



TEST REPORT

Air Emission control Econokit System

Directed by

To

BUREAU VERITAS
685 rue Georges Claude
CS 60401

13591 AIX EN PROVENCE cedex 03

UBIQUITY
Ecoparc

361, avenue des Romarins
34130 ST AUNES

Report N° : 2415961/1/1/REV1

*Avançons en confiance

Move Forward with Confidence*



**BUREAU
VERITAS**



To the attention of Mr Stephen Mallet

Report N°2415961/1/1REV1
Person signing the report : Stéphane Clot
Translated by : Quentin Faulconnier
Friday, March 21, 2012

This report supersedes Report No. 2415961/1/1 of January 23, 2012

TEST REPORT

Air Emission Control Econokit System

Intervention dates : January 4, 2012 and January 16, 2012

Place of intervention : MF Power Aix Les Milles

Follow-up documentary :

Index	Date	Author	Auditor	Comments
0	23/01/12	SCL	GPA	Edition
1	21/03/12	SCL	SVA	Révision 1

This report contains 24 pages.

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1. RESULTS SUMMARY & TESTS CONCLUSION

Measures have been performed out of regulatory context. It has been realized on exhaust fumes of a vehicle, with and without Econokit system equipment. Econokit is distributed by Ubiquity.

Concentration measurement results are given in milligrams per cubic meter of gas, at standard conditions (101.3 kilopascals; 273 kelvin). Water vapor is removed from calculations (dry gas).

The gas flow rate is calculated from the mass air flow rate (given in Annex 4).

With and without Econokit tests Results – Summary Table

Test WITHOUT Econokit

CONTINUOUS GAS ANALYSIS			
Institution	UBIQUITY		
Mark of the controlled installation	TEST WITHOUT ECONOKIT		
date of measures	January 4, 2012		
Time	15:50 to 15:55		
	Units	Values	
Local atmospheric pressure	hPa	1014	
moisture content of wet gas	%	1.5	+/- 0.5
Gas flow in standard conditions	Nm³/h wet gases	135	+/- 15
Oxygen	% dry gas	8.0	+/- 0.3
Measuring range : 0 to 25 %	% wet gas	7.9	
Carbon dioxide	% dry gas	9.3	+/- 0.3
Measuring Range : 0 to 20 %	% wet gas	9.2	
	kg/h	12.55	
Nitrogen oxides	ppm dry	459.1	
	mg/Nm³ wet gas	927.3	+/- 58.6
Measuring Range : 0 to 1000 ppm	mg/Nm³ dry gas	941.1	+/- 58.7
	g/h	125.6	
Carbon monoxide	ppm dry	4.9	
	mg/Nm³ wet gas	6.0	+/- 0.5
Measuring Range : 0 to 500 ppm	mg/Nm³ dry gas	6.1	+/- 0.5
	g/h	0.81	
Volatile Organic Compound (VOC)	ppm dry	26.3	
expressed in carbon	mg/Nm³ wet gas	14.0	+/- 1.4
	mg/Nm³ dry gas	14.2	+/- 1.5
Measuring Range: 0 to 100 ppm	g/h	1.89	

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Test WITH Econokit

CONTINUOUS GAZ ANALYSIS			
Institution Mark on the controlled installation date of measures Time	UBIQUITY TEST WITH ECONOKIT 16 janvier 2012 15:36 à 15:44		
	Units	Valeurs	
Local atmospheric pressure	hPa	1011	
moisture content of wet gas	%	1.9	+/- 0.9
Gas flow in standard conditions	Nm ³ /h wet gases	123	+/- 14
Oxygen	% dry gas	8.3	+/- 0.3
Measuring range : 0 to 25 %	% wet gas	8.2	
Carbon Dioxide	% dry gas	9.2	+/- 0.3
Measuring range : 0 to 20 %	% wet gas	9.1	
	kg/h	10.61	
Nitrogen oxides	ppm dry	336	
	mg/Nm ³ wet gas	677	+/- 55
Measuring range : 0 to 1000 ppm	mg/Nm ³ dry gas	690	+/- 54
	g/h	83.0	
Carbon monoxide	ppm dry	4.5	
	mg/Nm ³ wet gas	5.5	+/- 0.5
Measuring range : 0 to 500 ppm	mg/Nm ³ dry gas	5.6	+/- 0.5
	g/h	0.67	
Volatile organic compound (VOC) express in carbon	ppm dry	7.7	
	mg/Nm ³ wet gas	4.1	+/- 0.5
Measuring range : 0 to 100 ppm	mg/Nm ³ dry gas	4.2	+/- 0.5
	g/h	0.50	

Conclusion :

Parameters	Units	Measure without Econokit	Mesure with Econokit	Variation	Variation (%)
Carbon dioxide	kg/h	12.55	10.6	1.95	-15.5
Nitrogen oxides	mg/Nm ³ dry gas	941.1	689.5	251.5	-26.7
	g/h	125.6	83.0	42.5	-33.9
Carbon monoxide	mg/Nm ³ dry gas	6.1	5.6	0.5	-8.4
	g/h	0.81	0.67	0.14	-17.3
Volatil Organic Compound (VOC) expressed in carbon	mg/Nm ³ dry gas	14.2	4.2	10.0	-70.5
	g/h	1.89	0.50	1.39	-73.4

Flow rates are given in g/h and kg/h. Bureau Veritas uses its own concentration measurements and flow data from Ubiquity (from OBD of the vehicle).

Measurements have been performed during short periods. Bureau Veritas cannot insure the representativeness of the exhaust during these periods, neither insure the extrapolation of measurements to longer periods.

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2. PURPOSE OF THE MISSION

At the request of the company Ubiquity, Mr Pace and Mr Clot (from Bureau Veritas) have conducted concentration measurements of automobile exhaust emissions. These measurements have been performed on a vehicle whose engine is equipped with and without Econokit.

Econokit is a device distributed by Ubiquity that aims to reduce fuel consumption and exhaust emissions.

3. METHODOLOGY

The tests were conducted on a vehicle brake testbed at MF Power in Aix les Milles.

The testbed design, the vehicle and the operating procedure are the responsibility of Ubiquity and have not been audited by Bureau Veritas.

Two configurations have been tested :

- a first series of measurements was conducted January 4, 2012 on a vehicle not equipped with Econokit.
- A second series of measurements was conducted January 16, 2012 on the same Econokit equipped vehicle. (The vehicle has traveled 950 km with Econokit system installed on the engine before testing of 1/16/12).

The vehicle used for testing was :

Brand : FIAT
Type : PUNTO
Year : 2006
Engine: 1.4l Multi Jet Turbo Diesel
Mileage : 78 000 Km on January 4, 2012

Configuration of the testbed during tests (data provided by ubiquity) :
Engine speed 3000rpm in 5th gear
Gross Power 25 HP (18.4 KW)
Engine Temperature : 90°C

Special events during testing:

Nothing to report.

Measurement conditions :

Flow measurement was provided by ubiquity.

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APPENDIX 0 – CALCULATION METHODS

The purpose of this form is to clarify the calculation formulas used in the tables for the determination of the results presented in this paper.

Moisture Content

Normal volume of dry gas collected in Nm³ = V_{ng}
 Normal volume of water vapor associated Nm³ = V_{nva}
 Mass of condensed water in the line g = mH₂O

$$\% \text{ moisture on wet gas} = \frac{V_{nva} \times 100}{V_{ng} + V_{nva}} \quad \text{with} \quad V_{nva} = \frac{22.4 \times (MH_2O \div 1000)}{18}$$

CONVERTING A GAS CONTENT ON CONTENT ON DRY WET GAS

Content of dry gas = T_{gs}
 Moisture content of gases in % = % Moisture

$$\text{Content of wet gas} = \frac{T_{gs} \times (100 - \text{Moisture}\%) }{100}$$

CONVERT TO GAS MOISTURE CONTENT IN A CONTENT ON DRY GAS

Content on wet gases = T_{gh}
 Moisture content of gases in % = Moisture%

$$\text{Content of dry gas} = \frac{T_{gh} \times 100}{(100 - \text{Moisture}\%)}$$

REPORT CONTENT TO x % CO₂ DRY GAS

CO₂ content in dry gas measured TCO₂ = %
 Content relate to dry gas = T_{gs}

$$\text{Content relative to X \% CO}_2 \text{ dry gaz} = \frac{T_{gs} \times X}{TCO_2}$$

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REPORT CONTENT TO x % O₂ DRY GAS

O₂ content in dry gas measured in % = TO₂
 Content relate to dry gas = Tgs

$$\text{Content relative to } X \% \text{ O}_2 \text{ dry gas} = T_{gs} \times \frac{(21 - X)}{(21 - TO_2)}$$

CONVERT A CONCENTRATION EXPRESSED IN ppm IN A EXPRESSED IN mg/Nm³

Gross concentration in ppm = Tppm
 Molar mass of gas involved in g/mol = mol. mass

$$\text{content expressed in mg / Nm}^3 = T_{ppm} \times \frac{\text{mol. mass}}{22.4}$$

EXPRESS A VOLUME OF RAW GAS IN NORMAL CONDITIONS (1013 hPa and 0 ° C)

Local atmospheric pressure in mbar = Patmo
 Gas temperature in °C = T
 Volume of raw gas m³ = Vgb
 (the "N" in "Nm³" means "reduced to standard conditions of temperature and pressure")

$$\text{gas volume corrected to standard conditions in mg/Nm}^3 = V_{gb} \times \frac{273 \times Patmo}{(273 + T) \times 1013}$$

DENSITY OF GAS

Density of dry gas = pf
 Density of the water vapor sucked = p_{H₂O}
 Moisture Content = Moisture%
 Content of a constituent x = Tx
 Molar mass of a component x = Mx

$$\text{Density of gas} = pf * (100 - \text{Moisture}\%) + p_{H_2O}$$

$$\rho f = \left[\frac{MCO_2}{22.4} \times \frac{TCO_2}{100} \right] + \left[\frac{MO_2}{22.4} \times \frac{TO_2}{100} \right] + \left[\frac{MN_2}{22.4} \times \frac{(100 - TCO_2 - TO_2)}{100} \right]$$

$$\text{and } \rho_{H_2O} = \left[\frac{MH_2O}{22.4} \times \frac{\text{Moisture}\%}{100} \right]$$

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APPENDIX 1 - METHODOLOGY AND REGULATORY CONTEXT

Summary table presenting the methodology and / or equipment used to conduct the tests presented:

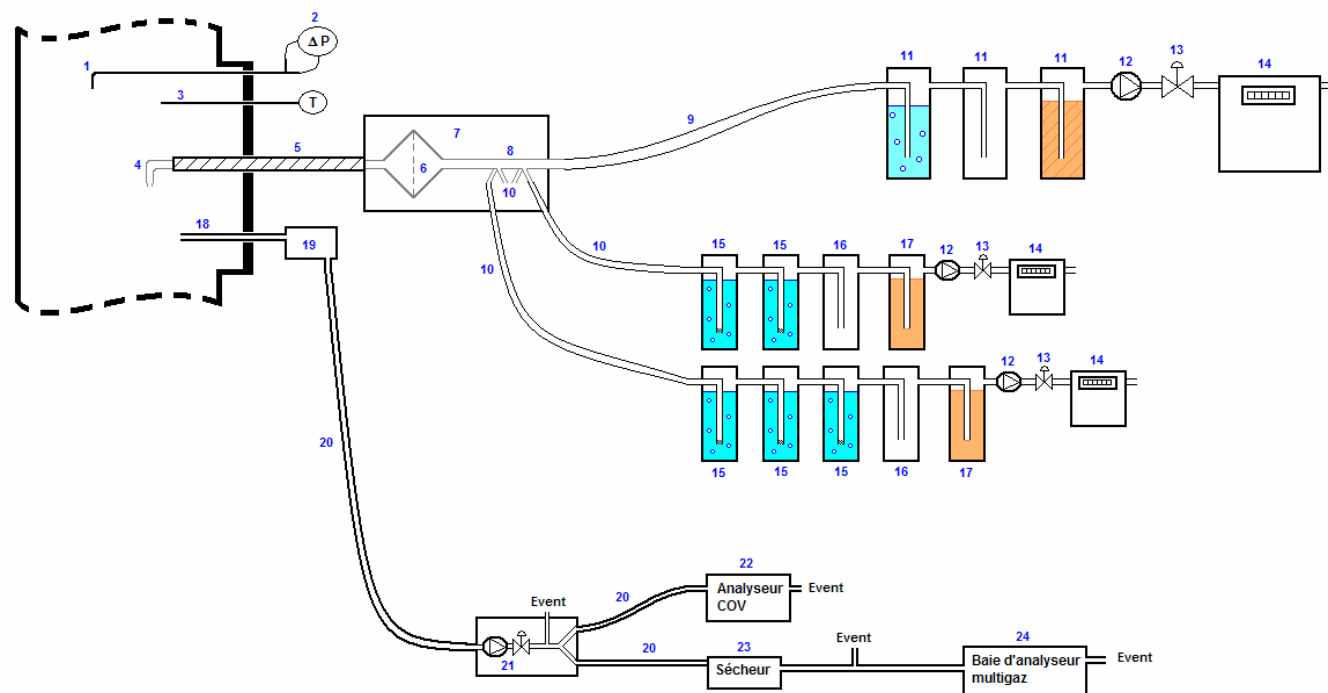
MEASURED PARAMETERS	METHODS AND EQUIPMENT	REFERENCE STANDARDS	MEASUREMENT RANGE AND/OR SCOPE
Homogeneity of gaseous pollutants	Determination of the homogeneity of the distribution of gaseous pollutants in the measuring section	NF EN 15259	-
-	Harmonization of standard procedures for their simultaneous implementation	GA X43-551	-
Atmospheric pressure	Barometer	-	at 0.5 mbar
Temperature	Thermocouple type K (chromel-alumel) or Plantine probe (Pt100 or Pt1000) and digital thermometer or data logger equipped with universal input.	NF EN 60584-1	at 0.1 °C
Moisture	Pumping and adsorption on silica gel after condensation (use diaphragm pump, gas meter and thermometer).	NF EN 14790	4 to 40% vol.
Sampling of gas for continuous analysis of O ₂ , CO ₂ , CO, NO _x	Sample taken by pumping using stainless steel probe. Filtration and drying by gas permeation, chiller, dryer	-	-
Oxygen (O ₂)	Analysis of oxygen based on its paramagnetic properties. The analyzers are calibrated on site with appropriate concentration of test gas to the measuring range.	NF EN 14789	1 to 25% vol.
Carbon Monoxide (CO)	Dosage by absorption in the infrared non-dispersive. The analyzers are calibrated on site with appropriate concentration of test gas to the measuring range.	NF EN 15058	0 to 740 mg/Nm ³
Nitrogen Oxides (NO ₂ and NO)	Chemiluminescence assay. The analyzers are calibrated on site with appropriate concentration of test gas to the measuring range.	NF EN 14792	1 to 1300 mg/Nm ³

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MEASURED PARAMETERS	METHODS AND EQUIPMENT	REFERENCE STANDARDS	MEASUREMENT RANGE AND/OR SCOPE
Carbon dioxide (CO ₂)	Dosage by absorption in the infrared non-dispersive. The analyzers are calibrated on site with appropriate concentration of test gas to the measuring range.	NF X 20-380	0 to 25% vol.
Total Volatile Organic Compounds (COVt)	Sampling by pumping using stainless steel probe. Heated filter, heated transfer line with PTFE core. Analysis of gross matrix. Assay by flame ionization detector. The analyzers are calibrated on site with appropriate concentration of test gas to the measuring range.	NF EN 12619	1 to 20mg/Nm ³
		NF EN 13526	20 to 500 mg/Nm ³
Data logging	Recording analog signals measurement (0-20 mA or 0 to 1000 mV) on a microcomputer and data acquisition system (16 channels).	~	standard 1 point every 5 seconds
Gas flow	Supplied by the client (see page 18 and 19 mass air flow)	~	~

The measurements were performed by placing the methodology that BV is usually implemented when measuring atmospheric emissions in chimney outlet of industrial facilities.

Usual Assembly diagram used by VERITAS for taking samples of dust, manual sampling and continuous gas samples



- 1 : Pitot tube
- 2 : Measurement of static and dynamic pressure
- 3 : Temperature measurement
- 4 : Pick-up nozzle
- 5 : Heated probe
- 6 : Filter holder
- 7 : Oven
- 8 : Multi-branch system
- 9 : Main line sampling (dust)
- 10 : Secondary lines sampling (bubblers) up to 4 secondary lines
- 11 : Cooling and drying system
- 12 : Pump
- 13 : Flow control valve
- 14 : meter
- 15 : Bubblers filled with absorption solution
- 16 : Bubbler guard
- 17 : Bubbler silica gel (for drying)
- 18 : Probe
- 19 : Heated filter
- 20 : Heated line
- 21 : Heated pump
- 22 : VOC Analyser
- 23 : Gas dryer
- 24 : Bay multigas analysis



APPENDIX 2 – GAS MOISTURE

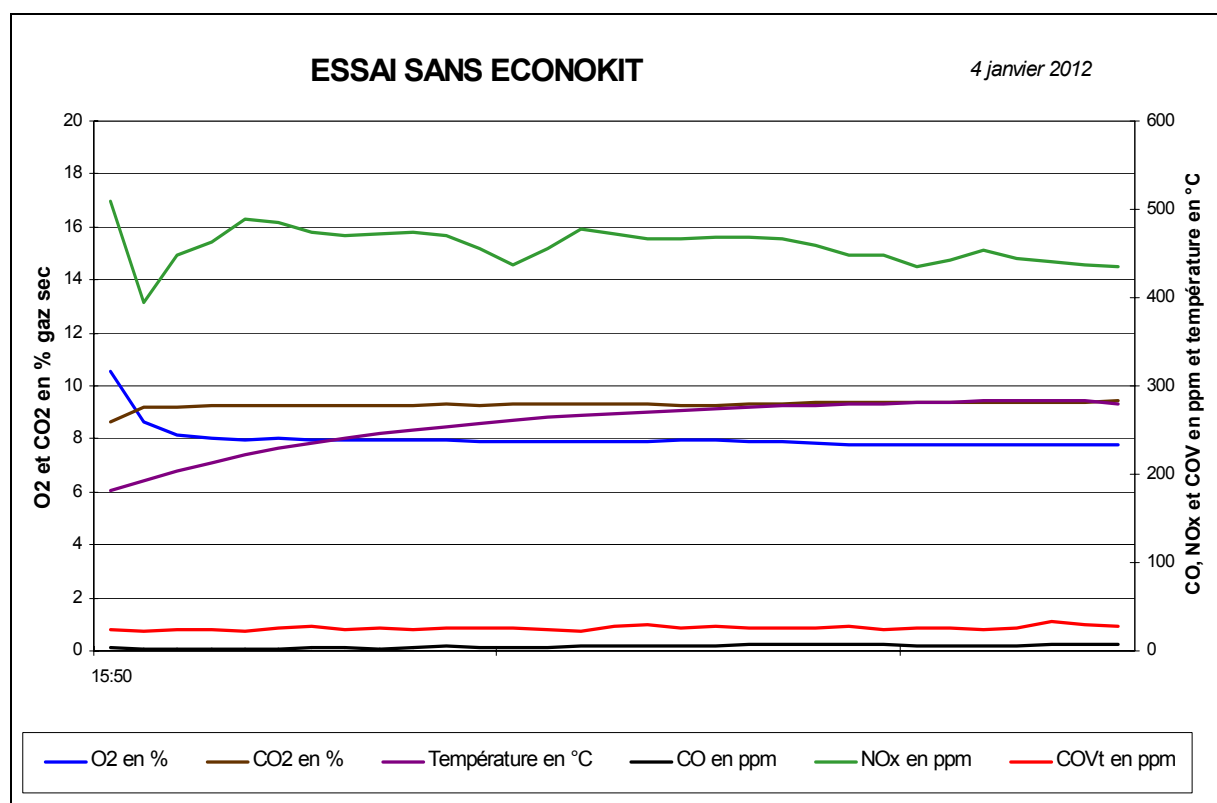
<i>Moisture content of the fumes (absorption/condensation)</i>		
Institution	UBIQUITY	
Test reference	TEST 1 WITHOUT ECONOKIT	
Measurement date	January 4, 2012	
Time	15:25 to 15:30	
	<i>Units</i>	<i>Values</i>
Mass of water collected	g	0.4
Mean gas temperature at the meter	°C	20
Local atmospheric pression	hPa	1014
Standard volume of dry gas collected	Nm ³	0.034
moisture content of the fumes	%	1.5 +/- 0.5
Density of gas	kg/Nm ³ wet	1.323

<i>Moisture content of the fumes (absorption/condensation)</i>		
Institution	UBIQUITY	
Test reference	TEST WITH ECONOKIT	
Measurement date	January 16, 2012	
Time	14:36 to 14:46	
	<i>Units</i>	<i>Values</i>
Mass of water collected	g	0.3
Mean gas temperature at the meter	°C	20
Local atmospheric pression	hPa	1011
Standard volume of dry gas collected	Nm ³	0.020
moisture content of the fumes	%	1.9 +/- 0.9
Density of gas	kg/Nm ³ wet	1.321

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APPENDIX 3 – CONTINUOUS GAS ANALYSIS

CONTINUOUS GAS ANALYSIS			
Institution	UBIQUITY		
Mark of the controlled installation	TEST WITHOUT ECONOKIT		
date of measures	January 4, 2012		
Time	15:50 to 15:55		
	Units	Values	
Local atmospheric pressure	hPa	1014	
moisture content of wet gas	%	1.5	+/- 0.5
Gas flow in standard conditions	Nm ³ /h wet gases	135	+/- 15
Oxygen	% dry gas	8.0	+/- 0.3
	% wet gas	7.9	
Measuring range : 0 to 25 %			
Carbon dioxide	% dry gas	9.3	+/- 0.3
	% wet gas	9.2	
Measuring Range : 0 to 20 %	kg/h	12.55	
Nitrogen oxides	ppm dry	459.1	
	mg/Nm ³ wet gas	927.3	+/- 58.6
	mg/Nm ³ dry gas	941.1	+/- 58.7
Measuring Range : 0 to 1000 ppm	g/h	125.6	
Carbon monoxide	ppm dry	4.9	
	mg/Nm ³ wet gas	6.0	+/- 0.5
	mg/Nm ³ dry gas	6.1	+/- 0.5
Measuring Range : 0 to 500 ppm	g/h	0.81	
Volatile Organic Compound (VOC) expressed in carbon	ppm dry	26.3	
	mg/Nm ³ wet gas	14.0	+/- 1.4
	mg/Nm ³ dry gas	14.2	+/- 1.5
Measuring Range: 0 to 100 ppm	g/h	1.89	

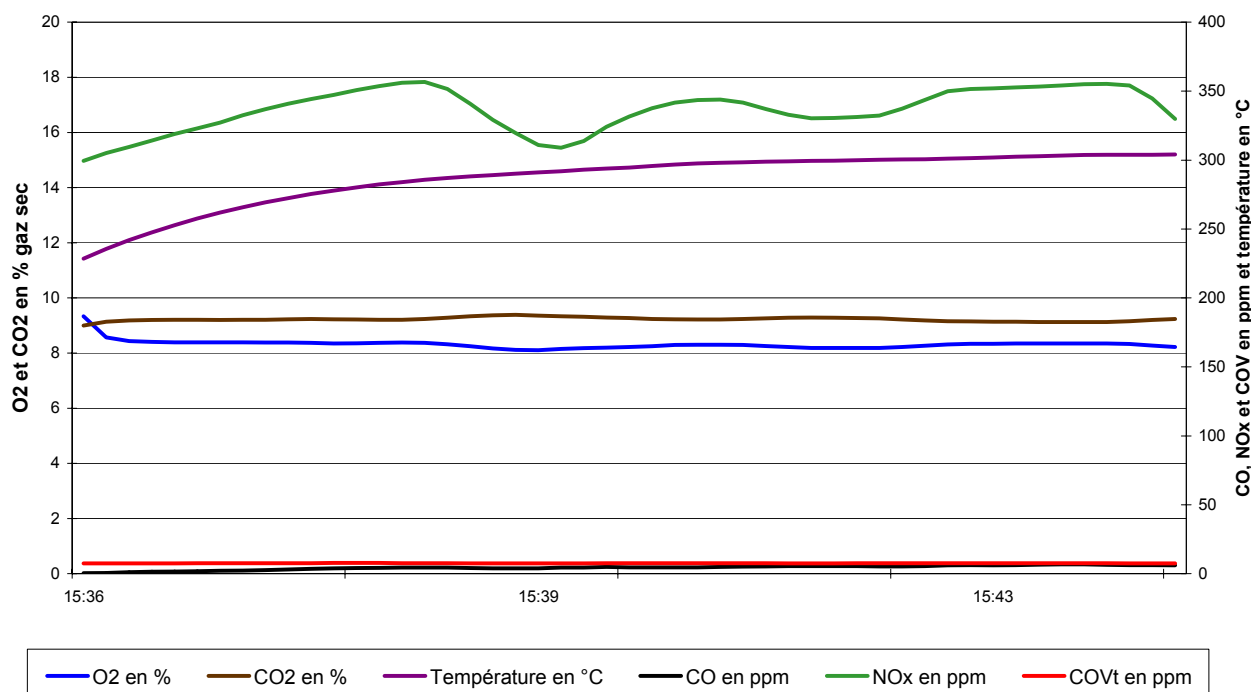


CONTINUOUS GAZ ANALYSIS

Institution	UBIQUITY		
Mark on the controlled installation	TEST WITH ECONOKIT		
date of measures	16 janvier 2012		
Time	15:36 à 15:44		
	Units	Valeurs	
Local atmospheric pressure	hPa	1011	
moisture content of wet gas	%	1.9	+/- 0.9
Gas flow in standrad conditions	Nm ³ /h wet gases	123	+/- 14
Oxygen	% dry gas	8.3	+/- 0.3
Measuring range : 0 to 25 %	% wet gas	8.2	
Carbon Dioxide	% dry gas	9.2	+/- 0.3
Measuring range : 0 to 20 %	% wet gas	9.1	
	kg/h	10.61	
Nitrogen oxides	ppm dry	336	
Measuring range : 0 to 1000 ppm	mg/Nm ³ wet gas	677	+/- 55
	mg/Nm ³ dry gas	690	+/- 54
	g/h	83.0	
Carbon monoxide	ppm dry	4.5	
Measuring range : 0 to 500 ppm	mg/Nm ³ wet gas	5.5	+/- 0.5
	mg/Nm ³ dry gas	5.6	+/- 0.5
	g/h	0.67	
Volatile organic compound (VOC) express in carbon	ppm dry	7.7	
Measuring range : 0 to 100 ppm	mg/Nm ³ wet gas	4.1	+/- 0.5
	mg/Nm ³ dry gas	4.2	+/- 0.5
	g/h	0.50	

ESSAI AVEC ECONOKIT

16 janvier 2012



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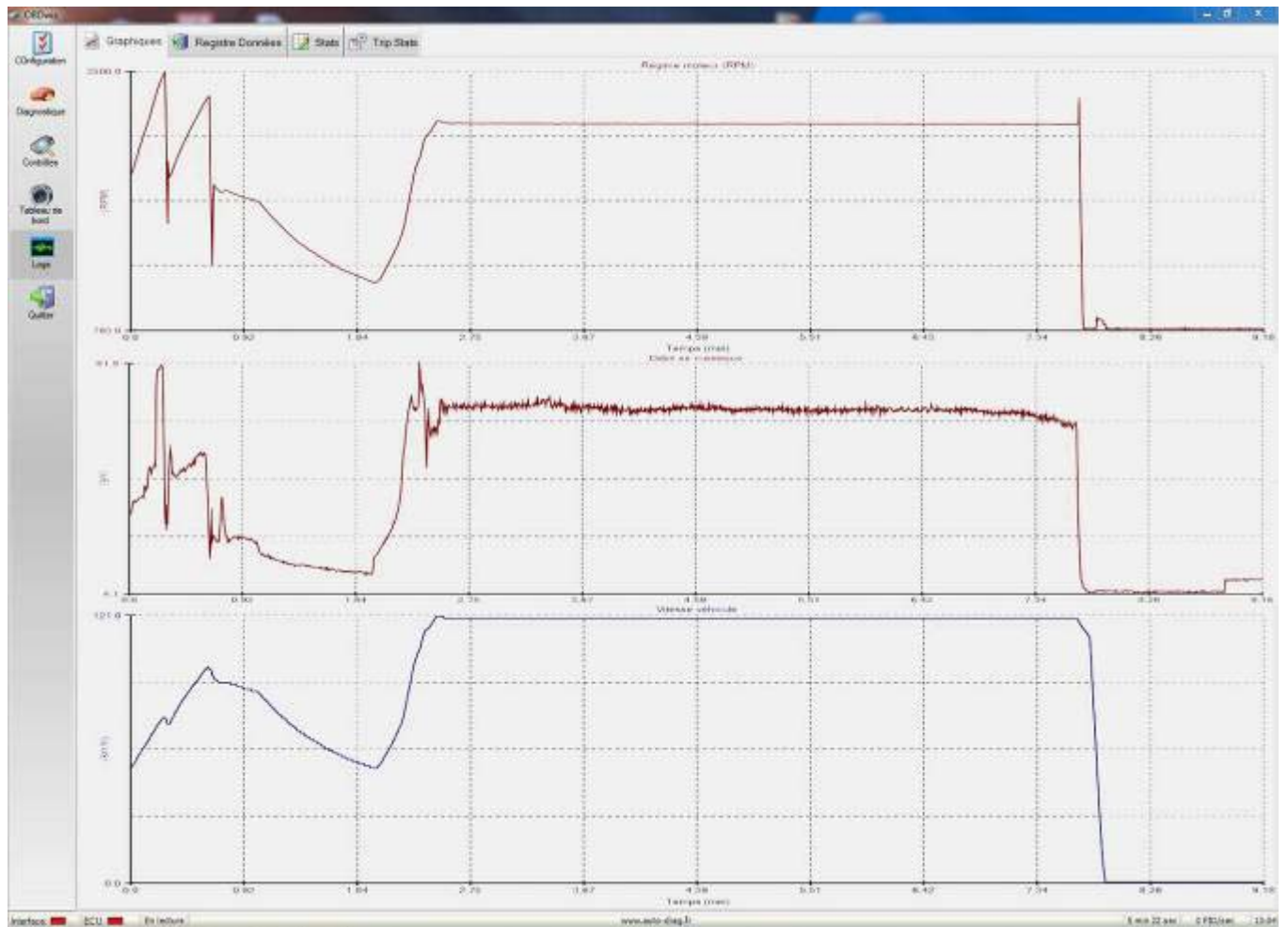
APPENDIX 4 - DOCUMENTS PROVIDED BY UBIQUITY

Paramètres de simulation ✕

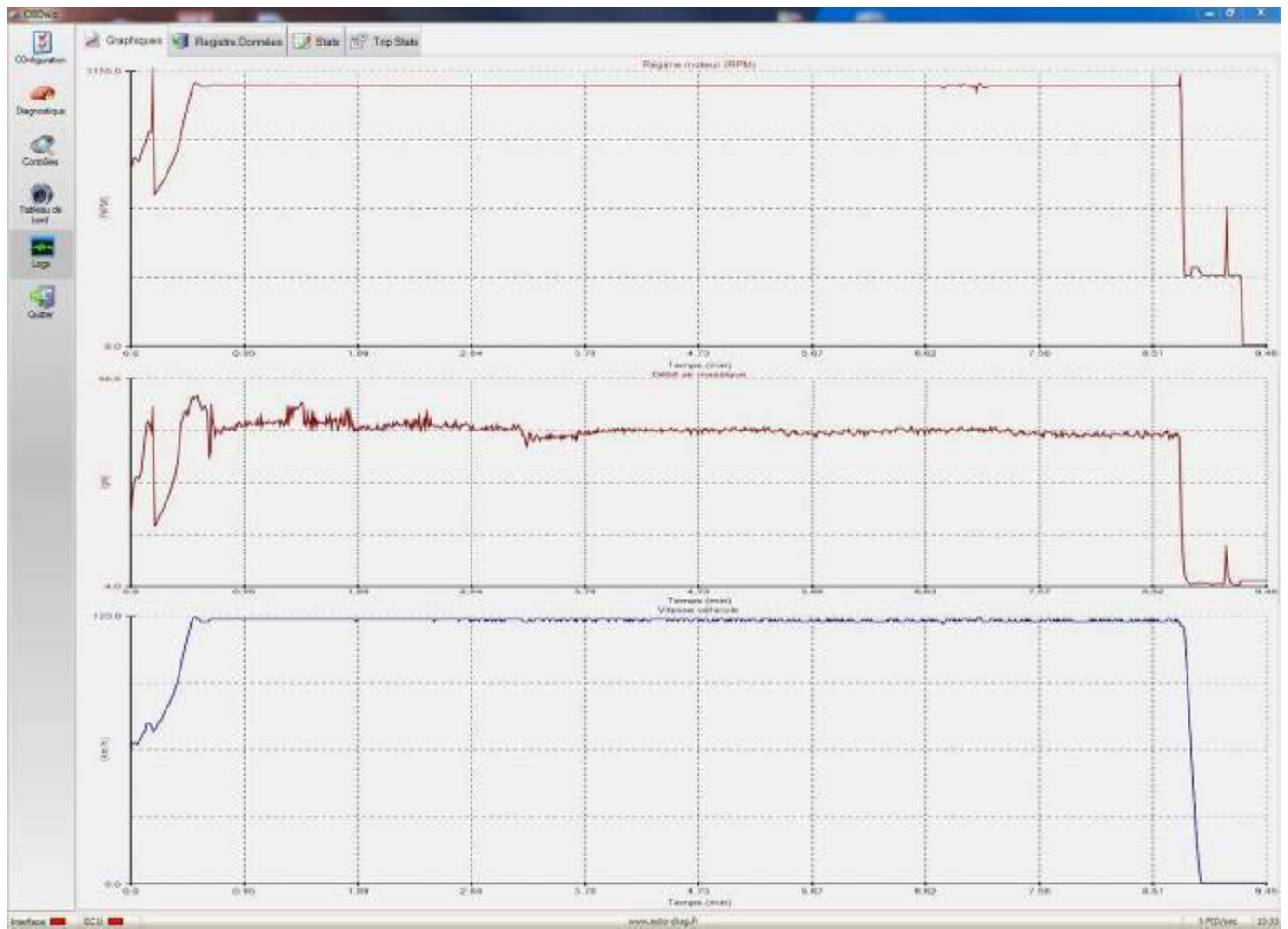
Loi de route

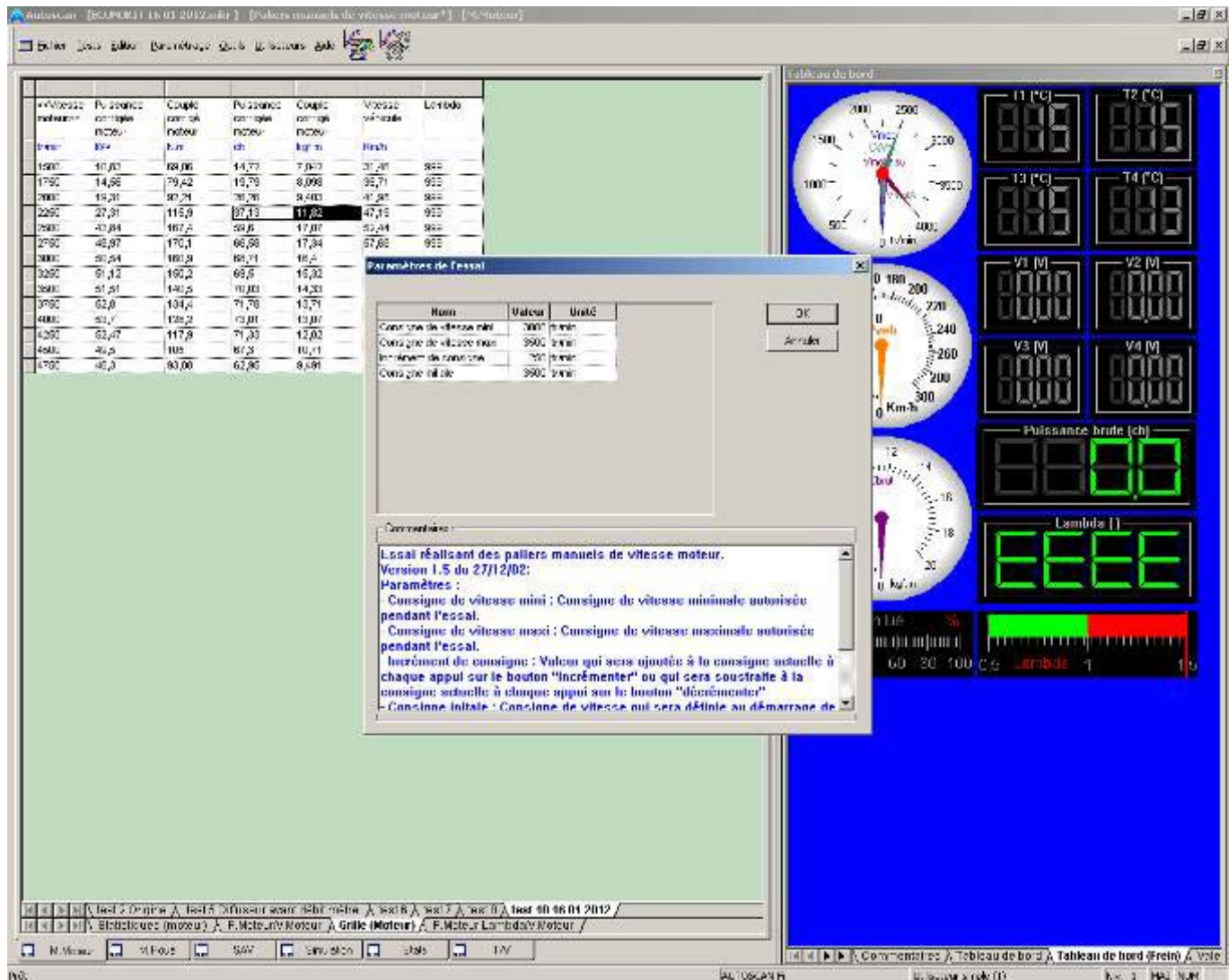
Masse véhicule	1150	kg (Déf.)
Coefficient de résistance au roulement	0,0125	
Surface apparente aérodynamique	0,8	m ² (Déf.)
Angle de la pente	2	° (Déf.)

Without Econokit :

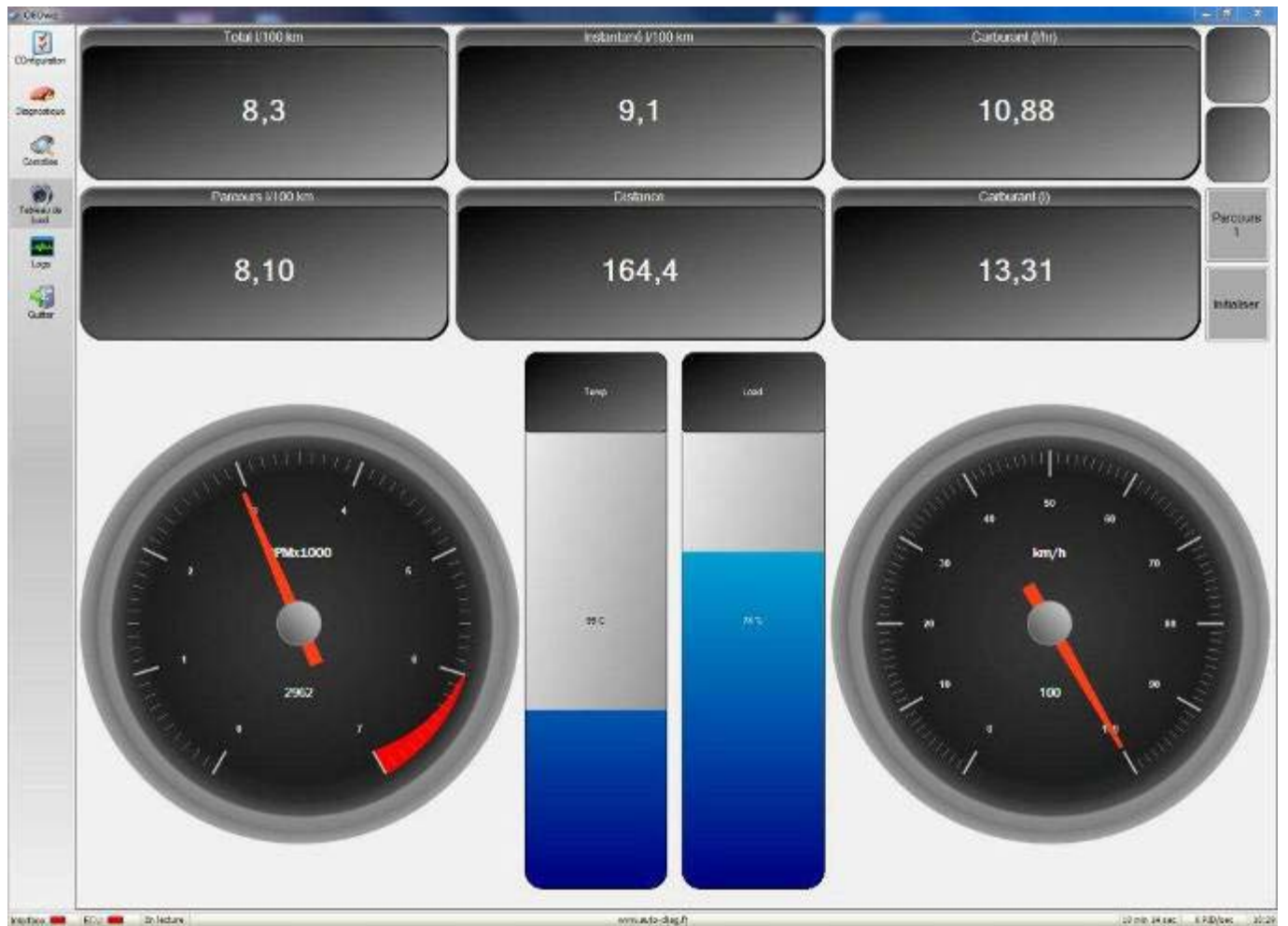


With Econokit :





Without Econokit :



With Econokit :



Without Econokit

With Econokit

B O S C H
 Contrôle de la pollution
 Rapport d'essai

 BEA-Version: V2.00-FRA
 OBD-Version: V2.08
 OBD-Mode: CT
 OBD-Type: VL
 RTM-Vers: v2.12
 Date: 04.01.2012
 Heure: 12:52

 Identification
 Immat.: 268 AWC 34
 Kilométrage: 78200
 Marque: FIAT
 Type: GRANDE PUNTO
 Modèle: 1.4 like multijet
 Appareil type: PL
 Moteur: Turbo

RESULTATS MESURAGE

 Témoin OBD contact ON:
 état visuel: allumé
 VIN:
 Somme erreurs: 0
 Distance OBD allumé: 0
 Témoin OBD moteur ON:
 état visuel: éteint
 statut calc.: éteint
 Protocoles détectés:
 ISO 15765

CONCLUSION DU TEST OBD

 Système OBD conforme

 Procédure de contrôle
 Mesurage conforme à la
 norme NF R 10-025

Résultats mesurage

 Moteur chaud T >= 80°C
 Régime 2910 /min
 Valeur limite 3.00 m⁴
 C1= 1.56 m⁴

B O S C H
 Contrôle de la pollution
 Rapport d'essai

 BEA-Version: V2.00-FRA
 OBD-Version: V2.08
 OBD-Mode: CT
 OBD-Type: VL
 RTM-Vers: v2.12
 Date: 16.01.2012
 Heure: 19:02

 Identification
 Immat.:
 Kilométrage:
 Marque:
 Type:
 Modèle:
 Appareil type: PL
 Moteur: Turbo

RESULTATS MESURAGE

 Témoin OBD contact ON:
 état visuel: allumé
 VIN:
 Somme erreurs: 0
 Distance OBD allumé: 0
 Témoin OBD moteur ON:
 état visuel: éteint
 statut calc.: éteint
 Protocoles détectés:
 ISO 15765

CONCLUSION DU TEST OBD

 Système OBD conforme

 Procédure de contrôle
 Mesurage
 non conforme à la
 norme NF R 10-025

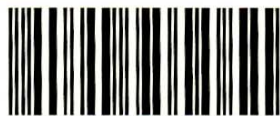
Résultats mesurage

 Moteur chaud T >= 80°C
 Régime 2800 /min
 Valeur limite 3.00 m⁴
 C1= 0.65 m⁴

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N° Z 005724274

PROCÈS-VERBAL DE CONTRÔLE TECHNIQUE D'UN VÉHICULE AUTOMOBILE

Version Logiciel : U07.03

EXEMPLAIRE REMIS A L'USAGER

NATURE DU CONTRÔLE	DATE DU CONTRÔLE	N° DU PROCÈS-VERBAL
Visite technique périodique	16/01/2012	12000099

IDENTIFICATION DE L'INSTALLATION DE CONTRÔLE	DÉFAUTS OU ANOMALIES CONSTATÉS
N° D'AGRÈMENT : S013Z104 RAISON SOCIALE : CENTROTECH M. FANCIULLO ADRESSE : 55 RUE JEAN DE GUIRAMAND 13858 AIX-EN-PCE CEDEX 3 Tel : 04 42 39 86 95 - Fax : 04 42 24 42 60	Documents présentés : A1 : Certificat d'immatriculation (Carte Grise) 1 - Défaits à corriger avec contre-visite : 0 2 - Défaits à corriger sans contre-visite : 0

IDENTITÉ DU CONTRÔLEUR
NOM ET PRÉNOM : LE GARREC Christian N° D'AGRÈMENT : 013Z0725 SIGNATURE :

INFORMATION SUR LA VISITE TECHNIQUE PÉRIODIQUE DÉFAVORABLE
PROCÈS-VERBAL N° : DATE : N° D'AGRÈMENT DE L'INSTALLATION :

IDENTIFICATION DU VÉHICULE																				
<table border="1"><thead><tr><th>N° Immatriculation</th><th>Date d'immatriculation</th><th>Date de 1^{ère} mise en circulation</th></tr></thead><tbody><tr><td></td><td>01/12/2006</td><td>01/12/2006</td></tr></tbody></table> <table border="1"><thead><tr><th>Genre</th><th>Marque</th><th>Type</th></tr></thead><tbody><tr><td>CTTE</td><td>FIAT</td><td>UFT5111HL935</td></tr></tbody></table> <table border="1"><thead><tr><th>N° dans la série du type</th><th>Énergie</th></tr></thead><tbody><tr><td>ZFA19900000198009</td><td>GO</td></tr></tbody></table> <table border="1"><thead><tr><th>Kilométrage inscrit au compteur</th><th>Désignation commerciale</th></tr></thead><tbody><tr><td>78836</td><td>PUNTO</td></tr></tbody></table>	N° Immatriculation	Date d'immatriculation	Date de 1 ^{ère} mise en circulation		01/12/2006	01/12/2006	Genre	Marque	Type	CTTE	FIAT	UFT5111HL935	N° dans la série du type	Énergie	ZFA19900000198009	GO	Kilométrage inscrit au compteur	Désignation commerciale	78836	PUNTO
N° Immatriculation	Date d'immatriculation	Date de 1 ^{ère} mise en circulation																		
	01/12/2006	01/12/2006																		
Genre	Marque	Type																		
CTTE	FIAT	UFT5111HL935																		
N° dans la série du type	Énergie																			
ZFA19900000198009	GO																			
Kilométrage inscrit au compteur	Désignation commerciale																			
78836	PUNTO																			

TITULAIRE DU CERTIFICAT D'IMMATRICULATION
NOM, PRÉNOM OU RAISON SOCIALE : ADRESSE :

RÉSULTAT DU CONTRÔLE TECHNIQUE	MESURES
NATURE ET DATE DU PROCHAIN CONTRÔLE : VISITE TECHNIQUE PÉRIODIQUE AU PLUS TARD : 16/01/2014 VISITE COMPLÉMENTAIRE AU PLUS TARD : 16/01/2013	Pollution : C1 : 00.65 / C2 : 00.53 Ripage : Essieu 1 : +00.3 Suspension : Dissymétrie : AV : 002 - AR : 002 Forces verticales : AV : 0767 - AR : 0473 Freinage : Frein de service : Force de freinage max. : AVG : 295 - AVD : 319 - ARG : 136 - ARD : 159 Déséquilibre freinage : AV : 007 - AR : 014 Taux d'efficacité global : 073 Frein de stationnement : Taux d'efficacité : 025 Projecteurs : Projecteurs : Feux de croisement : D : -0.7 % G : -0.7 % h < 0.8m

INFORMATIONS IMPORTANTES AU VERSO

N° rapport :
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date : 21/03/12
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