## Overall Information

*Table1- Overall Information*

| | |
|---|---|
| Vehicle plate number | 85182 |
| CPK data logger number | LN: 001502, DN: 1999 |
| Bus line | Number 10 (south to north Bus line) |
| Bus Terminals | Azadi square - Daneshgah square |
| Total path distance | 10.7 km |
| DPF producer company | Tehag_01 (Catalyzed DPF) |
| Installation date | 24/Sep/2015 |
| Report period | 16/Jan/2016 – 31/Jan/2016 (sixteen days) |
| K value - DPF upstream | 1.80 [1/m] |
| K value – DPF downstream | 0.04 [1/m] |

*Table 2- DPF Maintenance History*

| | |
|---|---|
| Filter maintenance date | Filter have been working from installation date without any cleaning. |
| Dosing status | This system doesn't use additive. |

*Table 3- Fuel and Additive Consumption Information*

| | |
|---|---|
| Bus mileage (from DPF installation date) | 7094 km |
| Bus mileage over the period | 1302 km |
| Working days over the period | 9 days |
| Stop days | 7 days |
| Data logger working days | 9 days |
| Working hours over the period | 78 hours 10 minutes |
| Average working hours per day (including stop days) | 4hours53 minutes |
| Bus average speed | 16 km/hr |
| idle speed time to all working time ration | 72.75 % |
| Total Bus fuel consumption over the period | 820 lit |
| Fuel consumption per hour | 10.5 lit/hr |
| Average fuel consumption | 0.63 lit/km |

## Temperature, Pressure and Engine Speed Overview

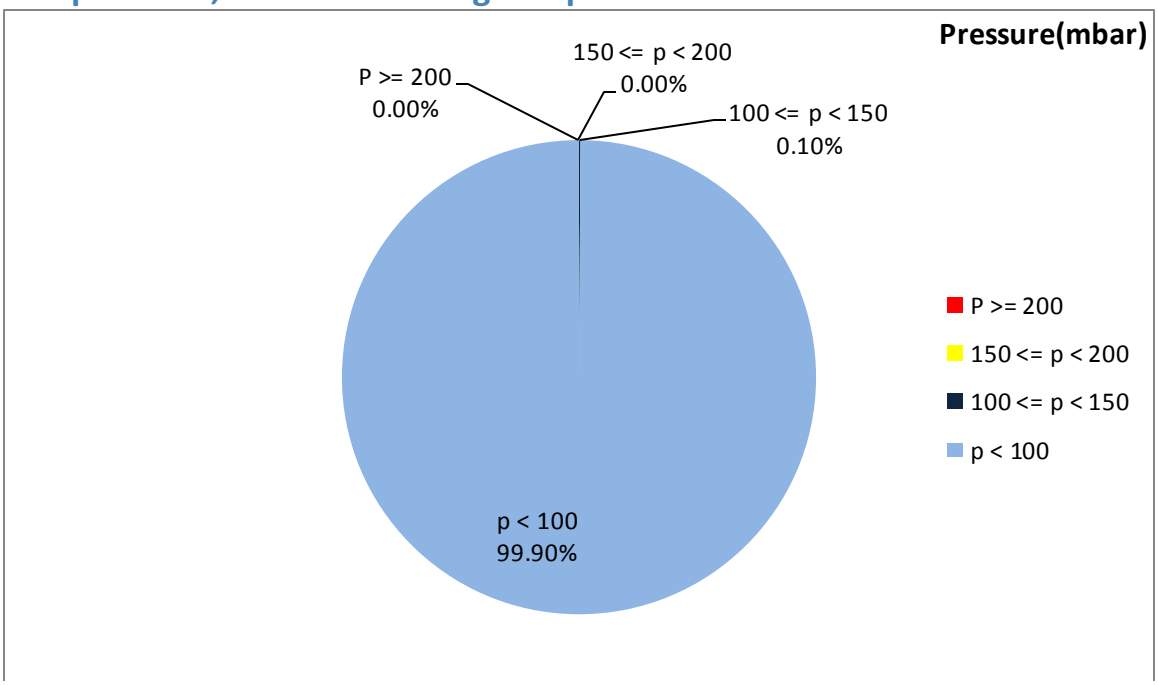


*Figure 1- Pressure distribution over the working hours*

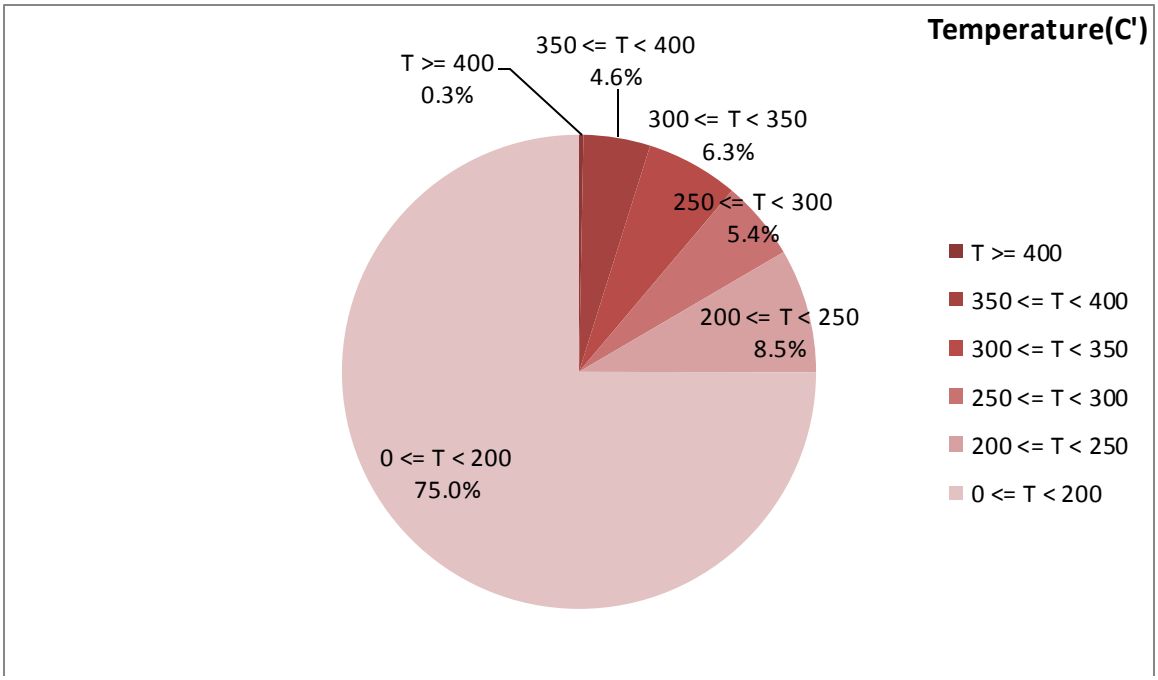


*Figure 2-Temperature distribution over the working hours*

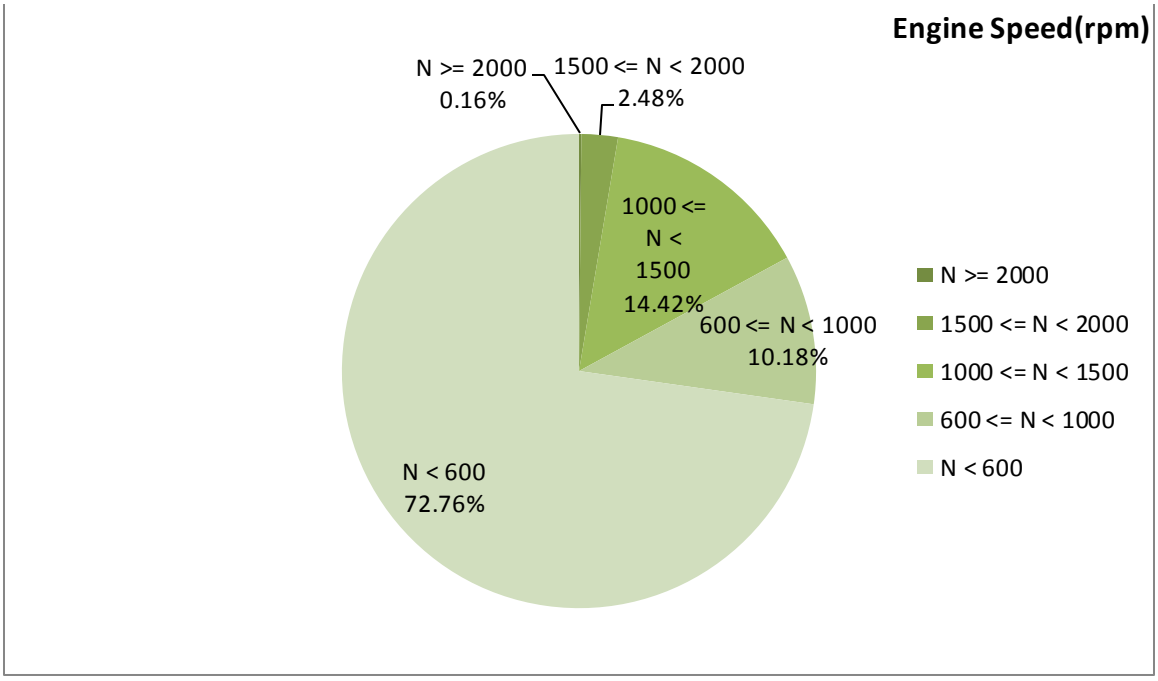


*Figure 3- Engine speed distribution over the working hours*

*Table 4- Mean values*

| Mean temperature (C) | Mean pressure(mbar) | Mean engine speed(rpm) |
|---|---|---|
| 173.84 | 5.21 | 701 |

*Table 5- Mean values without idling*

| Mean temperature (C) | Mean pressure(mbar) | Mean engine speed(rpm) |
|---|---|---|
| 245.41 | 15.82 | 1096 |

*Table 6- Max-min values*

| Max-min temperature(C) | Max-min pressure(mbar) | Max-min engine speed(rpm) |
|---|---|---|
| 442-50 | 126-0 | 2176-384 |

## Detailed Pressure Analysis

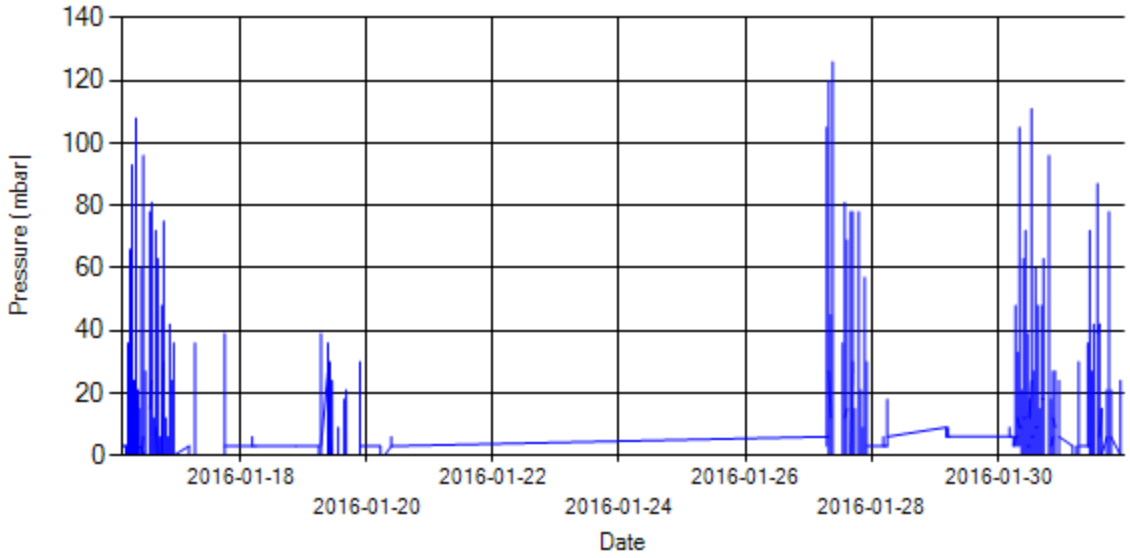


*Figure 4- Pressure distribution over the period*

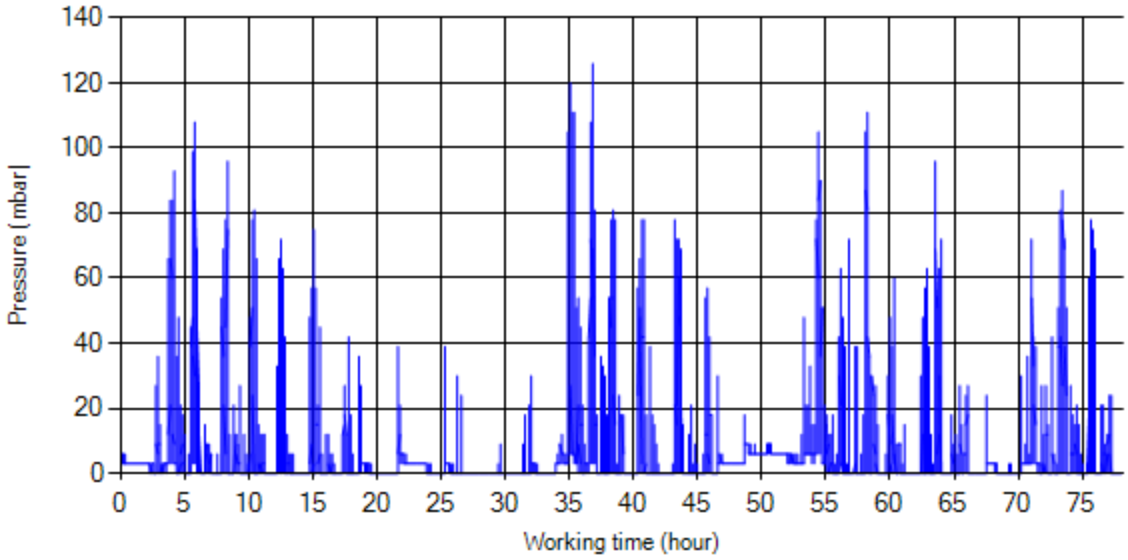


*Figure 5- Pressure vs. working hours*

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

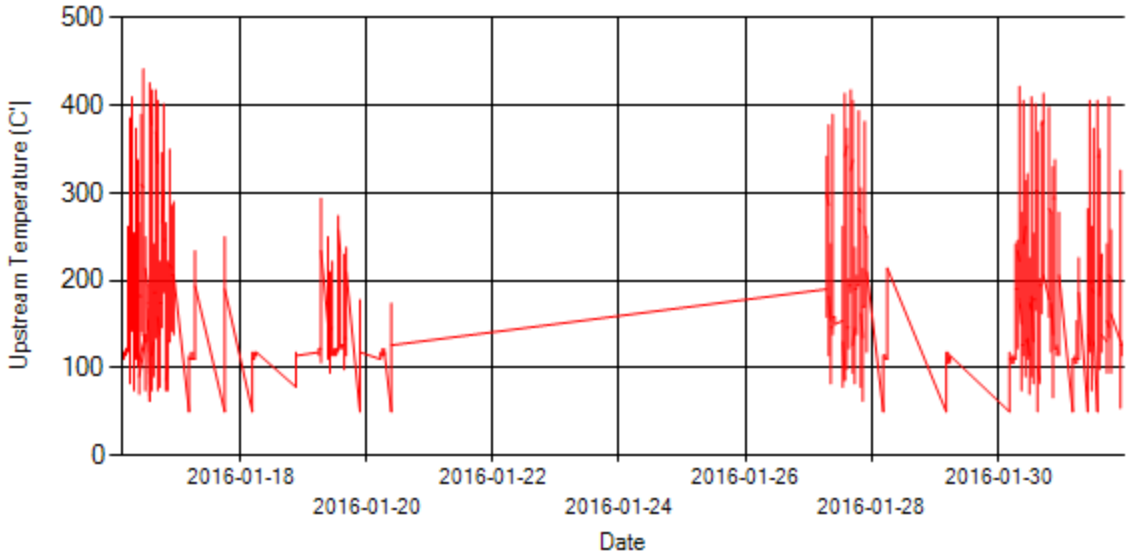


*Figure 6- Temperature distribution over the period*

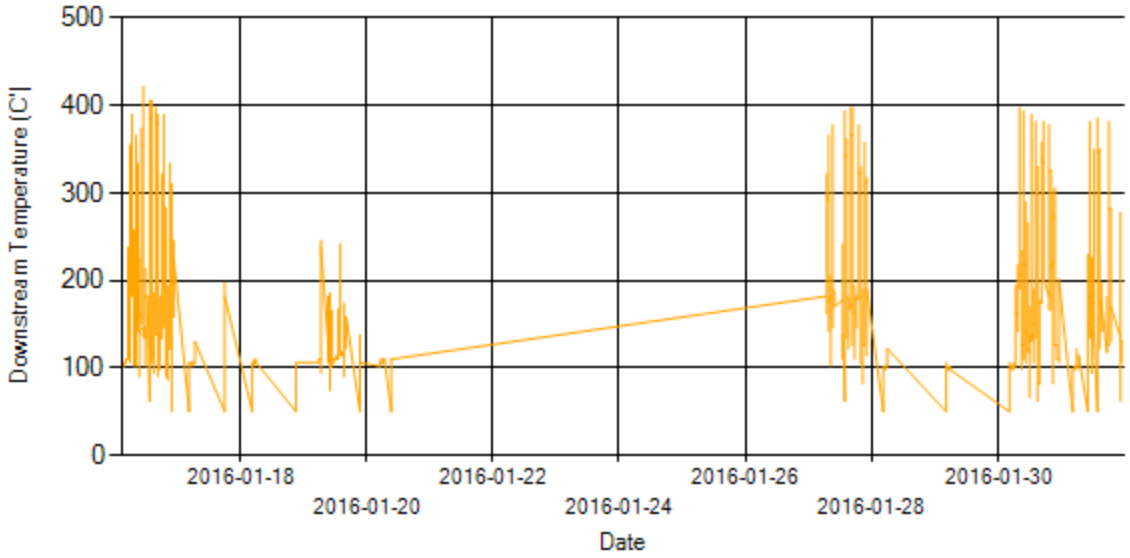


*Figure 7- Temperature distribution over the period*

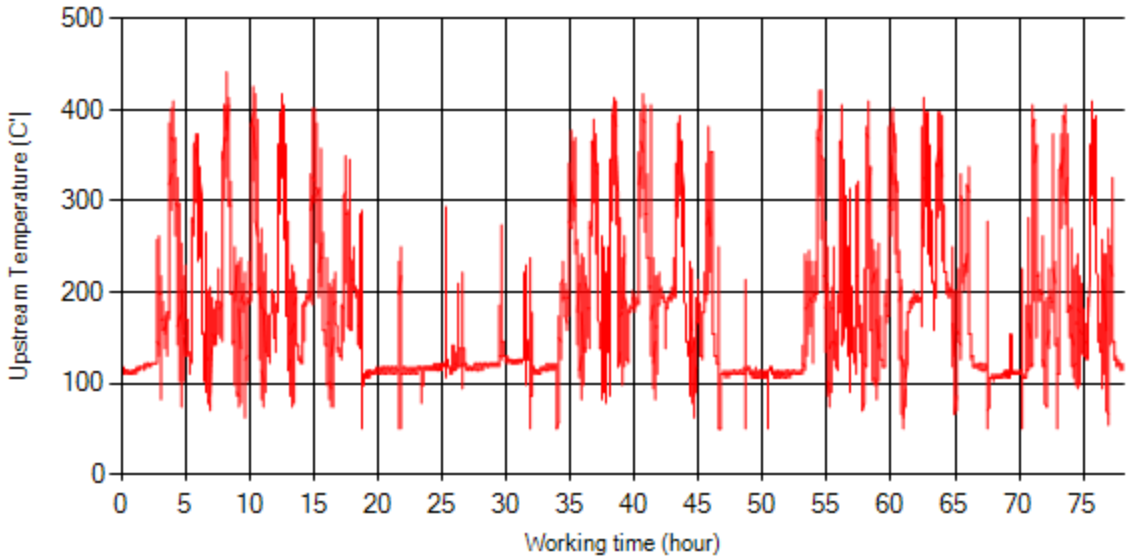


*Figure 8- Temperature vs. working hours*

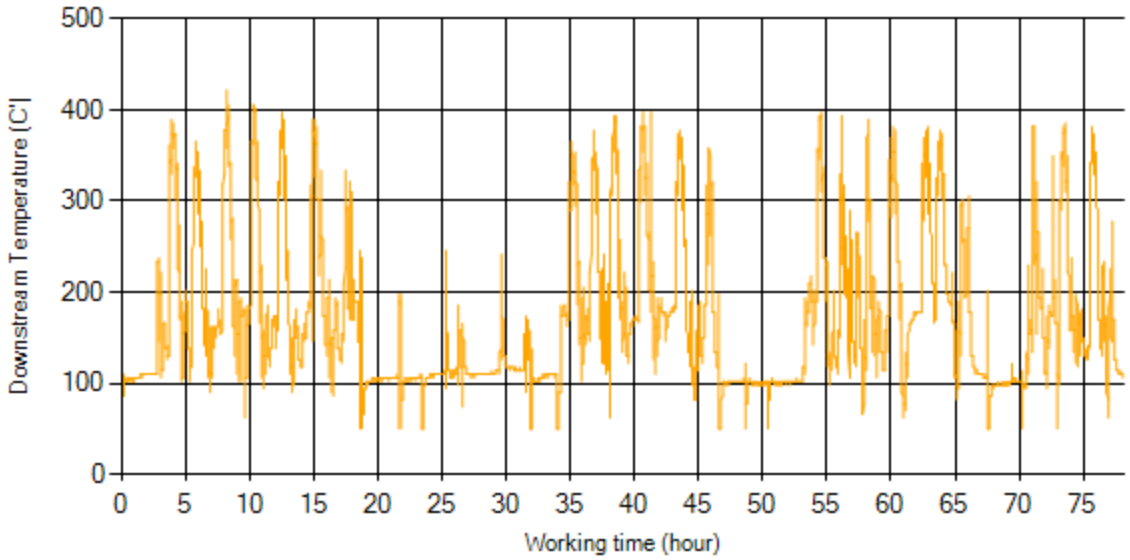


*Figure 9- Temperature vs. working hours*

## Engine Speed Diagrams

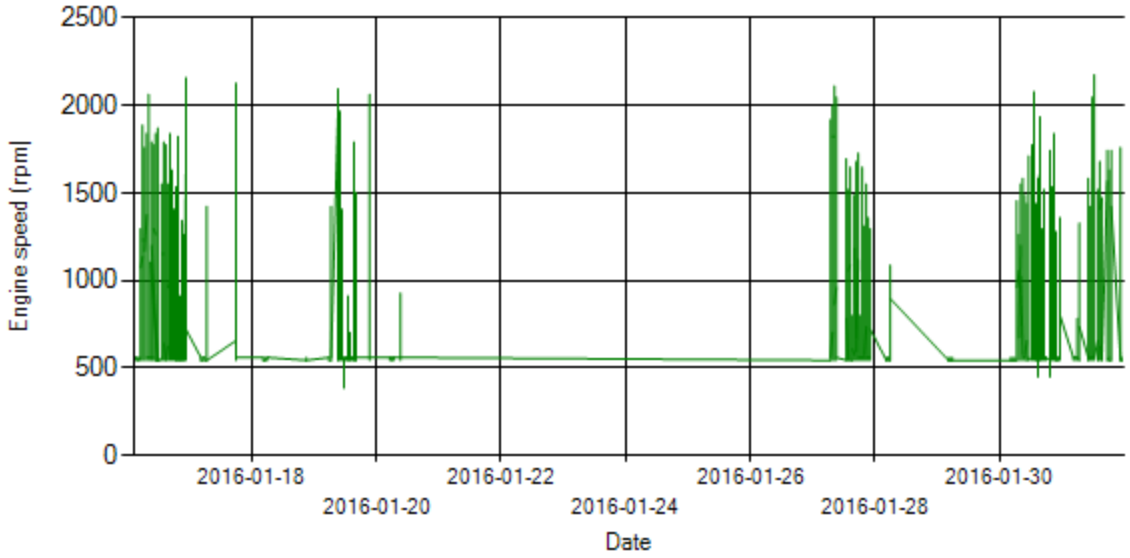


*Figure 10- Engine speed distribution over the period*

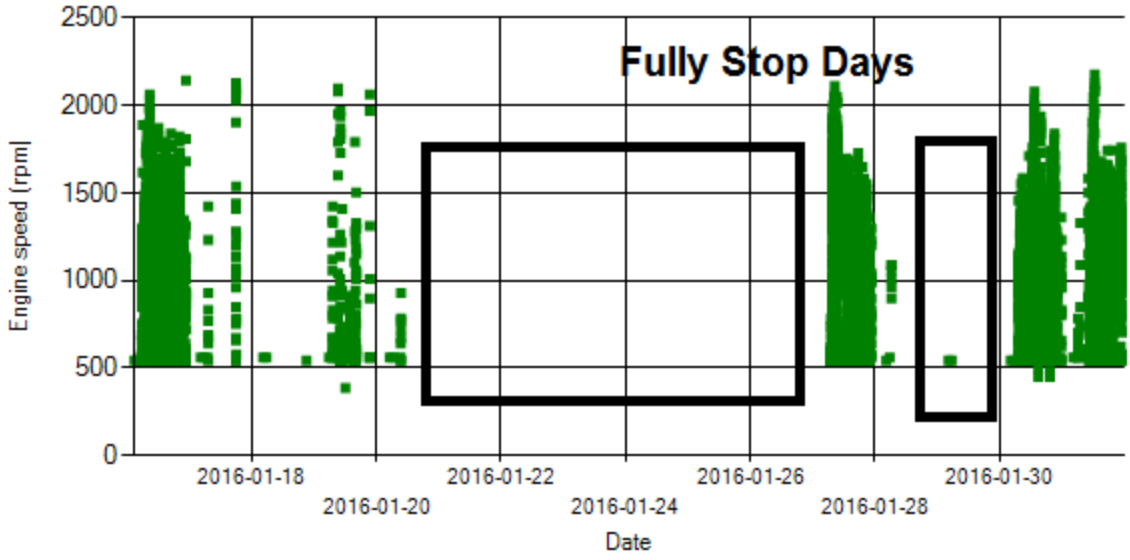


*Figure 11- Engine speed diagram for calculating CPK's working days*

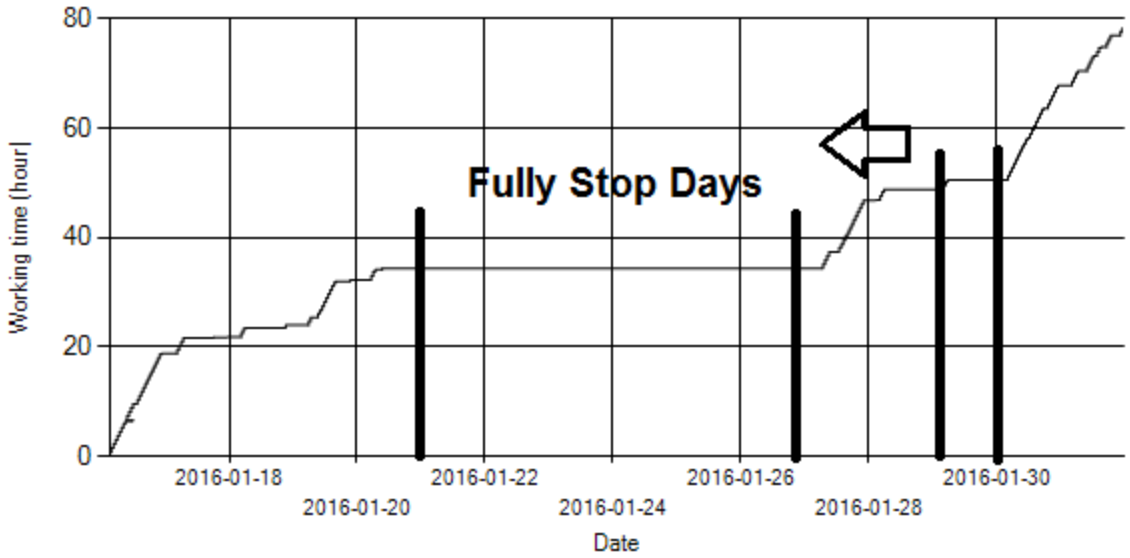


*Figure 12- Time diagram for calculating CPK's working days*

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

## Pressure-Engine Speed diagrams

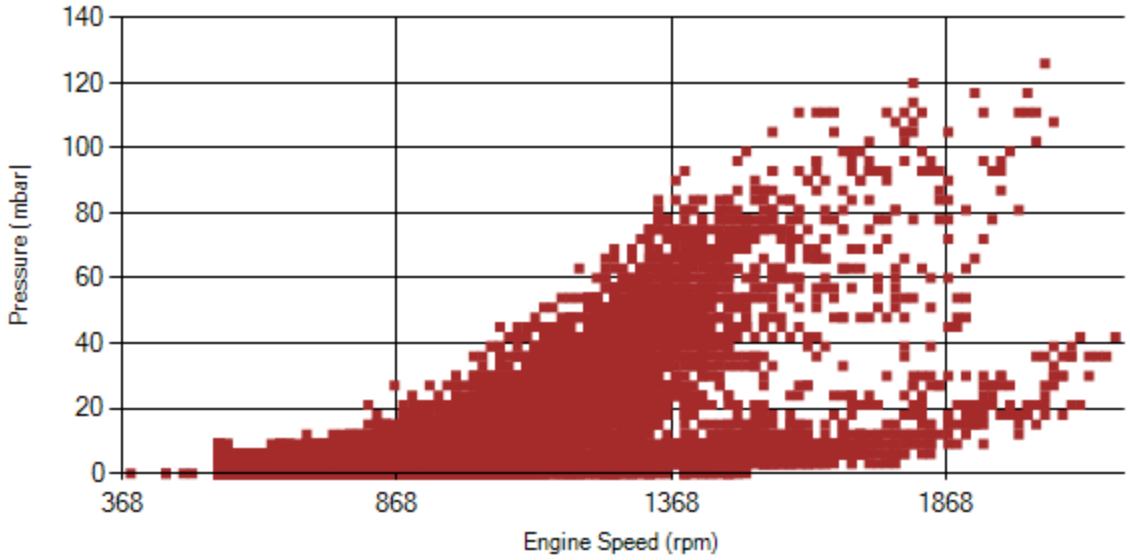


*Figure 13- Pressure against engine speed*

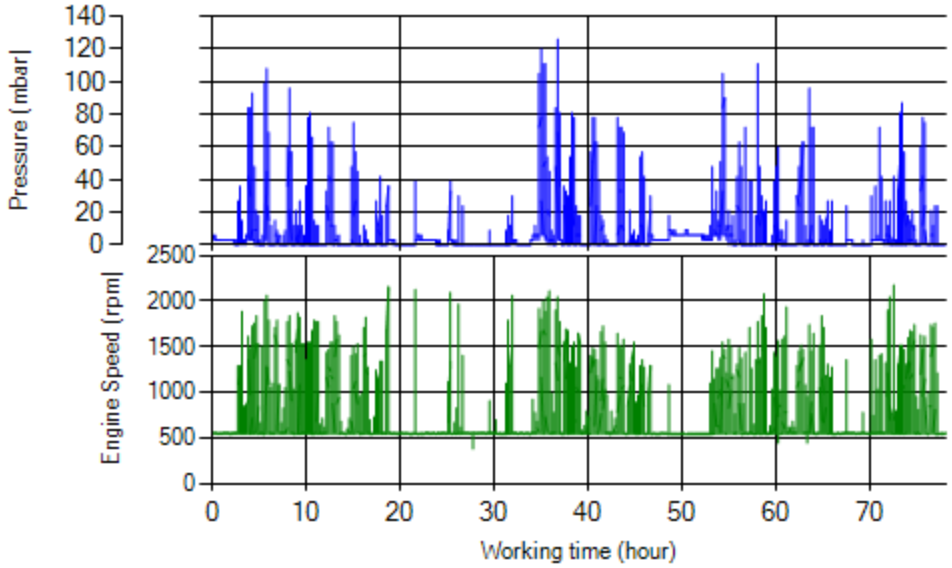


*Figure 14- P, N distribution vs. working hours*

## Temperature-Engine Speed diagrams

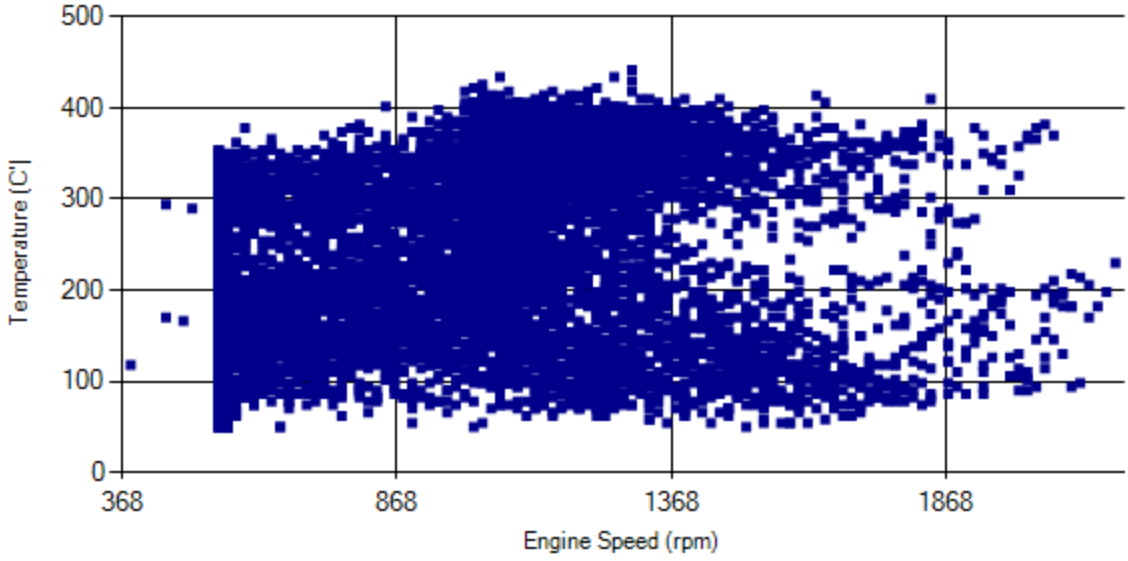


*Figure 15- Temperature against engine speed*

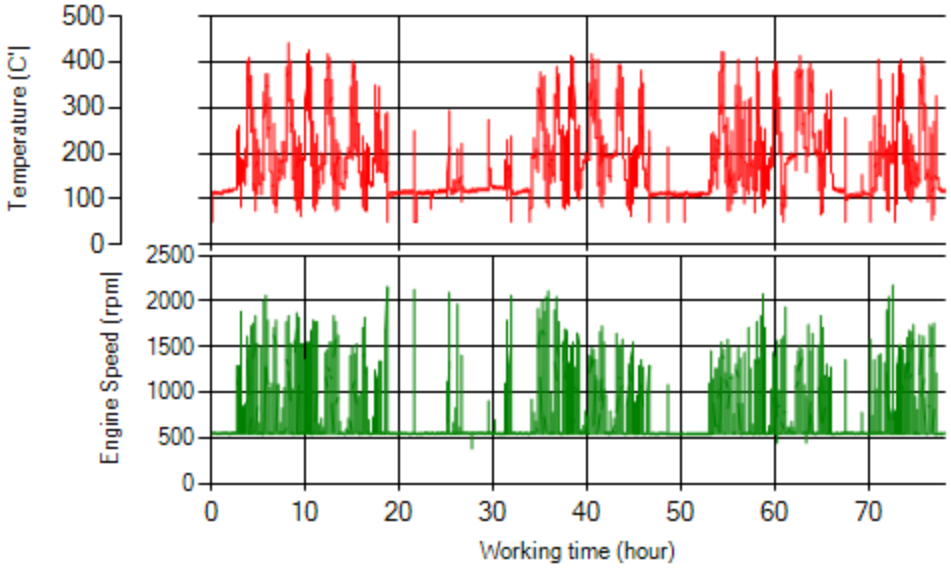


*Figure 16- T, N distribution vs. working hours*

## Filter Operation Analysis

- As depicted in figure 1, only 0.1% of working time pressure was abowe 100 mbar during this period.
- Figure 2, 17 display flow temperature distribution for DPF's upstream. It can be obviously observed that 4.46% of total working-time temperature is above 350 °C and 16.12% above 250°C.

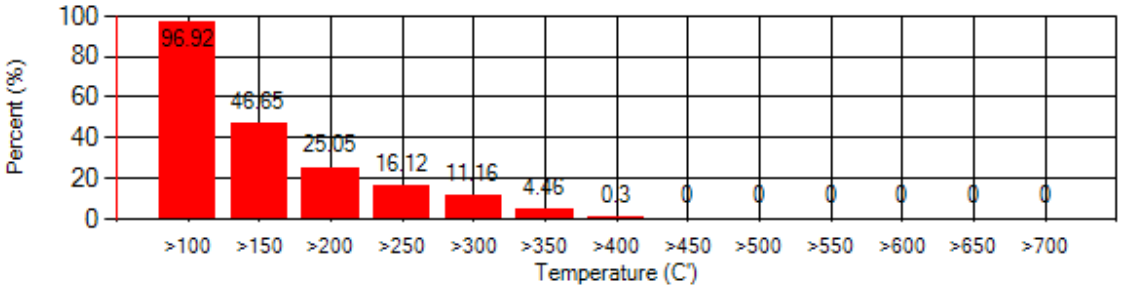


*Figure 17. Cumulative diagram of exhaust gas temperature*

| | | |
|---|---|---|
| Filter operation status | Excellent ■ | Good ☐ |
| | Maintenance required ☐ | Failed☐ |