2013 VW Passat PEMS Testing Summary
Vehicle N/A
2013 VW Passat GenII 2.0L CI
Consent Decree Emissions Level

Exhaust Emission standard =
Test Group SFTP FEL =
Cold Start Bag 1 =
Cold Start Bag 2 =
Cold Start Bag 3 =

Test Route	Date	Start	Stop	Miles	Avg. Amb Temp (C)	Avg. Amb Temp (F)	ECT @ Start (F)
Soak	1/24/2017	10:19 AM	10:33 AM	2.66	1.7	35.0	71.6
A	1/24/2017	10:33 AM	10:49 AM	7.61	0.7	33.3	193.0
B	1/24/2017	10:50 AM	11:18 AM	11.05	1.2	34.1	201.2
C	1/24/2017	12:06 PM	1:07 PM	33.37	4.1	39.3	127.7
D	1/24/2017	1:17 PM	2:45 PM	82.64	5.0	41.0	N/A
A	1/27/2017	8:24 AM	8:50 AM	7.74	-0.4	31.3	15.3
D	1/27/2017	8:49 AM	10:17 AM	82.50	-0.5	31.1	199.4
Abort A	1/27/2017	11:23 AM	11:44 AM	4.54	-0.6	30.9	150.8
A	1/27/2017	11:50 AM	12:11 PM	7.89	-0.9	30.4	203.0
E	1/27/2017	12:25 PM	1:23 PM	29.27	-0.5	31.1	192.2
A	1/30/2017	9:42 AM	10:09 AM	7.74	0.1	32.1	71.6
B	1/30/2017	10:09 AM	10:38 AM	10.61	-6.5	20.3	201.2
E	1/30/2017	10:38 AM	11:35 AM	29.12	-6.5	20.3	206.6
CCD	1/30/2017	1:11 PM	2:20 PM	38.82	-1.5	29.3	145.4
CCD_25	1/30/2017	1:11 PM	1:36 PM	18.70	1.0	33.8	145.4
A	2/1/2017	10:00 AM	10:23 AM	7.89	1.4	34.6	117.6
D	2/1/2017	10:39 AM	12:02 PM	82.62	1.6	34.9	188.6
C	2/1/2017	12:51 PM	1:43 PM	30.89	2.8	37.0	168.8
B	2/2/2017	9:28 AM	9:59 AM	10.74	-6.7	20.0	77.3
B	2/10/2017	9:36 AM	10:04 AM	11.04	-0.7	30.7	N/A
FTP	2/16/2017	10:10 AM	10:51 AM	10.74	-2.4	27.6	0.0
B1 B2	2/16/2017	10:10 AM	10:34 AM	7.51	-1.5	29.3	0.0
B1	2/16/2017	10:10 AM	10:19 AM	3.70	-0.5	31.2	0.0
B2	2/16/2017	10:19 AM	10:34 AM	3.82	-1.0	30.2	0.0
B3	2/16/2017	10:43 AM	10:51 AM	3.22	-0.4	31.2	0.0

g/mi
g/mi

Suspect data =

NOX g/mi	HC g/mi	Sum g/mi	Calc NMHC	Calc Sum	FE	Avg Speed	Notes			
0.319	**0.469**	**0.788**	**#DIV/0!**	**#DIV/0!**	24.7	11.6	No NMHC data from lab tests yet!, Soak, A, B in same file			
0.024	**0.000**	**0.024**	**#DIV/0!**	**#DIV/0!**	46.4	27.0	No NMHC data from lab tests yet!, Soak, A, B in same file			
0.048	**0.000**	**0.048**	**#DIV/0!**	**#DIV/0!**	38.0	23.0	No NMHC data from lab tests yet!, Soak, A, B in same file			
0.083	**0.026**	**0.109**	**#DIV/0!**	**#DIV/0!**	38.8	32.9	No NMHC data from lab tests yet.			
0.017	**0.039**	**0.056**	**#DIV/0!**	**#DIV/0!**	42.4	56.8	No NMHC data from lab tests yet.			
0.209	**0.034**	**0.243**	**#DIV/0!**	**#DIV/0!**	36.3	21.7	No NMHC data from lab tests yet.			
0.019	**0.000**	**0.019**	**#DIV/0!**	**#DIV/0!**	44.3	56.6	No NMHC data from lab tests yet.	5244	5244	-0.483
0.244	**0.001**	**0.245**	**#DIV/0!**	**#DIV/0!**	30.6	13.2	Plymouth to Pontiac trail & return	1243	1243	-0.604
0.059	**0.062**	**0.121**	**#DIV/0!**	**#DIV/0!**	26.9	21.9	Regen - DPF exceeded 500 degrees	1297	1297	-0.907
0.075	**0.006**	**0.080**	**#DIV/0!**	**#DIV/0!**	42.0	30.5	No NMHC data from lab tests yet.	3454	3454	-0.498
0.199	**0.144**	**0.344**	**#DIV/0!**	**#DIV/0!**	34.5	20.1	No NMHC data from lab tests yet.	1386	1386	0.055
0.128	**0.017**	**0.145**	**#DIV/0!**	**#DIV/0!**	38.3	24.7	No NMHC data from lab tests yet.	1545	1545	-6.504
0.109	**0.000**	**0.110**	**#DIV/0!**	**#DIV/0!**	42.4	30.9	No NMHC data from lab tests yet.	3391	3391	-6.477
0.170	**0.063**	**0.233**	**#DIV/0!**	**#DIV/0!**	39.8	34.2	No NMHC data from lab tests yet.	4091	4091	-1.479
0.206	**0.057**	**0.263**	**#DIV/0!**	**#DIV/0!**	42.0	44.9	First 25 minutes of 1/30/17 drive - mostly highway	4091	1500	-1.479
0.239	**0.086**	**0.325**	**#DIV/0!**	**#DIV/0!**	33.3	20.8	This was an outdoor soak; 1st ECT 1 minute into test	1366	1366	1.415
0.038	**0.066**	**0.104**	**#DIV/0!**	**#DIV/0!**	42.5	59.7		4986	4986	1.604
0.129	**0.012**	**0.140**	**#DIV/0!**	**#DIV/0!**	40.3	35.6	Mileage is off; speed data suspect, GPS seems okay	3126	3126	2.79
0.220	**0.043**	**0.263**	**#DIV/0!**	**#DIV/0!**	35.8	22.6	This was an outdoor soak; 1st ECT 2 minutes into test	1712	1712	-6.663
0.319	**0.053**	**0.372**	**#DIV/0!**	**#DIV/0!**	34.2	23.7	Outdoor soak start ~ 20F, Engine Parameters N/A	15339	1675	-4.048
0.394	**0.022**	**0.416**	**#DIV/0!**	**#DIV/0!**	31.6	15.7	Outdoor soak start ~ 25F, Engine Parameters N/A, not weighted	3231	2457	-2.928
0.361	**0.030**	**0.390**	**#DIV/0!**	**#DIV/0!**	30.4	18.7	Outdoor soak start ~ 25F, Engine Parameters N/A	3231	1450	-2.928
0.525	**0.052**	**0.577**	**#DIV/0!**	**#DIV/0!**	30.1	23.5	Outdoor soak start ~ 25F, Engine Parameters N/A	3231	565	-2.928
0.201	**0.008**	**0.209**	**#DIV/0!**	**#DIV/0!**	30.8	15.6	Outdoor soak start ~ 25F, Engine Parameters N/A	3231	884	-2.928
0.473	**0.003**	**0.476**	**#DIV/0!**	**#DIV/0!**	34.7	25.3	Outdoor soak start ~ 25F, Engine Parameters N/A	3231	459	-2.928

-0.483174361	82.156	82.49555556	1.864	1.863799	44.085	44.26204519	1.533	1.5335	0.019	0.01858888	0.007	0.00729	0
-0.60475423	4.562	4.542083333	0.148	0.148285	30.774	30.63076733	1.109	1.1085	0.243	0.244051004	0.003	0.00281	0.001
-0.908108108	7.89	7.887138889	0.293	0.29324	26.923	26.89653147	0.462	0.4615	0.058	0.05851298	0.492	0.49218	0.062
-0.498232908	29.104	29.26708333	0.698	0.69758	41.726	41.95516404	2.185	2.18527	0.075	0.074666477	0.162	0.16154	0.006
0.056069364	7.702	7.739916667	0.224	0.224062	34.374	34.54363822	1.542	1.54209	0.2	0.199238579	1.117	1.11704	0.145
-6.512832145	10.575	10.60938889	0.277	0.276794	38.206	38.32954793	1.363	1.36277	0.129	0.128449434	0.177	0.17724	0.017
-6.480466214	29.008	29.12213889	0.686	0.686364	42.263	42.42958385	3.176	3.17592	0.109	0.109055177	0.014	0.01425	0
-1.479579359	38.936	38.81613889	0.975	0.974853	39.939	39.81742774	6.599	6.59889	0.169	0.170003771	2.435	2.43477	0.063
1.016874541	38.936	18.70402778	0.975	0.445232	39.939	42.00962145	6.599	3.85361	0.169	0.206031024	2.435	1.06467	0.063
1.417082111	9.79	7.890611111	0.237	0.236871	41.331	33.31184953	1.885	1.88457	0.193	0.238837014	0.681	0.68125	0.07
1.604815409	82.821	82.62255556	1.946	1.945868	42.562	42.46051405	3.166	3.16547	0.038	0.038312419	5.466	5.4663	0.066
2.792253521	34.816	30.89161111	0.767	0.766828	45.401	40.28492845	3.974	3.97343	0.114	0.128624887	0.367	0.36673	0.011
-6.670467836	13.336	10.74491667	0.3	0.300307	44.405	35.77977425	2.367	2.36678	0.177	0.22026974	0.46	0.45962	0.034
-0.74926648	0	11.03561111	0.705	0.322525	0	34.21629676	9.449	3.51798	0	0.31878434	1.185	0.58359	0
-2.448219263	0	10.73666667	0.411	0.340018	0	31.57675966	4.627	4.23339	0	0.394292766	0.237	0.23304	0
-1.482688139	0	7.514222222	0.411	0.246962	0	30.42663334	4.627	2.70948	0	0.360580233	0.237	0.22396	0
-0.464633013	0	3.695	0.411	0.122804	0	30.08859646	4.627	1.9409	0	0.525277402	0.237	0.19208	0
-1.017126045	0	3.819222222	0.411	0.123909	0	30.82279917	4.627	0.76753	0	0.200965002	0.237	0.03184	0
-0.426447817	0	3.222444444	0.411	0.092896	0	34.68873196	4.627	1.52383	0	0.472880146	0.237	0.009	0

8.83684E-05	199.4	08:49:57.955	10:17:20.955	56.6331045
0.000618659	150.8	11:23:21.224	11:44:03.224	13.15486726
0.062402857	203	11:50:07.646	12:11:43.646	21.89182729
0.005519511	192.2	12:25:55.821	13:23:28.821	30.50419803
0.144321967	71.6	09:42:06.725	10:09:13.725	20.10367965
0.016705958	201.2	10:09:10.725	10:38:51.725	24.72090615
0.000489318	206.6	10:38:48.725	11:35:18.725	30.91704512
0.062725713	145.4	13:11:51.972	14:20:01.972	34.15744317
0.056921964	145.4	13:11:51.972	13:36:50.972	44.88966667
0.086336786	117.6	10:00:28.747	10:23:13.747	20.79516837
0.0661599	188.6	10:39:00.802	12:02:05.802	59.65527477
0.011871508	168.8	12:51:26.792	13:43:31.792	35.57575176
0.042775576	77.3	09:28:38.747	09:59:01.747	22.59445093
0.052882436		09:36:06.881	10:04:00.881	23.71832836
0.021705061		10:10:27.713	10:51:23.713	15.73137973
0.029804815		10:10:27.713	10:34:36.713	18.656
0.051983762		10:10:27.713	10:19:51.713	23.54336283
0.008336776		10:19:53.713	10:34:36.713	15.55339367
0.002792911		10:43:45.713	10:51:23.713	25.27407407

A 1st 300	1/27/2017	8:25 AM	8:30 AM	1.46	0.0	32.0	33.4
A 300-E	1/27/2017	8:31 AM	8:50 AM	6.27	-0.4	31.3	103.9
A 1st 300	1/30/2017	9:43 AM	9:48 AM	0.96	2.8	37.0	72.3
A 300-E	1/30/2017	9:48 AM	10:09 AM	6.76	-4.5	23.8	131.3
A 1st 300	2/1/2017	10:02 AM	10:07 AM	1.42	0.9	33.5	117.6
A 300-E	2/1/2017	10:07 AM	10:23 AM	6.46	0.1	32.2	108.6
B 1st 300	2/2/2017	9:30 AM	9:35 AM	1.42	-1.1	30.1	24.8
B 300-E	2/2/2017	9:35 AM	9:59 AM	9.31	-5.4	22.4	107.3

0.762	**0.115**	**0.878**	**#DIV/0!**	**#DIV/0!**	31.5	17.5	1st 300 seconds of driving, Cold Rt A, 1/27/2017 (100 sec offset)	1283	300	-0.411
0.080	**0.016**	**0.096**	**#DIV/0!**	**#DIV/0!**	37.7	25.6	From 301 seconds to end of drive, Cold Rt A, 1/27/2017 (100 sec offset)	1283	882	-0.411
0.869	**0.275**	**1.144**	**#DIV/0!**	**#DIV/0!**	20.6	11.6	1st 300 seconds of driving, Cold Rt A, 1/30/2017 (100 sec offset)	1386	300	0.055
0.104	**0.126**	**0.230**	**#DIV/0!**	**#DIV/0!**	38.2	24.7	From 301 seconds to end of drive, Cold Rt A, 1/30/2017 (100 sec offset)	1386	985	0.055
0.966	**0.147**	**1.113**	**#DIV/0!**	**#DIV/0!**	27.2	17.0	1st 300 seconds of driving, Cold Rt A, 2/1/2017 (100 sec offset)	1366	300	1.415
0.079	**0.073**	**0.152**	**#DIV/0!**	**#DIV/0!**	35.0	24.1	From 301 seconds to end of drive, Cold Rt A, 1/30/2017 (100 sec offset)	1366	965	1.415
0.967	**0.096**	**1.063**	**#DIV/0!**	**#DIV/0!**	34.8	17.1	1st 300 seconds of driving, Cold Rt B, 2/2/2017 (100 sec offset)	1712	300	-6.663
0.106	**0.035**	**0.141**	**#DIV/0!**	**#DIV/0!**	35.9	25.6	From 301 seconds to end of drive, Cold Rt B, 2/2/2017 (100 sec offset)	1712	1311	-6.663

0	7.688	1.455055556	0.213	0.046238	36.123	31.46882555	1.613	1.10912	0.21	0.762252682	0.266	0.16793	0.035
-0.411397346	7.688	6.269305556	0.213	0.166491	36.123	37.65552225	1.613	0.50335	0.21	0.080287999	0.266	0.09759	0.035
2.791763006	7.702	0.964138889	0.224	0.046866	34.374	20.57224617	1.542	0.83807	0.2	0.869241983	1.117	0.26526	0.145
-4.54132948	7.702	6.756694444	0.224	0.176972	34.374	38.17945463	1.542	0.70335	0.2	0.10409676	1.117	0.85111	0.145
0.859237537	9.79	1.419722222	0.237	0.052287	41.331	27.15248957	1.885	1.37134	0.193	0.965921346	0.681	0.20919	0.07
0.117228739	9.79	6.462305556	0.237	0.184456	41.331	35.03440146	1.885	0.51194	0.193	0.079219405	0.681	0.47172	0.07
-1.072163743	13.336	1.424916667	0.3	0.04099	44.405	34.76254371	2.367	1.37839	0.177	0.967347798	0.46	0.13649	0.034
-5.354385965	13.336	9.308944444	0.3	0.259219	44.405	35.91150512	2.367	0.98796	0.177	0.106130185	0.46	0.32285	0.034

0.115411401	33.4	08:25:59.955	08:30:58.955	17.46066667
0.015566317	103.9	08:31:00.955	08:50:00.955	25.58900227
0.275126336	72.3	09:43:46.725	09:48:45.725	11.56966667
0.125965442	131.3	09:48:47.725	10:09:13.725	24.69451777
0.147345725	117.6	10:02:08.747	10:07:07.747	17.03666667
0.07299562	108.6	10:07:09.747	10:23:13.747	24.1080829
0.095788058	24.8	09:30:18.747	09:35:17.747	17.099
0.034681698	107.3	09:35:19.747	09:59:01.747	25.56231884

Cell: M6

Comment: Cullen, Daniel:

If starting ECT < 80 F, used Bag 1 NMHC %, if starting ECT >80 and <170 used Bag 3 NMHC %, otherwise used fully warmed up NMHC %

2013 VW Passat PEMS Testing Summary
Vehicle N/A
2013 VW Passat GenII 2.0L CI
Consent Decree Emissions Level

Exhaust Emission standard =
Test Group SFTP FEL =
Cold Start Bag 1 =
Cold Start Bag 2 =
Cold Start Bag 3 =

Off Time sec.	Off Time min.	Date	Start	Stop	Miles	Start. Amb Temp (C)	Start Amb Temp (F)	ECT @ Start (F)
0	0	2/2/2017	9:59 AM	10:09 AM	2.64	-7.0	19.4	199.5
622	10.4	2/2/2017	10:19 AM	10:30 AM	2.79	-4.0	24.8	196.8
3600	60	2/2/2017	11:29 AM	11:39 AM	2.79	-3.0	26.6	151.3
7228	120.5	2/2/2017	1:39 PM	1:48 PM	2.77	-2.0	28.4	111.7
0	0	2/10/2017	10:04 AM	10:12 AM	2.51	-7.0	19.4	N/A
566	9.4	2/10/2017	10:21 AM	10:29 AM	2.65	-6.0	21.2	N/A
3705	61.8	2/10/2017	11:31 AM	11:40 AM	2.78	-4.0	24.8	N/A
7115	118.6	2/10/2017	1:39 PM	1:48 PM	2.78	-1.0	30.2	N/A

0	**g/mi**
0	**g/mi**

0.000
0.000
0.000

Suspect data =

DPF Temp @ Start (C)	NOX g/mi	HC g/mi	FE mpg	Avg Speed mph	Notes
204.0	**0.210**	**0.021**	29.1	16.9	
176.5	**0.612**	**0.000**	31.8	16.0	
87.7	**0.628**	**0.016**	31.1	17.4	
52.3	**0.700**	**0.071**	28.5	17.6	
N/A	**0.188**	**0.057**	29.4	18.5	Started on Plymouth. Engine data N/A
N/A	**0.420**	**0.056**	30.6	18.8	Engine data N/A
N/A	**0.851**	**0.045**	29.3	17.9	Engine data N/A
N/A	**0.699**	**0.063**	25.1	17.8	Engine data N/A

Transpose Paste Column

Start Time	Stop Time	Test Distance (Miles)	Start Ambient (deg C)
09:59:48.747	10:09:10.747	2.64	-7.00
10:19:32.747	10:30:02.747	2.79	-4.00
11:29:22.747	11:39:00.747	2.79	-3.00
13:39:28.747	13:48:57.747	2.77	-2.00
10:04:02.881	10:12:10.881	2.51	
10:21:26.881	10:29:54.881	2.65	-6.00
11:31:39.881	11:40:56.881	2.78	-4.00
13:39:31.881	13:48:53.881	2.78	-1.00

Start ECT (deg F)	Start DPF Temp (deg C)	NOx g total	NOx g/mile	HC g total	HC g/mile	Test fuel economy (MPG)	Run average speed (MPH)	Off time before run(sec)	Start Row
199.50	204.00	0.553	0.210	0.055	0.021	29.11	16.88		52
196.80	176.47	1.710	0.612	0.000	0.000	31.80	15.97	622	1236
151.30	87.70	1.753	0.628	0.045	0.016	31.12	17.38		114
111.70	52.32	1.941	0.700	0.198	0.071	28.53	17.56	7228	7920
		0.472	0.188	0.143	0.057	29.38	18.47	0	
		1.116	0.420	0.149	0.056	30.59	18.81	566	2723
		2.363	0.851	0.126	0.045	29.34	17.94	3705	6936
		1.943	0.699	0.174	0.063	25.12	17.80	7115	14608

2013 VW Passat PEMS Testing Summary
Vehicle N/A
2013 VW Passat GenII 2.0L CI
Consent Decree Emissions Level

Test Cycle	Date	NOX g/mi

Reference VW Lab test Summary
Vehicle

LDV

SFTP Calculated from EPA FTP average **#DIV/0!**

Test Cycle	Date	NOX g/mi

SFTP Calculated from GM data **0.000**

Exhaust Emission standard =	
Test Group SFTP FEL =	

Inertia =

NMHC g/mi	CO g/mi	CO2 g/mi	FE	Bag 1 Nox g/mi

g/mi

NMHC g/mi	CO g/mi	CO2 g/mi	FE	Bag 1 Nox g/mi

0.000	**g/mi**
0.000	**g/mi**

#

Bag 2 NOx g/mi	Bag 3 NOx g/mi	Bag 4 NOx g/mi	Notes

THC

Max US06 Allowed assuming valid SC03 & FTP = **0.000** g/mi

Bag 2 NOx g/mi	Bag 3 NOx g/mi	Bag 4 NOx g/mi	Notes

Suspect data =

NMHC
%

HC to NMHC %

		HC					NMHC				
Test Date	Test	Bag 1	Bag 2	Bag 3	Bag 4	Weighted	Bag 1	Bag 2	Bag 3	Bag 4	Weighted

	THC	NMHC	%
Weighted Average	#DIV/0!	#DIV/0!	#DIV/0!
Warm Average	#DIV/0!	#DIV/0!	#DIV/0!
Cold Start Avergage	#DIV/0!	#DIV/0!	#DIV/0!
Hot Start Average	#DIV/0!	#DIV/0!	#DIV/0!