

PREBURN

JOB # 035-S-075-1 Model Designation ARADA\_FARRINGDON16

TECHNICIAN BTN

DATE: 2\_15\_17

RUN #: EPA2

READING INTERVAL: 10

.

Run Time: 60

Tunnel Traverse Information								
	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8
dP	0.036	0.043	0.040	0.040	0.042	0.041	0.040	0.033
Temperature	105	105	105	105	105	105	105	105

0.039

105.000

			1	2	3	4	5	
			TEMPERATURES					
ET	SCALE READING	FLUE DRAFT	LEFT SIDE	RIGHT SIDE	BACK	TOP	BOTTOM	STOVE AVG T
0	6.5	-0.063	387	417	465	578	170	403.4
10	5.4	-0.047	410	428	471	601	179	417.8
20	4.5	-0.04	397	410	451	596	180	406.8
30	3.8	-0.033	387	395	435	593	179	397.8
40	3.5	-0.026	376	380	432	557	175	384
50	2.7	-0.025	373	379	441	488	174	371
60	2.6	-0.024	356	360	417	429	174	347.2

Dilution Tunnel MW(dry): 29.00 lb/lb-mole  
Dilution Tunnel MW(wet): 28.78 lb/lb-mole  
Dilution Tunnel H2O: 2.00 %  
Dilution Tunnel Static: -0.400 In H2O  
Tunnel Area: 0.196 ft²  
Pitot Tube Cp: 0.99

Tunnel Velocity: 13.36743 ft/sec.  
Intial Tunnel Flow: 145.8342 scfm  
Average Tunnel Flow: 147.6837 scfm

Run # EPA2  
Date: 2/15/17

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Dilution Tunnel H2O: 2.00 %  
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Tunnel Area: 0.196 ft<sup>2</sup>  
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Dilution Tunnel Traverse Data								
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dP	0.036	0.043	0.040	0.040	0.042	0.041	0.040	0.033
Temperature	105	105	105	105	105	105	105	105

0.039  
105.000

Tunnel Velocity: 13.367 ft/sec.  
Initial Tunnel Flow: 145.83 scfm  
Average Tunnel Flow: 147.68 scfm

JOB #	035-S-075-1															
TECHNICIAN	BTN							ROOM TEMP (F)	70.0				BEG	MID	END	AVG
DATE:	2_15_17							BAROMETRIC					29.72	29.72	29.72	29.72
RUN #:	EPA2															
READING INTERVAL:	10															
SAMPLE BOX :	A	METER Y FACTOR:	1.01							PROBE MATERIAL:			SS			
FRONT FILTER #:	3034&3039					REAR FILTER #	REAR FILTER #:	3035								
FINAL LEAK RATE (CFM):	<0.01	@	19	IN-HG			FINAL LEAK RATE (CFM)	<0.01	@	19	IN-HG					
Run Time:	310			AMBIENT FILTER #:	3038	VOLUME	1736.481	LITERS		FUEL MOISTURE DB			20.3	%		
				FINAL LEAK RATE (CFM):	<0.01	@	19	IN-HG								
TEST START TIME:	13:39									1	2	3	4	5	6	
										TEMPERATURES						
	GAS METER	SAMPLE	TUNNEL	ORIFICE	FILTER	TUNNEL VEL	Proportional	Scale	Weight	TUNNEL	FLUE	FILTER	FB REAR	CAT	METER	AMBIENT
ET	VOLUME	RATE(FT3/MIN)	DELTA P	DELTA H	VAC	FT/SEC	Rate (%)	Weight	Chg	TEMP	TEMP	TEMP	TEMP	TEMP	TEMP	TEMP
0	0.000	0.000	0.039	0	-0.04		NA	10.6	0	90	229	72	414	667.55	74	70
10	1.388	0.139	0.039	2.01	-0.82	13.371	101	9.9	0.7	91	244	75	375	768.67	75	70
20	2.782	0.139	0.039	1.98	-1.49	13.346	101	9.3	0.6	89	233	75	346	857.3	78	70
30	4.189	0.141	0.039	2.01	-0.7	13.334	101	8.7	0.6	88	234	75	340	867.06	81	70
40	5.605	0.142	0.039	2.01	-1.49	13.322	101	8.2	0.5	87	230	75	338	880.21	84	70
50	7.021	0.142	0.039	2.03	-0.94	13.334	101	7.5	0.7	88	249	74	338	898.99	87	69
60	8.446	0.143	0.039	2.03	-1.53	13.346	101	6.6	0.9	89	264	75	343	899.71	89	70
70	9.871	0.143	0.039	2.04	-0.98	13.358	101	5.8	0.8	90	270	76	351	929.5	91	70
80	11.298	0.143	0.039	2.01	-1.54	13.371	101	5.1	0.7	91	270	76	364	928.88	93	70
90	12.724	0.143	0.039	2.01	-1.32	13.371	101	4.4	0.7	91	262	75	364	893.87	94	70
100	14.147	0.142	0.039	2.01	-1.07	13.358	100	4	0.4	90	246	75	365	913.84	95	71
110	15.578	0.143	0.039	2.03	-1.18	13.346	100	3.6	0.4	89	248	75	368	1014.68	96	71
120	17.005	0.143	0.039	2.02	-0.94	13.334	100	3.3	0.3	88	237	75	372	955.09	96	70
130	18.436	0.143	0.039	2.01	-0.99	13.334	100	3	0.3	88	226	75	373	919.43	97	70
140	19.869	0.143	0.039	2.01	-1.37	13.322	100	2.8	0.2	87	217	75	374	900.65	97	70
150	21.299	0.143	0.039	2.03	-1.25	13.310	100	2.6	0.2	86	212	75	371	893.74	97	70
160	22.735	0.144	0.039	2.03	-0.73	13.310	100	2.3	0.3	86	208	74	367	847.57	98	70
170	24.171	0.144	0.039	2.03	-1.53	13.310	100	2	0.3	86	207	74	369	903.68	98	70
180	25.604	0.143	0.039	2.04	-0.79	13.310	100	1.8	0.2	86	206	74	372	894.59	98	70
190	27.039	0.144	0.039	2.04	-0.83	13.310	100	1.7	0.1	86	197	74	373	837.54	98	70
200	28.478	0.144	0.039	2.03	-0.77	13.298	100	1.5	0.2	85	189	74	371	795.98	98	70
210	29.913	0.144	0.039	2.03	-1.11	13.285	100	1.4	0.1	84	184	74	367	774.88	98	70
220	31.346	0.143	0.039	2.02	-0.71	13.285	100	1.3	0.1	84	179	74	364	756.65	98	70
230	32.785	0.144	0.039	2.01	-0.74	13.285	100	1.2	0.1	84	175	74	360	759.13	98	70
240	34.223	0.144	0.039	2.03	-0.78	13.285	100	1	0.2	84	173	74	353	762.97	98	70
250	35.657	0.143	0.039	2.03	-1.53	13.285	100	0.8	0.2	84	172	74	349	753.26	98	70
260	37.094	0.144	0.039	2.02	-1.33	13.273	100	0.8	0	83	169	74	344	745.05	99	70
270	38.532	0.144	0.039	2.01	-1.23	13.285	100	0.5	0.3	84	179	74	342	714.2	99	70

[illegible]

TEST START TIME:		13:39								1	2	3	4	5	6	
										TEMPERATURES						
	GAS METER	SAMPLE	TUNNEL	ORIFICE	FILTER	TUNNEL VEL	Proportional	Scale	Weight	TUNNEL	FLUE	FILTER	FB REAR	CAT	METER	AMBIENT
ET	VOLUME	RATE(FT3/MIN)	DELTA P	DELTA H	VAC	FT/SEC	Rate (%)	Weight	Chg	TEMP	TEMP	TEMP	TEMP	TEMP	TEMP	TEMP
	44.281		0.039	2.02		13.315	100.3			87	211				94	70

JOB #	035-S-075-1									
TECHNICIA	BTN									
DATE:	2_15_17									
RUN #:	EPA2									
READING INTERVAL:	10									
SAMPLE BOX :	B	METER Y FACTOR:	1.002	PROBE MATERIAL:			SS			
FRONT FILTER #:	3036				REAR FILTER #:	3037				
FINAL LEAK RATE (CFM):	<0.01	@	18	IN-HG	FINAL LEAK RATE (CFM):	<0.01	@	18	IN-HG	

Run Time:

310

Firebox Delta T

76.8

							1	2	3	4	5	6	
							TEMPERATURES						
ET	GAS METER VOLUME	SAMPLE RATE(FT3/MIN)	PROPORTIONAL RATE	FLUE DRAFT	ORIFICE DELTA H	FILTER VAC	LEFT SIDE	RIGHT SIDE	FILTER	FB	FB	METER	STOVE AVG T
										TOP	BOT		
0	0	0	NA	0	0	1	354	358	72	424	174	73	345
10	1.365	0.137	101	-0.03	2	1.35	317	313	75	372	170	74	309
20	2.742	0.138	101	-0.03	1.97	1.68	289	282	75	352	169	77	288
30	4.128	0.139	101	-0.03	2	1.99	276	270	75	356	167	80	282
40	5.517	0.139	101	-0.03	1.99	2.06	276	267	74	361	165	83	281
50	6.910	0.139	101	-0.03	1.99	1.81	278	271	74	413	161	86	292
60	8.307	0.140	101	-0.03	1.99	1.8	290	288	74	474	156	88	310
70	9.708	0.140	101	-0.03	1.98	1.77	304	306	75	513	152	90	325
80	11.110	0.140	101	-0.04	1.98	1.75	317	318	75	538	149	91	337
90	12.514	0.140	101	-0.04	1.98	1.94	328	329	75	547	146	92	343
100	13.926	0.141	101	-0.03	2	1.76	333	334	75	526	143	93	340
110	15.333	0.141	100	-0.03	2	1.98	334	332	75	497	141	94	334
120	16.746	0.141	100	-0.03	1.99	1.71	334	327	75	465	139	95	327
130	18.157	0.141	100	-0.03	2	1.3	333	324	75	440	139	95	322
140	19.570	0.141	100	-0.02	1.98	1.7	331	320	75	420	139	96	317
150	20.983	0.141	100	-0.02	1.99	1.86	327	317	74	408	138	96	312
160	22.397	0.141	100	-0.02	2.01	1.92	325	315	74	406	139	96	310
170	23.810	0.141	100	-0.02	1.99	1.81	324	315	74	412	140	96	312
180	25.223	0.141	100	-0.02	2	2.05	324	315	74	407	140	96	312
190	26.638	0.142	100	-0.01	2.01	1.9	321	313	74	395	140	97	308
200	28.051	0.141	100	-0.02	2.01	1.33	318	310	74	384	141	97	305
210	29.467	0.142	100	-0.01	1.99	1.64	314	307	74	373	141	97	300
220	30.879	0.141	100	-0.01	1.98	1.95	310	303	74	363	140	97	296

Run No

[illegible]

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## Ambient Sample Results:

JOB NUMBER: 035-S-075-1  
 TECHNICIAN: BTN  
 DATE: 2\_15\_17  
 RUN NUMBER: EPA2

METER Y FACTOR: **0.997**

	<u>Sample Volume (L)</u>	<u>Meter Temp °F</u>	<u>ΔH</u>	<u>ΔP</u>
Start	0	80	0	0
End	1736.481	98.5	0	0

Total Sample Volume - Vm  
 Total Sample Volume - Vm  
 Average Sample Rate  
 Sample Time  
 Average Meter Temperature  
 Total Sample Volume (Standard Conditions) - Vmstd

Total Particulates

Particulate Concentration (dry-standard)  
 Particulate Emission Rate

SAMPLE INFORMATION	
1736.481	Liters
61.323	ft³
0.20	ft³/min
310.00	Minutes
89.25	°F
58.381	dscf
0.2	mg
0.000003426	grams/dscf
0.000038710	grams/hour

JOB NUMBER

035-S-075-1

RUN #

EPA2

DATE:

2\_15\_17

BURN RATE

0.77

KG/HR DRY

FILTER A  
PARTICULATE

5.3

mg

FILTER B  
PARTICULATE

5.1

mg

Total Sample Volume - Vm  
 Average Gas Velocity in Dilution Tunnel - vs  
 Average Gas Flow Rate in Dilution Tunnel - Qsd  
 Total Sample Volume (Standard Conditions) - Vmstd

Average Tunnel Temperature  
 Average Delta p

Average Gas Meter Temperature

Average Delta H

Total Time of Test

Total Particulates

Particulate Concentration (dry-standard)

**Ambient Train (dry-standard)****Net (dry-standard)**

Particulate Emission Rate

Total PM Emissions

Average Total PM Emissions

AVERAGE PARTICULATE

EMISSIONS RATE

% OF AVERAGE

Emissions Factor

SAMPLE A  
INFORMATION

44.28

13.37

8861.02

42.58

feet/second

dscf/hour

dscf

86.6

F

0.039

94

F

2.02

in-h20

310

min

5.3

mg

0.00012

grams/dscf

0.000003426

grams/dscf

0.000121058

grams/dscf

1.07

grams/hour

5.54

grams

5.49

grams

1.06

grams/hour

100.9

1.387

g/Kg -Dry

SAMPLE B  
INFORMATION

43.61

13.37

8861.02

41.70

feet/second

dscf/hour

dscf

86.6

F

0.039

92

F

1.99

in-h20

310

min

5.1

mg

0.00012

grams/dscf

0.000003426

grams/dscf

0.00011887

grams/dscf

1.05

grams/hour

5.44

grams