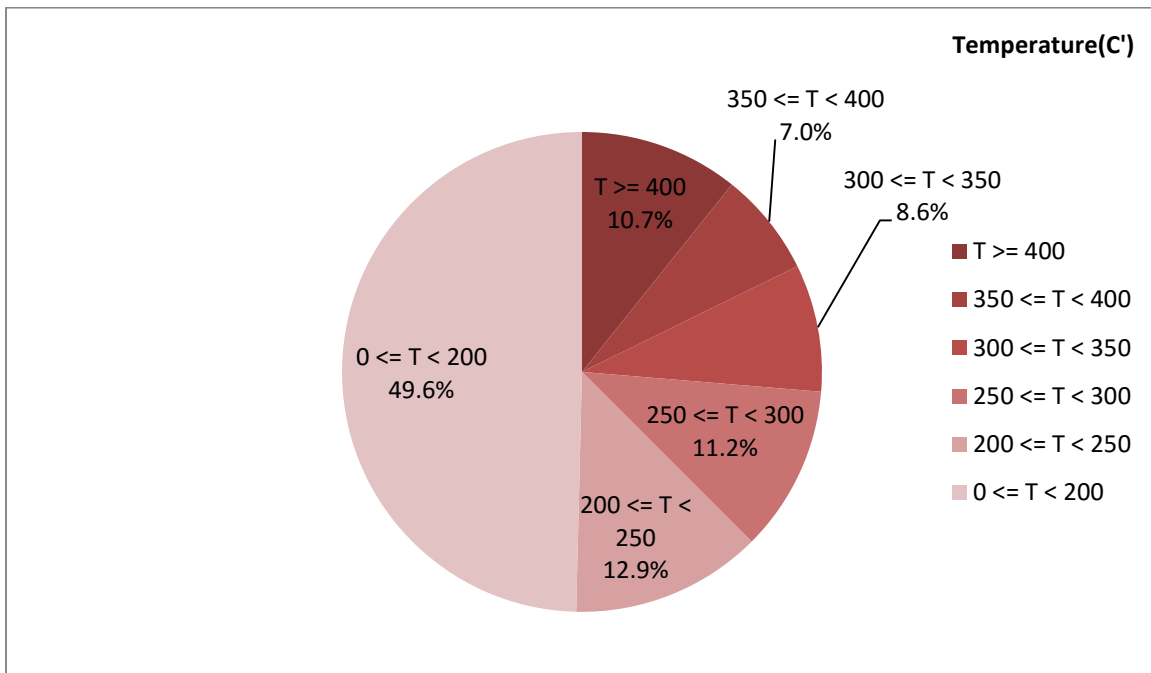
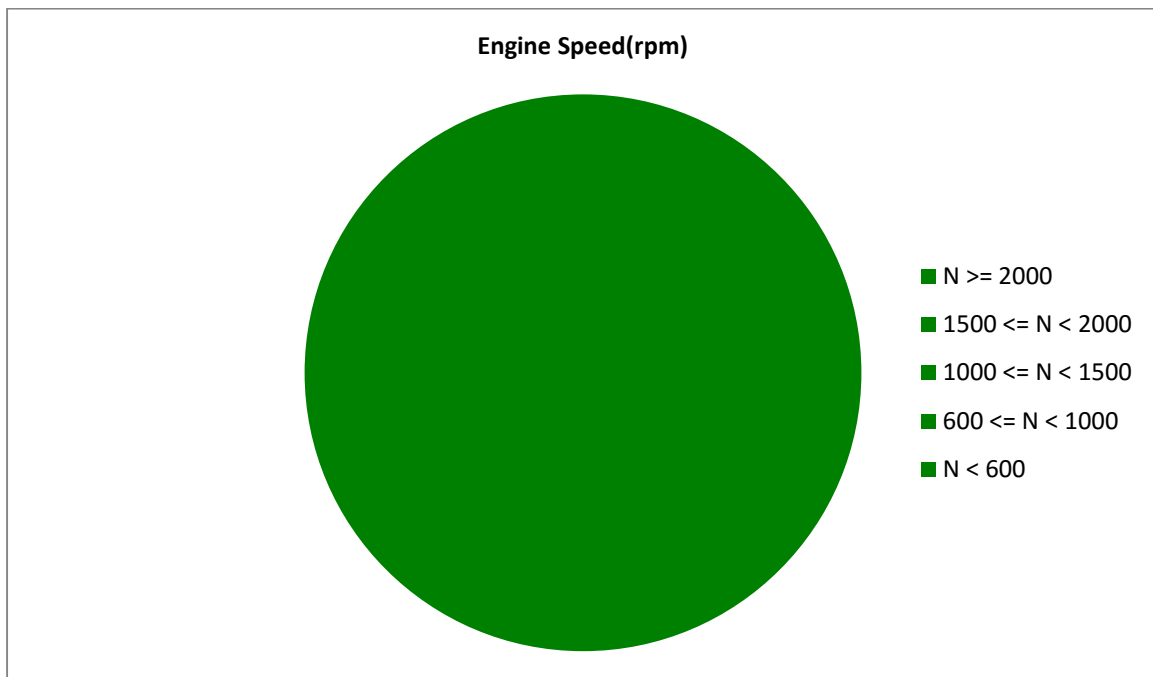


Figure 2-Temperature distribution over the working hours



*Figure 3- Engine speed distribution over the working hours*

*Table 4- Mean values*

Mean temperature (C)	Mean pressure(mbar)	Mean engine speed(rpm)
234.97	4.96	-

*Table 5- Mean values without idling*

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

*Table 6- Max-min values*

Max-min temperature(C)	Max-min pressure(mbar)	Max-min engine speed(rpm)
630-50	120-0	-

Notice: rpm sensor had a problem during this period and showed zero values. So engine speed and some related parameters were missed.

## Detailed Pressure Analysis

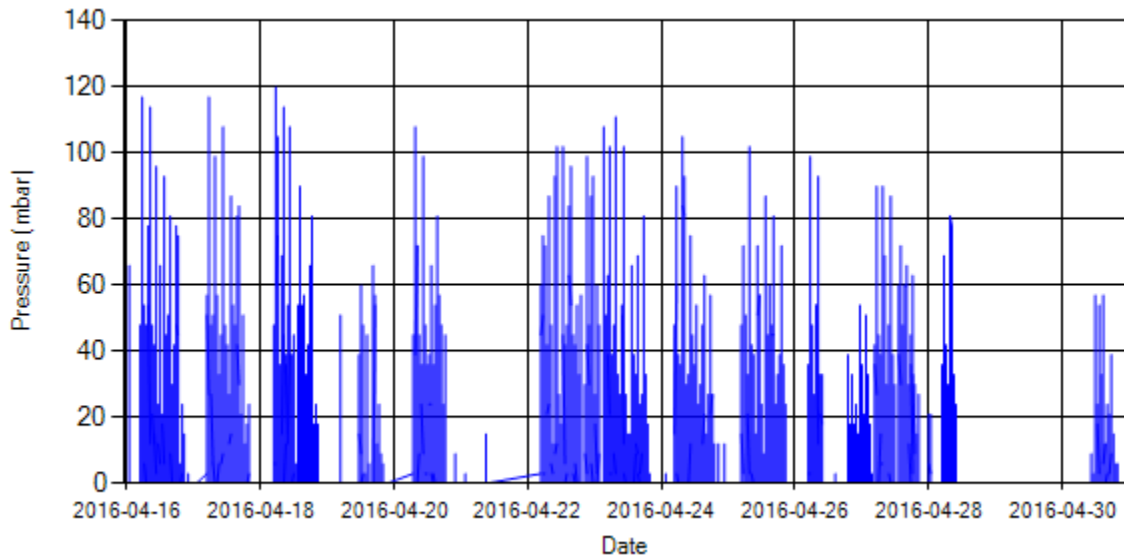


Figure 4- Pressure distribution over the period

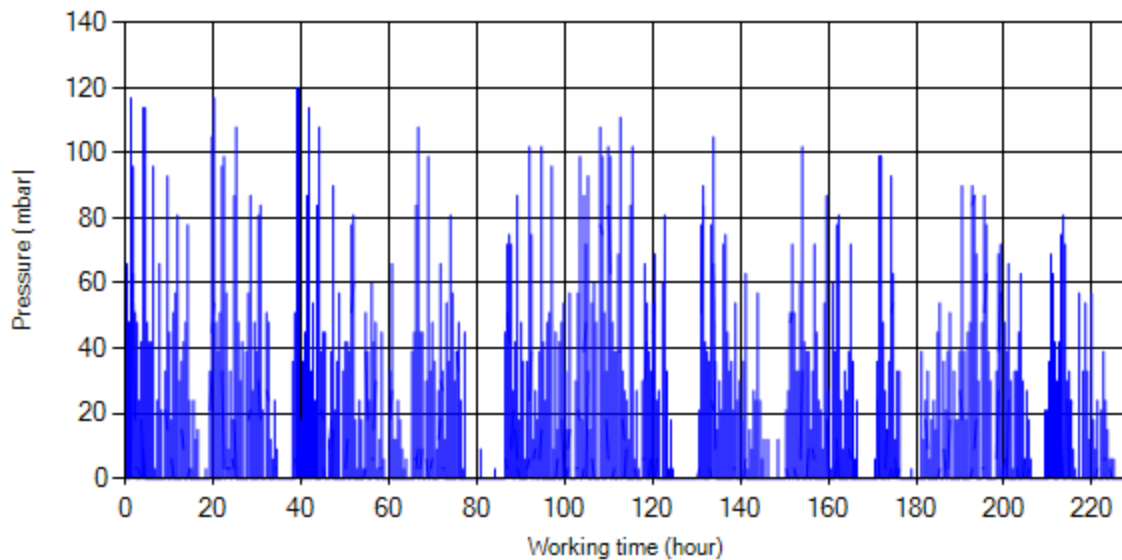


Figure 5- Pressure vs. working hours

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

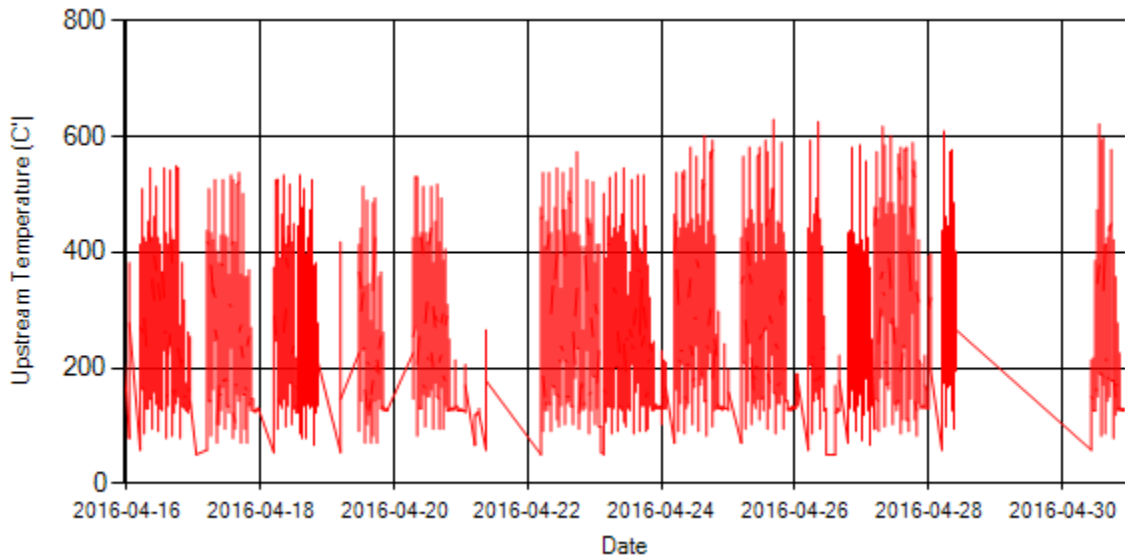


Figure 6- Temperature distribution over the period

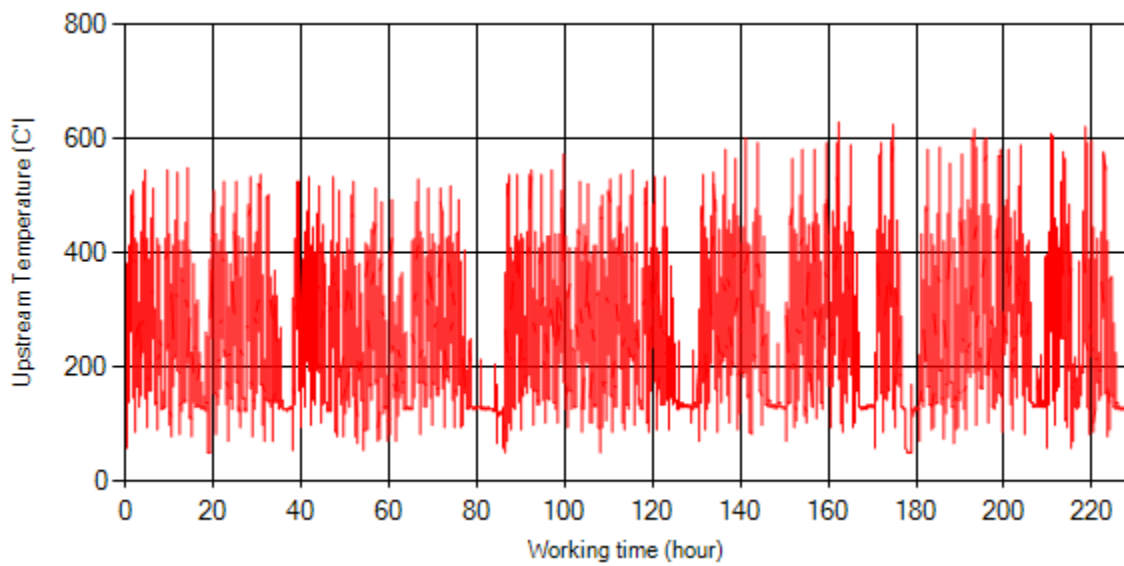
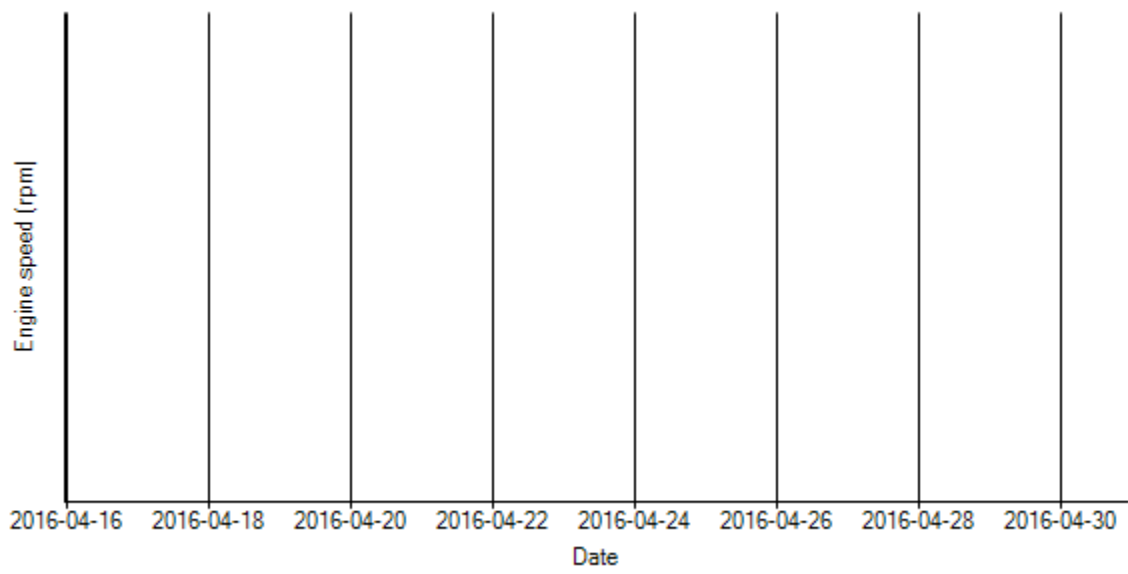
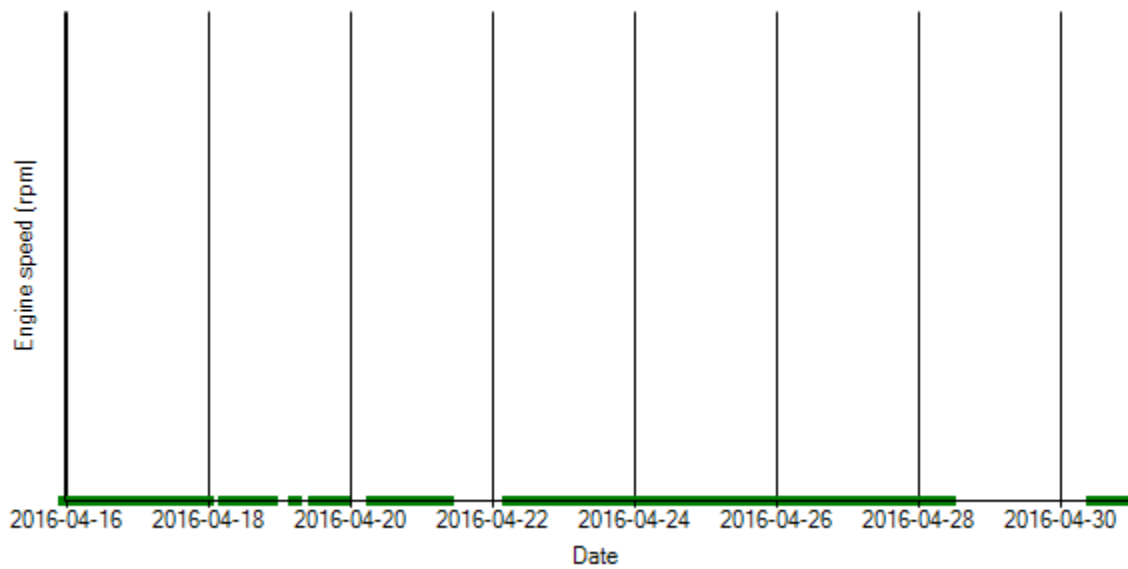


Figure 7- Temperature vs. working hours

## Engine Speed Diagrams



*Figure 8- Engine speed distribution over the period*



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

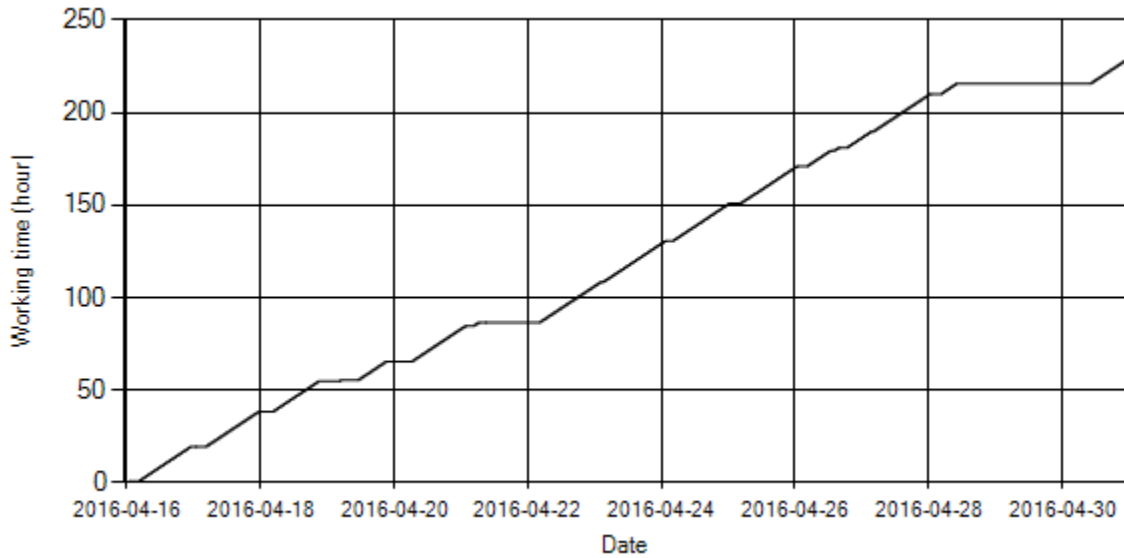


Figure 10- Time diagram for calculating CPK's working days

Notice: Data logger sampling time can be calculated from Figure 10. The lines parallel with Date axis show days without data logger data.

### Pressure-Engine Speed diagrams

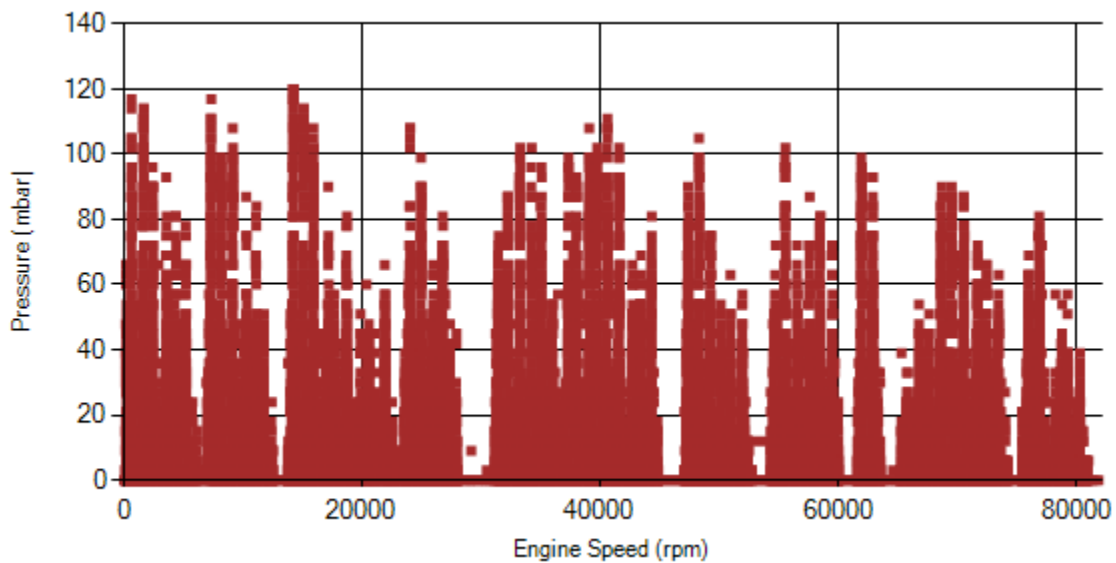


Figure 11- Pressure against engine speed



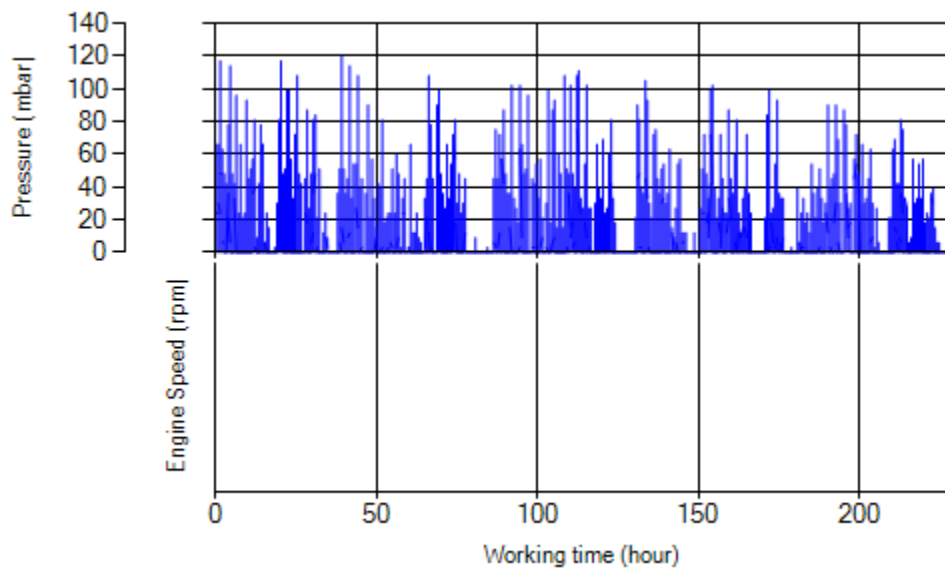


Figure 12- P, N distribution vs. working hours

### Temperature-Engine Speed diagrams

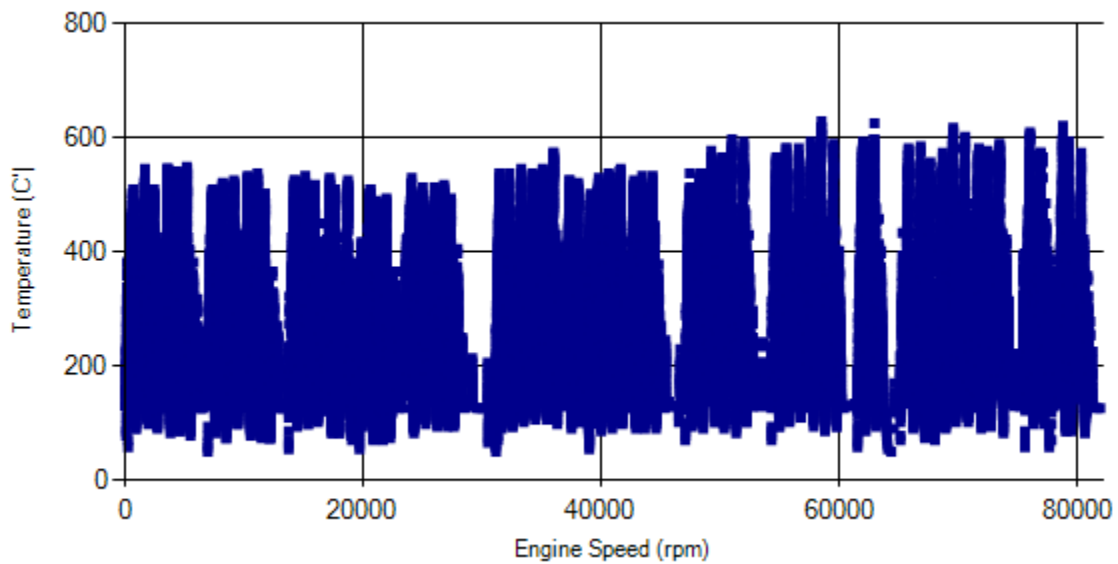
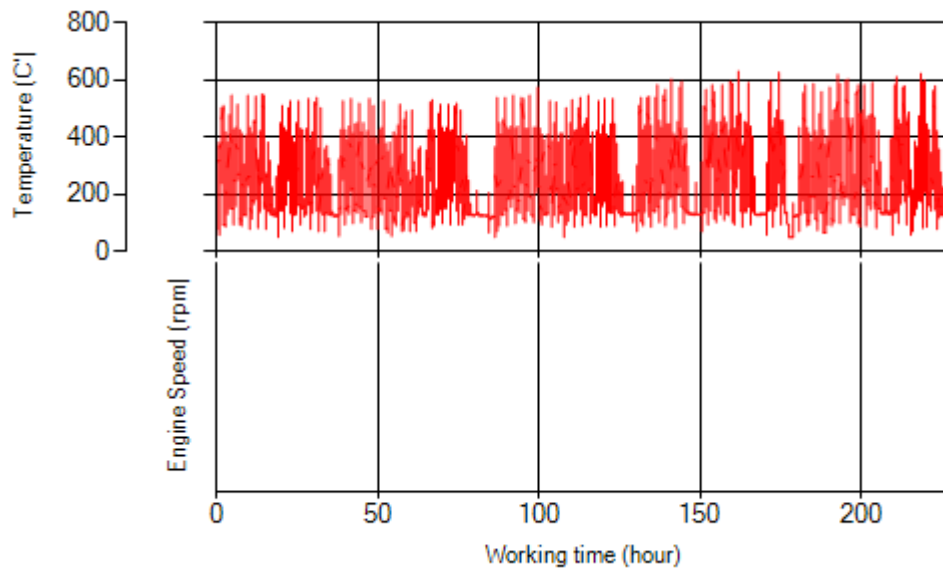


Figure 13- Temperature against engine speed



*Figure 14- T, N distribution vs. working hours*

### Filter Operation Analysis

**Notice: System was working without DPF during this period.**