

Test = EPA 75

Options = CVS Bag Di1 Sec ShowTo1 Methane Mod1Methane MethaneRF

Test Inrt Start = 28 April 2021 09:05:20
Posttest Completed At = 28 April 2021 10:20:14
Hot Soak Start Time = 27 April 2021 21:00:00

Test Start = 28 April 2021 09:23:17
Test Finish = 28 April 2021 10:03:47

Personnel Information::

Driver = REDACTED
Requestor = REDACTED

Operator = REDACTED
Supervisor = REDACTED

Vehicle Information:

VIN = REDACTED
Vehicle Model = JEEP GRAN CHEROKEE
Engine Family = ECRXT03.05PV ✓
Ignition Status = No
Automatic = 1
Sample Delay =

Cert Tracking ID = 3029-ECRXT0305PV-244
Model Year = 2014
Eng. Disp. = 3.0L
Transmission =
Idle RPM =

Vehicle Conditions:

Soak Start Time: = APR 27, 2021 21:00

Ambient Limit Type = OTHER7

Test Specifications:

TO-Number = W0110
TestNet Number = 3029

CVS BulkStream Flow : = 2) 350 scfm

Dynamometer:

Inertia = 5500 (1b) ✓
Road Load B = 0.3804 ✓

Road Load A = 17.89 (1bs) ✓
Road Load C = 0.02537 ✓

Fuel Information:

Fuel = DIE-DJ1621HW10 ✓
NHV = 18083.00
CWF = 0.8710
HWF = 0.1290

Specific gravity = 0.8520
Fuel R-Factor = 0.60
OWF = 0.0000
Fuel Calculation Type = Diesel/EPA Calcs

Phase Information:

Phase 1 Shift Tables
Phase 2 AUTO
Phase 3 Con't
AUTO

Response Factors:

Bag Methane = 1.05

Pre Test Remarks:

TEST #1 AS RECEIVED

Post Test Remarks:

Non-Critical Information:

Begin Odo = 66507
Test end Odometer = 66518
Engine performance = No Problem
Transmission = No Problem

Idle RPM =
Driveability = Good
Brakes = No Problem
Vehicle stalls = None

AD QUALITY ASSURANCE

INSPECTED BY: REDACTED

DATE: 4-28-21

COMMENTS: Okay

SUMMARY REPORT

Test = EPA 75 Test Id = ONT52253 TestNet Number = 3029
 Options = CVS Bag Dil Sec ShowTol Methane ModalMethane MethaneRF
 Test Init Start = 28 April 2021 09:05:20 Fuel Calculation Type = Diesel/EPA Calcs

Idle RPM = Driver = **REDACTED**

MASS calculated by DF method

Phase 1 Bag 1	THC (ppmC)	CO (ppm)	NOX (ppm)	CO2 (%)	CH4 (ppmC)	NM-HC (wRF)	FE (mpg)
Range	30.0	500	100	2.00	10.0		
Sample	13.876	43.82	4.15	1.1031	4.912		
Range	30.0	500	100	2.00	10.0		
Ambient	3.959	1.88	0.09	0.0603	2.213		
Net Conc.	10.244	42.09	4.07	1.0478	2.883	7.2263	
Modal Corr.	0.0020	0.0129	0.0018	5.0391	0.0008	0.0012	
Grams/ph.	0.4665	3.8648	0.5543	1512.5073	0.1520	0.3289	24.0510
Grams/mi	0.1297	1.0749	0.1542	420.6596	0.0423	0.0915	

Phase 2 Bag 2	THC (ppmC)	CO (ppm)	NOX (ppm)	CO2 (%)	CH4 (ppmC)	NM-HC (wRF)	FE (mpg)
Range	30.0	50.0	100	2.00	10.0		
Sample	9.106	1.797	0.03	0.6624	6.411		
Range	30.0	50.0	100	2.00	10.0		
Ambient	3.905	1.940	-0.02	0.0588	2.216		
Net Conc.	5.395	0.000	0.03	0.6065	4.304	0.8879	
Modal Corr.	0.0022	0.0010	0.0000	5.2161	0.0018	0.0006	
Grams/ph.	0.4213	0.0010	0.0071	1500.3455	0.3886	0.0695	26.0687
Grams/mi	0.1095	0.0003	0.0018	389.7774	0.1010	0.0181	

Phase 3 Bag 3	THC (ppmC)	CO (ppm)	NOX (ppm)	CO2 (%)	CH4 (ppmC)	NM-HC (wRF)	FE (mpg)
Range	30.0	50.0	100	2.00	10.0		
Sample	9.629	1.035	0.23	0.9165	7.449		
Range	30.0	50.0	100	2.00	10.0		
Ambient	3.468	1.148	0.01	0.0600	2.211		
Net Conc.	6.398	0.000	0.22	0.8606	5.390	0.7552	
Modal Corr.	0.0013	0.0003	0.0001	4.1941	0.0012	0.0002	
Grams/ph.	0.2906	0.0003	0.0296	1238.7891	0.2831	0.0344	29.4732
Grams/mi	0.0810	0.0001	0.0083	345.1538	0.0789	0.0096	

Test Summary	THC	CO	NOX	CO2	CH4	NM-HC (wRF)	FE (mpg)
Wtd Results							
Grams g/mi	0.1058	0.2234	0.0352	383.9179	0.0827	0.0310	26.4526
Grams g/mi	0.106	0.22	0.04	384	0.083	0.031	
Phs1&2 gms	0.8878	3.8657	0.5614	3012.8528	0.5406	0.3985	
Phs1&2 g/mi	0.1193	0.5193	0.0754	404.6924	0.0726	0.0535	
Phs2&3 gms	0.7119	0.0013	0.0367	2739.1345	0.6717	0.1089	
Phs2&3 g/mi	0.0957	0.0002	0.0049	368.2459	0.0903	0.0140	

----- Dyno Information -----
 Inertia = 5500
 Inertia Units = 1b
 Dynamometer will be set manually = False
 Dyno Coefficient Units = 2
 Road Load A = 17.89
 Road Load B = 0.3804
 Road Load C = 0.02537
 Use Augmented Braking System? = False

AD QUALITY ASSURANCE
 27.6288

REDACTED

INSPECTED BY: _____

DATE: 4-28-21

COMMENTS: Okay

SUMMARY REPORT

MODE NO.	MODE TYPE	TEST TIME sec	MODE TIME sec	DIST mi	SAMPLE POINT	DILUTE CONCENTRATIONS					CVS		MODAL			GRAMS			F.E. mpg	D/V
						THC ppmC	CO ppm	NOX ppm	CO2 %	CH4 ppmC	VOLUME ft3	THC	CO	NOX	CO2	CH4	NMHC wRF			
<u>PHASE One MODAL SUMMARY</u>																				
	CRANK			0.000	DIL						8.27	0.000	0.00	0.000	0.0	0.000	0.000	0.00	0.0	
	IDLE			0.002	DIL						516.79	0.039	0.10	0.030	83.8	0.033	0.000	0.32	0.0	
	ACCEL			0.871	DIL						660.20	0.148	0.66	0.117	301.1	0.078	0.000	29.29	0.0	
	CRUISE			1.827	DIL						912.88	0.216	2.62	0.353	741.2	0.091	0.000	24.92	0.0	
	DECEL			0.896	DIL						687.16	0.067	0.61	0.044	376.9	0.045	0.000	24.11	0.0	
	TOTAL			3.596	DIL						2785.30	0.470	3.99	0.545	1503.1	0.248	0.000	24.22	0.0	
<u>PHASE Two MODAL SUMMARY</u>																				
	IDLE			0.001	DIL						825.59	0.059	0.04	-0.001	159.9	0.086	0.000	0.38	0.0	
	ACCEL			1.271	DIL						1482.31	0.039	0.07	-0.002	271.4	0.086	0.000	47.61	0.0	
	CRUISE			1.817	DIL						1399.60	0.187	0.06	-0.002	589.1	0.215	0.000	31.35	0.0	
	DECEL			0.760	DIL						1064.69	0.151	0.04	-0.002	484.6	0.173	0.000	15.94	0.0	
	TOTAL			3.849	DIL						4772.18	0.435	0.22	-0.006	1505.0	0.559	0.000	26.00	0.0	
<u>PHASE Three MODAL SUMMARY</u>																				
	CRANK			0.000	DIL						6.06	0.000	0.00	0.000	0.0	0.000	0.000	0.01	0.0	
	IDLE			0.001	DIL						515.73	0.037	0.01	-0.001	58.6	0.059	0.000	0.22	0.0	
	ACCEL			0.868	DIL						658.80	0.037	0.01	0.006	223.1	0.051	0.000	39.57	0.0	
	CRUISE			1.828	DIL						911.02	0.168	0.01	0.021	636.5	0.213	0.000	29.19	0.0	
	DECEL			0.892	DIL						685.57	0.032	0.01	0.000	318.4	0.057	0.000	28.51	0.0	
	TOTAL			3.589	DIL						2777.17	0.274	0.05	0.026	1236.6	0.381	0.000	29.51	0.0	
<u>MODAL EQUIVALENT BAG SUMMARY</u>																				
	PHASE One			3.596	DIL						2785.30	0.470	3.99	0.545	1503.1	0.248	0.000	24.22	0.0	
	PHASE Two			3.849	DIL						4772.18	0.435	0.22	-0.006	1505.0	0.559	0.000	26.00	0.0	
	PHASE Three			3.589	DIL						2777.17	0.274	0.05	0.026	1236.6	0.381	0.000	29.51	0.0	
	WEIGHTED TOTAL				DIL							0.107	0.26	0.033	383.8	0.119	0.000	26.46	0.0	

-----GRAMS PER mi-----

CVS Bag report
 MASS calculated by DF method

Phase 1 Bag 1	THC (ppmC)	CO (ppm)	NOX (ppm)	CO2 (%)	CH4 (ppmC)	NM-HC (wRf)	FE (mpg)
Range	30.0	500	100	2.00	10.0		
Sample	13.876	43.82	4.15	1.1031	4.912		
Range	30.0	500	100	2.00	10.0		
Ambient	3.959	1.88	0.09	0.0603	2.213		
Net Conc.	10.244	42.09	4.07	1.0478	2.883	7.2263	
Modal Corr.	0.0020	0.0129	0.0018	5.0391	0.0008	0.0012	
Grams/ph.	0.4665	3.8648	0.5543	1512.5073	0.1520	0.3289	24.0510
Grams/mi	0.1297	1.0749	0.1542	420.6596	0.0423	0.0915	

Test Info	Times Info
Baro(inHg) = 29.03	Phase Start = 09:23:17
Temp(F) = 75.2	Phase Finish = 09:31:43
Tdew(F) = 48.6	Analysis End = 09:51:36
Rhum(%) = 39.1	Elapsed (sec) = 506.3
Ahum(gr/lb) = 52.2	Bag Fill (sec) = 506.0
NOX Factor = 0.9032	Bag Anl (sec) = 1192.2
Vmix(ft3 20 C) = 2776.36	Drv Err (sec) = 0.0
Dilu. Factor = 12.0842	Crank Time = 1.3
Dist(mi) = 3.5956	

Phase 2 Bag 2	THC (ppmC)	CO (ppm)	NOX (ppm)	CO2 (%)	CH4 (ppmC)	NM-HC (wRf)	FE (mpg)
Range	30.0	50.0	100	2.00	10.0		
Sample	9.106	1.797	0.03	0.6624	6.411		
Range	30.0	50.0	100	2.00	10.0		
Ambient	3.905	1.940	-0.02	0.0588	2.216		
Net Conc.	5.395	0.000	0.03	0.6065	4.304	0.8879	
Modal Corr.	0.0022	0.0010	0.0000	5.2161	0.0018	0.0006	
Grams/ph.	0.4213	0.0010	0.0071	1500.3455	0.3886	0.0695	26.0687
Grams/mi	0.1095	0.0003	0.0018	389.7774	0.1010	0.0181	

Test Info	Times Info
Baro(inHg) = 29.03	Phase Start = 09:31:43
Temp(F) = 75.2	Phase Finish = 09:46:13
Tdew(F) = 48.6	Analysis End = 10:08:50
Rhum(%) = 39.1	Elapsed (sec) = 869.4
Ahum(gr/lb) = 52.2	Bag Fill (sec) = 869.0
NOX Factor = 0.9031	Bag Anl (sec) = 1357.7
Vmix(ft3 20 C) = 4756.84	Drv Err (sec) = 0.0
Dilu. Factor = 20.1972	Stop Time = 0.4
Dist(mi) = 3.8492	

Soak Start = 09:46:13
 Soak Finish = 09:55:21
 Elapsed (sec) = 548.0

Phase 3 Bag 3	THC (ppmC)	CO (ppm)	NOX (ppm)	CO2 (%)	CH4 (ppmC)	NM-HC (wRf)	FE (mpg)
Range	30.0	50.0	100	2.00	10.0		
Sample	9.629	1.035	0.23	0.9165	7.449		
Range	30.0	50.0	100	2.00	10.0		
Ambient	3.468	1.148	0.01	0.0600	2.211		
Net Conc.	6.398	0.000	0.22	0.8606	5.390	0.7552	
Modal Corr.	0.0013	0.0003	0.0001	4.1941	0.0012	0.0002	
Grams/ph.	0.2906	0.0003	0.0296	1238.7891	0.2831	0.0344	29.4732
Grams/mi	0.0810	0.0001	0.0083	345.1538	0.0789	0.0096	

Test Info	Times Info
Baro(inHg) = 29.03	Phase Start = 09:55:21
Temp(F) = 75.2	Phase Finish = 10:03:47
Tdew(F) = 48.6	Analysis End = 10:16:24
Rhum(%) = 39.1	Elapsed (sec) = 505.9
Ahum(gr/lb) = 52.2	Bag Fill (sec) = 506.0
NOX Factor = 0.9031	Bag Anl (sec) = 757.6
Vmix(ft3 20 C) = 2768.25	Drv Err (sec) = 0.0
Dilu. Factor = 14.6039	Crank Time = 0.9
Dist(mi) = 3.5891	

Test Summary	THC	CO	NOX	CO2	CH4	NM-HC (wRf)	FE (mpg)
Wtd Results							
Grams g/mi	0.1058	0.2234	0.0352	383.9179	0.0827	0.0310	26.4526
Grams g/mi	0.106	0.22	0.04	384	0.083	0.031	
Phs1&2 gms	0.8878	3.8657	0.5614	3012.8528	0.5406	0.3985	
Phs1&2 g/mi	0.1193	0.5193	0.0754	404.6924	0.0726	0.0535	25.0516
Phs2&3 gms	0.7119	0.0013	0.0367	2739.1345	0.6717	0.1039	
Phs2&3 g/mi	0.0957	0.0002	0.0049	368.2459	0.0903	0.0140	27.6288

Avg Test Info
Baro(inHg) = 29.03
Temp(F) = 75.2
Tdew(F) = 48.6
Rhum(%) = 39.1
Ahum(gr/lb) = 52.2
NOX Factor = 0.9032

CVS Bag report
MASS calculated by DF method

Grams To Total (Bags) (gm/mi)			
	Bag1	Bag2	Bag3
THC	0.0269	0.0566	0.0223
CO	0.2232	0.0001	0.0000
NOX	0.0320	0.0010	0.0023
NM-HC (wRF)	0.0190	0.0093	0.0026

Legend

- * denotes Unstable Reading
- (wRF) denotes with Response Factor
- (woRF) denotes without Response Factor

DATA VALIDATION

PARAMETER DESCRIPTION	VALUE OF PARAMETER	LIMIT OF PARAMETER
Temperature	VALID	68 - 86 (degF)
Barometer	VALID	26.99 - 33.0001 (inHg)
Dew Point	VALID	-20 - 200 (degF)
Absolute Humidity	VALID	0 - 150 (gr/lb)
Crank Time	VALID	5 (sec)
Restart Attempts	VALID	1
Shutdown Time	VALID	5 (sec)
Pretest Soak Time	VALID	12 - 36 (hr)
Phase Length	VALID	2 (%)
Distance	VALID	2 (%)
Test Hold Conditions	VALID	60 (sec)
Leak Check	VALID	
Bag Analysis Time	DETAILS BELOW	1200 (sec)
Bag Fill Time	VALID	5 (sec)
Ambient Bag Readings	VALID	THC -0.55 - 10 (ppm) CO -0.55 - 15 (ppm) NOX -0.55 - 2 (ppm) CO2 350 - 850 (ppm) CH4 -0.55 - 10 (ppm)
Sample Bag Readings	VALID	THC -0.55 (ppm) CO -0.55 (ppm) NOX -0.55 (ppm) CO2 350 (ppm) CH4 -0.55 (ppm)
Bag Read Sequence	VALID	Stabilization Time (T2) 10 (sec) Integration Time (T3) 3 (sec) Stability Time Out (T4) 30 (sec) Stability Chk Tolerance 2 (%)
Bag Zero/Span Sequence	VALID	Pre-Bag Z/S Offset 25 (%) Pre-Bag Zero Drift 1 (%) Post-Bag Z/S Drift 2 (%) Stabilization Time (T2) 10 (sec) Integration Time (T3) 3 (sec) Stability Time Out (T4) 30 (sec) Stability Chk Tolerance 2 (%)
Hot Soak Length	VALID	540 - 660 (sec)
Analyzer Overscale	VALID	10 (sec)
Venturi Inlet Temperature	VALID	32 - 300 (degF)

1200

Bag Analysis Time

Limit: 1200 (sec)

Phase	Time (sec)	Status
1	1192.20	(OK)
2	1357.71	(over) - <i>OK under 1200</i>
3	757.58	(OK)

1 violation.

Bag Pair 1 Zero/Span Concentrations		(Offset Limit = 25.0% ReZero Limit = 1.0%)												
Samp	Gas	Range	Fullscale	Zero	Offset	Std Dev	Spec	Span	Offset	Std Dev	Rezero	Drift	Std Dev	Status
BAG	LCO	(3)	500ppm	0.67	0.13	0.00610	466.17	466.58	0.08	0.02010	0.01	0.00	0.00643	PASS
BAG	CO2	(2)	2.00%	0.0023	0.12	0.01192	1.8723	1.8732	0.04	0.04127	0.0008	0.04	0.00741	PASS
BAG	THC	(2)	30.0ppm	0.103	0.34	0.00939	27.975	27.931	-0.15	0.02883	-0.013	-0.04	0.01643	PASS
BAG	NOX	(3)	100ppm	0.85	0.85	0.03430	91.84	92.06	0.22	0.15686	-0.02	-0.02	0.06885	PASS
BAG	CH4	(1)	10.0ppm	0.175	1.75	0.07974	9.219	9.215	-0.05	0.11006	0.018	0.18	0.05499	PASS

Bag Pair 1 Post Bag Check		(Drift Limit = 2.0%)										
Samp	Gas	Range	Fullscale	Zero	Drift	Std Dev	Spec	Span	Drift	Std Dev	Status	
BAG	LCO	(3)	500ppm	0.01	0.00	0.00570	466.17	466.31	0.03	0.00788	PASS	
BAG	CO2	(2)	2.00%	0.0009	0.04	0.00856	1.8723	1.8741	0.09	0.04305	PASS	
BAG	THC	(2)	30.0ppm	-0.005	-0.02	0.00582	27.975	28.023	0.16	0.03608	PASS	
BAG	NOX	(3)	100ppm	-0.07	-0.07	0.06009	91.84	91.71	-0.13	0.14803	PASS	
BAG	CH4	(1)	10.0ppm	0.026	0.26	0.04110	9.219	9.234	0.15	0.07673	PASS	

Bag Pair 2 Zero/Span Concentrations		(Offset Limit = 25.0% ReZero Limit = 1.0%)												
Samp	Gas	Range	Fullscale	Zero	Offset	Std Dev	Spec	Span	Offset	Std Dev	Rezero	Drift	Std Dev	Status
BAG	LCO	(1)	50.0ppm	0.386	0.77	0.05673	47.235	47.243	0.02	0.04917	-0.138	-0.28	0.03839	PASS
BAG	CO2	(2)	2.00%	0.0027	0.14	0.00867	1.8723	1.8728	0.02	0.04805	0.0005	0.02	0.00918	PASS
BAG	THC	(2)	30.0ppm	0.114	0.38	0.01479	27.975	27.751	-0.75	0.01822	-0.023	-0.08	0.00810	PASS
BAG	NOX	(3)	100ppm	0.83	0.83	0.08713	91.84	91.68	-0.16	0.10247	-0.04	-0.04	0.06622	PASS
BAG	CH4	(1)	10.0ppm	0.153	1.53	0.07536	9.219	9.246	0.26	0.07028	0.017	0.17	0.06923	PASS

Bag Pair 2 Post Bag Check		(Drift Limit = 2.0%)										
Samp	Gas	Range	Fullscale	Zero	Drift	Std Dev	Spec	Span	Drift	Std Dev	Status	
BAG	LCO	(1)	50.0ppm	-0.099	-0.20	0.03105	47.235	47.234	0.00	0.07885	PASS	
BAG	CO2	(2)	2.00%	0.0006	0.03	0.00614	1.8723	1.8754	0.16	0.05803	PASS	
BAG	THC	(2)	30.0ppm	-0.017	-0.06	0.01012	27.975	28.118	0.48	0.03935	PASS	
BAG	NOX	(3)	100ppm	-0.01	-0.01	0.07266	91.84	91.80	-0.04	0.20384	PASS	
BAG	CH4	(1)	10.0ppm	0.002	0.02	0.06539	9.219	9.180	-0.40	0.12905	PASS	

Bag Pair 3 Zero/Span Concentrations		(Offset Limit = 25.0% ReZero Limit = 1.0%)												
Samp	Gas	Range	Fullscale	Zero	Offset	Std Dev	Spec	Span	Offset	Std Dev	Rezero	Drift	Std Dev	Status
BAG	LCO	(1)	50.0ppm	0.315	0.63	0.04870	47.235	47.296	0.12	0.05407	-0.085	-0.17	0.08945	PASS
BAG	CO2	(2)	2.00%	0.0038	0.19	0.00847	1.8723	1.8729	0.03	0.03870	0.0001	0.01	0.00856	PASS
BAG	THC	(2)	30.0ppm	0.090	0.30	0.01015	27.975	27.854	-0.41	0.01121	-0.012	-0.04	0.01257	PASS
BAG	NOX	(3)	100ppm	0.79	0.79	0.07207	91.84	92.04	0.20	0.13223	-0.04	-0.04	0.08477	PASS
BAG	CH4	(1)	10.0ppm	0.144	1.44	0.06313	9.219	9.206	-0.13	0.05967	0.004	0.04	0.09239	PASS

Bag Pair 3 Post Bag Check		(Drift Limit = 2.0%)										
Samp	Gas	Range	Fullscale	Zero	Drift	Std Dev	Spec	Span	Drift	Std Dev	Status	
BAG	LCO	(1)	50.0ppm	-0.068	-0.14	0.09984	47.235	47.260	0.05	0.03908	PASS	
BAG	CO2	(2)	2.00%	-0.0001	-0.01	0.00975	1.8723	1.8745	0.11	0.04626	PASS	
BAG	THC	(2)	30.0ppm	-0.007	-0.02	0.00990	27.975	28.079	0.34	0.00857	PASS	
BAG	NOX	(3)	100ppm	0.10	0.10	0.10458	91.84	91.61	-0.23	0.21894	PASS	
BAG	CH4	(1)	10.0ppm	-0.007	-0.07	0.33239	9.219	9.226	0.06	0.06912	PASS	