ATDS Emission Lab Test Report

for Exhaust Emission Test Procedures according

Date:	10/27/2023	**Start Time:**	11:54:49
Test Number:	ONT3_006035	**End Time:**	12:50:12
Test Vehicle:	3225_ECRXT03.05PV-118		
Test Legislation:	EPA1066		
Test Cycle:	US06+US06		
Test Purpose:	Certification		
Test Cell:	iGEM-V-TC1		
Order Number:	3225		
Remark:	CONSENT DECREE		

QUALITY ASSURANCE

INSPECTED BY: REDACTED

DATE: 10/30/2023

COMMENTS: REDACTED

General Data

Test Number	*ONT3_006035*		
Test Name	*US06_US06*		
Test Cell	*iGEM-V-TC1*		
Test Type	*US06_US06*		
Legislation	*EPA1066*		
Requirements (Bag)	*CERTIFICATION*		
Requirements (Modal)	*CERTIFICATION*		
Date	*10/27/2023*	CH_4 Response Factor	
Test Start	*11:54:49*	Odometer Position [mi]	*115894*
Start Time Cycle	*2023-10-27 12|22-50-(000)*	Delay Time Method	
Test End	*12:50:12*		
Operator	**REDACTED**	Air Condition	*OFF*
Driver	**REDACTED**	Particle Measurement	USUAL
Shifttable	*Auto*		
Flow Stream	*ModalDirty*		
Calibrated Ranges	*autorange*		
Remark	*CONSENT DECREE*		

Vehicle Data — *3225_ECRXT03.05PV-118*

Manufacturer	*CHEROKEE*	Displacement	
Vehicle Model	**REDACTED**	Engine Family	*ECRXT03.05PV*
Order Number	*3225*	Manufacturer	*JEEP*
Test Group	*3225_ECRXT03.05PV-118*	Transmission	*Automatic*
Evaporative Family		Engine Code	
Made Date	*2014*	License Plate	
Tire Manufacturer		Trim Level	
Tire Model		Axle Ratio	*1*
Tire Size		Drive Axle Weight [lbs]	
Tire Pressure [psi]	*0*	Tank Volume [gal]	*0*
Engine Code	*ECRXT03.05PV*	Tank Material	
Number of Cylinders	*6*		

Dyno Data — *3225*

Dyno Type	*SVOR*	Inertia [lb]	*5500.00*
	A [lbf]	B [lbf/mph]	C [lbf/mph2]
Street Load	*60.490*	*-0.01010*	*0.032530*
Road Load	*16.600*	*0.39900*	*0.026200*

Fuel Data — *Diesel-S-000266*

Fuel Type	*DIESEL*	Fuel Temperature [°C]	*15.00*
Fuel Analyze Date		Fuel Density [kg/l]	*0.8540*
Fuel Manufacturer		Net Heat. Val. [BTU/lb]	*18382*
Fuel Tank Number		Carb. Weight Frac.	*0.8700*
Fuel Charge		HC Ratio	*1.7945*
Remarks:		OC Ratio	*-1.0000*

Weather Limit Data

Temp Min [deg F]	*68.00*	Dew Point Max [deg F]	*100.00*
Temp Max [deg F]	*86.00*	Pressure Min [mbar]	*800.0*
Dew Point Min [deg F]	*15.01*	Pressure Max [mbar]	*1100.0*

Fan Speed Data — *RoadSpeed*

F1 [%]	F2 [%/mph]	F3 [%/mph2]
5	0.745999992	0.0031

Test Data	US06_US06	Operator	Tomas Rodriguez	Speed Table		Date:	10/27/2023
Test Number	ONT3_006035	Driver	Domenic Coppola	Shift Table Auto		Cold Start	

Vehicle		**Dyno**		**Fuel**		**Test Timing**	
Vehicle #	REDACTED	Inertia [lb]	5500.00	Diesel-S-000266		Start Time	11:54:49
		A [lbf]	16.600	Fuel type	DIESEL	End Time	12:50:12
Model	CHEROKEE	B [lbf/mph]	0.39900	Density	0.8540		
Year	2014	C [lbf/mph2]	0.026200	NHV	18382	Soak Time	
Displacement:				CWF	0.8700		
Engine Family	ECRXT03.05PV						
Trans	Automatic	Flow Stream	ModalDirty				
Odometer [mile]	115894	Remark	CONSENT DECREE				

Bag Analysis

PHASE 1	THC [ppmC]	CO [ppm]	CO_2 [%]	NO_X [ppm]	N_2O [ppm]	CH_4 [ppm]	NMHC [ppm]				
Range	100	50	1	30		30		Temp. [°F]	77.73	Volume [scf]	8013
Zero Read	0.00	0.0	0.0	0.0		0.0		Press. [in-Hg]	28.99	D.F.	17.54
Span Read	93.30	46.69	0.930	27.490		27.600		RH [%]	33.49	Ph. Start [s]	660.3
Sample	-1.99	0.11	0.729	1.241		0.035	-1.989	AH [gr/lb]	6.960	Ph. End [s]	1287.0
Mass	0.000	0.030	3034.918	0.451		0.005	0.000	Dist. [mi]	8.04	Ph. Length [s]	595.8
Mass per Dist.	0.0000	0.0037	377.569	0.0598		0.0007	0.0000	NO_X Corr.	0.8902	Bag An. Del	621
								Dr. Viola.	0	Vio. Durat. [s]	0.0
								Crank [s]	0.00	FE [mile/gal]	27.0
PSS Massflow Particles [g/h]	0.0227		PSS Mass per Dist. [g/mile]				0.0005				

Total Result

actual	THC [g/mile]	CO [g/mile]	CO_2 [g/mile]	NOX [g/mile]	N_2O [g/mile]	CH_4 [g/mile]	NMHC [g/mile]	$HC+NO_X$ [g/mile]	***Fuel Economy***	
Mass per Dist.	0.0000	0.0037	377.57	0.0598		0.0007	0.0000	0.0598	mile/gal	26.95
Mass per Dist. (rounded)	0.0000	0.0037	377.6	0.0598		0.0007	0.0000	0.0598	Dist. [mi]	8.04

Mass per Dist. - Particulate PSS 0.0005

Test Data: US06_US06 Operator: **REDACTED** Date: 10/27/2023
Test Number: ONT3_006035 Driver: **REDACTED**

Driver Violations

		P1	I1	Phase1
Number of Violations	-	0	0	0
Duration of Violations	(s)	0.0	0.0	0.0

Number	Phase	Violation Begin (s)	Violation End (s)	Violation Duration (s)	Scheduled Speed (mph)	Max Speed Deviation (mph)
No Violations In This Test				0.0		

Test Record #: ONT3_006035

Phase 1

Analyzer Adjust

	Range Number	Range	Zero Value	Zero Set Value	Zero Offset	Span Value	Span Set Value	Span Offset	ReZero Value
		ppm	ppm	ppm	%	ppm	ppm	%	ppm
CO_2 (%)	1	1	0.00	0.00	-0.03	0.93	0.93	0.01	0.00
CO	1	50	0.03	0.00	0.06	46.69	46.71	-0.04	0.01
NO_X	1	30	-0.02	0.00	-0.07	27.49	27.51	-0.07	0.01
THC (ppmC1)	2	30	0.00	0.00	0.01	28.41	28.41	0.00	0.07
CH_4	1	30	0.00	0.00	0.00	27.60	27.60	0.00	0.00

Analyzer Check

	Range Number	Range	Zero Value	Zero Set Value	Zero Drift	Span Value	Span Set Value	Span Drift
		ppm	ppm	ppm	%	ppm	ppm	%
CO_2 (%)	1	1	0.00	0.00	0.00	0.93	0.93	-0.30
CO	1	50	0.07	0.00	0.11	46.63	46.71	-0.12
NO_X	1	30	0.00	0.00	-0.03	27.46	27.51	-0.11
THC (ppmC1)	2	30	0.05	0.00	-0.05	28.46	28.41	0.18
CH_4	1	30	0.00	0.00	0.00	27.55	27.60	-0.15

Operator	**REDACTED**	Driver	**REDACTED**	Customer :	3225
Test Purpose:	Certification	Legislation:	*EPA1066*	Requirements (Bag)	*CERTIFICATION*
Conditioning:		Emission Standards	Default		

Test Intent: *CONSENT DECREE*

VIN **REDACTED**

DYNO Data

	Road Load	Street Load
Inertia [lb]	*5500.00*	
A [N]	*73.840*	*269.073*
B [N/km/h]	*1.10284*	*-0.02792*
C [N/km2/h2]	*0.044998*	*0.055869*

	Phase1	Phase2	Phase3	Phase4	Weighted
Distance (m)					
Target	12887.54				12887.54
Driven	12933.02				12933.02
Distance Rating (%)	0.3529				0.3529
Cycle Energy (MJ)					
Target	14.45				14.45
Driven	14.22				14.22
Distance per Energy Cycle (m/MJ)					
Target	14.45				891.84
Driven	14.22				909.36
Road Load Work Fraction					
Target	0.5439				0.5439
Driven	0.5673				0.5673
Inertial Work (MJ)					
Target	6.59				6.59
Driven	6.15				6.15
Inertial Work Fraction					
Target	0.4561				0.4561
Driven	0.4327				0.4327
Inertial Work Rating (%)	-6.6247				-6.6247
Absolute Speed Change (m/s)					
Target	360.04				360.04
Driven	344.50				344.50
Absolute Speed Change Rating (%)	-4.3165				-4.3165
Energy Rating (%)	-1.5802				-1.5802
Energy Economy Rating (%)	-1.9641				-1.9641

Operator	**REDACTED**	Driver	**REDACTED**	Customer :	3225
Test Purpose: Certification		Legislatio	*EPA1066*	Requirements (Bag)	*CERTIFICATION*
Conditioning:		Emission	Default		

Overall Status: Passed

Phase 1

Test Record #: ONT3_006035 Vehicle ID: **REDACTED**

		Average	Min	Max	Low Limit	Upper Limit	Status
General							
Cell Temperature	(°C)	25.40	24.40	26.10	20.00	30.00	Passed
Barometer	(mbar)	981.65	981.50	981.80	800.00	1100.00	Passed
Dew Point Temperature	(°C)	8.18	7.10	8.60	-9.44	37.78	Passed
Specific Humidity Test Cell	(gr/lb)	48.72	45.04	50.31	38.50	87.50	Passed
Dilution Air Temperature	(°C)	35.82	35.55	36.15	15.00	52.00	Passed
Weighted Test Dilution Factor	(-)	17.54			7.00	20.00	Passed
Dilution Factor	(-)	17.54			7.00	20.00	Passed
Fuel Economy	(mpg)	26.95			10.00	50.00	Passed
Zero Offset	(%)	-	-0.07	0.06	-2.00	2.00	Passed
Span Offset	(%)	-	-0.07	0.01	-2.00	2.00	Passed
Zero Check Drift	(%)	-	-0.05	0.11	-2.00	2.00	Passed
Span Check Drift	(%)	-	-0.30	0.18	-2.00	2.00	Passed
Bag vs. Modal Validation (CO2)	(%)	n.a.	-	-	-10.00	10.00	Passed
Ambient Concentrations							
HC	(ppm)	5.82			2.00	10.00	Passed
NO_x	(ppm)	0.02			-0.10	10.00	Passed
CO	(ppm)	3.40			0.00	15.00	Passed
CO_2	(ppm)	496.17			300.00	650.00	Passed
CH_4	(ppm)	2.29			1.30	10.00	Passed
N2O	(ppm)				0.20	0.50	
PM Filter Parameters							
Particulate Filter Temperature	(°C)	51.88	42.25	53.35	42.00	60.00	Passed
Filter Face Velocity	(cm/s)	91.71			0.00	100.00	Passed
Particulate Result Validation	(ug)	9.00			1.00	600.00	Passed
Test-Cycle Specific Validations							
Phase Distance	(miles)	8.04			7.85	8.17	Passed
Sample Phase Time	(s)	595.8			594.7	598.7	Passed
Duration Phase 1	(s)	596.70					NA
Crank Time Phase1	(s)	0.00			0	5	Passed
Crank Time Phase3	(s)				0	5	
Crank Counts		0			0	1	Passed
Shutdown Time Phase 1					0	5	
Shutdown Time Phase 3					0	5	
Hot Soak Time	(s)				540.00	660.00	
Test Hold Counts		0					Passed
Duration Test Hold	(s)	0.00			0	60	Passed