



Team Results for Clean Snowmobile Challenge 2010

2010 Clean Snowmobile Competition - Lab Emission Event Emission Data Sheet

Team Name : Univ of Wisconsin - Platteville
 Model : UW-P
 Engine : UW-P
 Displacement[cc] : 600cc
 100% Speed : 6798
 100% Torque : 82.6
 No of Strokes : 2
 Fuel : Gasoline H/C: 1.85 O/C: 0.07

ModeNum	:	1	2	3	4	5
Weighting	:	0.12	0.27	0.25	0.31	0.05
Power kW	:	53.3	24.6	14.1	7.3	0.0
HC_m g/hr	:	1185.81	404.82	299.20	128.87	7.87
CO_m g/hr	:	13459.82	7893.70	5175.32	2629.95	284.28
NOx_m g/hr	:	136.47	16.09	5.34	1.46	0.07
N2O_m g/hr	:	0.00	0.00	0.00	0.00	0.00
Soot_m mg/hr	:	2601.89	256.62	165.29	114.74	1.19
W_HC g/hr	:	142.30	109.30	74.80	39.95	0.39
W_CO g/hr	:	1615.18	2131.30	1293.83	815.29	14.21
W_NOx g/hr	:	16.38	4.34	1.34	0.45	0.00
W_HCNOx g/hr	:	158.67	113.65	76.14	40.40	0.40
W_Soot mg/hr	:	312.23	69.29	41.32	35.57	0.06

Total Weighted Power [kW] 18.799

Weighted Emissions

	HC	CO	NOx	HC+NOx
Total Mass [g/hr]	366.7	5869.8	22.5	389.3
Specific Mass [g/kW-hr]	19.5	312.2	1.2	20.7

Total Soot [mg/hr] 458.5 Specific Soot [mg/kW-hr] 24.4
 BSFC [g/kW-hr] 497.5

Not Used for Competition

	CO2	N2O	CH4
Total Mass [g/hr]	44202	0.00	104.38
Specific Mass [g/kW-hr]	5304	0.00	12.53

EMISSION TESTS:

	Value	Limit	Result
Power	53.3	<96.94 kW	PASS
Soot	24.388	<100 mg/kW-hr	PASS
CO	312.24	<275 g/kW-hr	FAIL
HC + NOX	20.71	<90 g/kW-hr	PASS
E-Score	118.1	>100	PASS
Valid Data for All 5 Modes			PASS

LAB EMISSION TEST FAIL



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Modal Raw Data : Engine / Environmental

ModeNum		1	2	3	4	5
Total Points	points	305	1201	1196	1211	1191
PtsInMode	points	305	1201	1196	1211	1191
Speed	rpm	6791.27	5781.01	5106.53	4424.22	1677.20
Torque	Nm	74.89	40.62	26.34	15.65	0.00
Power	kW	53.26	24.59	14.08	7.25	0.00
BSFC	g/kw-hr	409.03	439.78	522.47	642.25	**
Fuel	g/hr	21783.96	10813.88	7357.84	4657.66	1156.69
T_int	degC	17.99	16.65	16.26	15.66	16.43
RelHumid	%	69.88	38.85	23.58	22.91	22.90
Baro	in Hg	29.77	29.77	29.76	29.76	29.76
Baro	mmHg	756.18	756.04	755.91	755.88	755.86
Pvap_kPa	kPa	1.24	0.64	0.38	0.36	0.37
Pvap_inHg	inHg	0.37	0.19	0.11	0.11	0.11
AbsHumidity	grains/lb	54.30	27.85	16.49	15.49	16.18
SatPres	kPa	99.57	100.15	100.40	100.42	100.40
Hum Factor		1.00	1.00	1.00	1.00	1.00
F_fac		0.98	0.97	0.97	0.96	0.97
K_fac		0.99	0.99	0.98	0.98	0.99
Humidity	g/kg	7.76	3.98	2.36	2.21	2.31
H2		1.76	2.18	2.08	1.52	0.44
WetDry Factor		0.87	0.87	0.87	0.88	0.90



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Modal Emissions Concentrations

ModeNum		1	2	3	4	5
THC	ppmC1	7992.15	5507.30	5976.08	3942.73	733.02
CO	%	4.49	5.32	5.12	3.98	1.31
N2O	ppm	0.15	0.22	0.07	0.00	0.09
CH4	ppm	609.95	615.97	977.95	1084.58	226.50
CO2	%	9.39	8.84	8.98	9.87	9.39
O2	%	0.80	0.65	0.87	1.06	4.92
CNOx	ppm	277.35	66.01	32.17	13.46	1.84
AHC	ppm	472.25	314.18	327.84	195.10	31.65
C2H2	ppm	47.73	34.95	54.59	68.31	9.23
C2H4	ppm	379.83	332.27	436.38	307.06	31.90
C3H6	ppm	217.54	169.34	151.01	56.59	9.30
C4H6	ppm	29.64	30.26	29.83	11.73	1.55
ETOH	ppm	79.94	50.81	35.18	6.73	4.36
H2O	%	13.48	13.42	13.12	12.46	9.91
HCHO	ppm	202.58	67.68	50.45	42.41	2.97
HCN	ppm	7.52	3.89	3.57	2.47	0.40
HNCO	ppm	95.60	26.94	13.66	9.67	2.12
MECHO	ppm	116.50	49.07	34.49	12.75	1.43
NC5	ppm	71.74	12.43	0.00	0.00	0.00
NH3	ppm	95.38	59.30	41.49	24.12	6.27
NO	ppm	271.63	63.56	28.85	7.84	0.68
SO2	ppm	17.77	7.06	6.95	6.52	1.61
Soot	mg/m3	11.186	2.312	2.146	2.239	0.068
ModalAFR_MO -		11.835	11.336	11.581	12.223	17.144