



WASTE MANAGEMENT

1550 Balmer Road
Model City, NY 14107
716 286 1550
716 286 0211 Fax

June 24, 2015

Mr. Al Zylinski
New York State Department of
Environmental Conservation
Region 9
270 Michigan Avenue
Buffalo, New York 14203-2915

Re: Soil Stockpile Wind Erosion Calculations – RMU-2

Dear Mr. Zylinski:

Attached please find Soil Stockpile Wind Erosion Calculations for the soil stockpiles proposed for Residuals Management Unit No. 2 (RMU-2), prepared by Conestoga-Rovers & Associates, Inc. (CRA). These calculations are being submitted based on your verbal request to perform an evaluation of the potential fugitive dust emissions from the proposed soil stockpiles. Based on the results of these calculations, there are no quantifiable emissions of PM10 or PM2.5 from soil stockpile wind erosion for the stockpiles proposed for RMU-2. These calculations may be used to supplement the information submitted in the Air State Facility Permit modification request submitted by CWM on February 5, 2015.

Please call Mr. Jonathan Rizzo at (716) 286-0354 or myself at (716) 286-0246 if you have any questions or comments.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Sincerely,
CWM CHEMICAL SERVICES, LLC

Jill A. Banaszak
Technical Manager
Model City Facility

JPR/JAB/jpr
Attachment

June 24, 2015
Mr. Al Zylinski
NYSDEC
Re: Soil Stockpile Wind Erosion Calculations – RMU-2

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cc:	D. Denk	- NYSDEC/Region 9
	A. Carlacchi	- NYSDEC/Region 9
	P. Grasso	- NYSDEC/Region 9
	B. Rostami	- NYSDEC/Region 9
	C. Laport	- NYSDEC/Region 9
	M. Cruden	- NYSDEC/Albany, NY
	T. Killeen	- NYSDEC/Albany, NY
	M. Mortefolio	- NYSDEC/Albany, NY
	On-site Monitors	- NYSDEC/ Model City, NY
	A. Everett	- USEPA/Region II
	A. Park	- USEPA/Region II
	N. Azzam	- USEPA/Region II
	J. Devald	- NCHD/Lockport, NY
	M. Mahar	- CWM/Model City, NY
	J. Rizzo	- CWM/Model City, NY
	D. Darragh	- Cohen & Grigsby/Pittsburgh, PA
	EMD Subject File	
	Q & A	



**CONESTOGA-ROVERS
& ASSOCIATES**

2055 Niagara Falls Blvd., Suite #3
Niagara Falls, New York 14304
Telephone: (716) 297-6150 Fax: (716) 297-2265
www.CRAworld.com

MEMORANDUM

To: Jonathan Rizzo (CWM) REF. No.: 080335

FROM: Steve Wilsey, Bryan Szalda (CRA)/cs/1 *→ MW BPS* DATE: June 19, 2015

RE: **Soil Stockpile Wind Erosion Calculations**

At the request of CWM Chemical Services, LLC, Conestoga-Rovers & Associates, Inc. (CRA) estimated wind erosion calculations from soil stockpiles at the CWM Model City that will be utilized during construction/operation of the RMU-2 landfill. Calculations were done according to the methodology given in USEPA AP-42 (Compilation of Air Pollutant Emission Factors), Section 13.2.5: Industrial Wind Erosion (November 2006). The following data was referenced for the calculation methodology:

- The maximum surface area of the stockpile (2.86 acres) was referenced from Appendix H of the Draft Environmental Impact Statement
- The maximum wind speed for each day (2014 calendar year) was obtained from the on-site meteorological weather station (data validated by O'Brien & Gere)

The following assumptions were utilized in the work:

- Disturbances of the soil stockpile occur daily during construction season which occurs from April 1 to October 31 during the year; therefore, the number of disturbances per year equals 214 (i.e., N=214 in the calculations)

Attachments 1 and 2 provide the calculation sheets for PM₁₀ and PM_{2.5}, respectively. Based on the results, there are no quantifiable emissions of PM₁₀ or PM_{2.5} from soil stockpile wind erosion at the CWM Model City facility. The calculations are considered conservative since:

- It is assumed that the entire soil stockpile area is disturbed daily when only a small fraction is actually disturbed during any one day of operation
- Calculations were done assuming operation on Sunday, when the facility is actually closed on this day

Wind Erosion

Fugitive dust emissions from the soil stockpile will use emission factor equations in AP-42 Section 13.2.5 for Industrial Wind erosion

Equation 2:

$$\text{Emission factor} = k \sum_{i=1}^N P_i$$

where:

k = particle size multiplier

PM10 k=0.5

N = number of disturbances of soil pile per year = 214 (daily during April 1 to October 31 construction season)

P_i = erosion potential corresponding to observed (or probable) fastest mile of wind for ith period between disturbances, g/m^2

For PM₁₀, k = 0.5

The erosion potential function for a dry, exposed surface is:

$$P = 58 * (u^* - u_t^*)^2 + 25 * (u^* - u_t^*) \quad [P = 0 \text{ for } u^* < u_t^*]$$

where:

u^* = friction velocity (m/s)

u_t^* = threshold friction velocity (m/s)

which = 1.02 m/s, as referenced from Table 13.2.5-2 of AP-42 Section 13.2.5 for overburden materials

$$u^* = (0.053) * (u_{10}^+)$$

where: u_{10}^+ = fastest mile of reference anemometer at 10m for period between disturbances
(This equation is used for relatively large flat piles with a height-to-base ratio less than 0.2).

$$\text{total area} = 2.86 \text{ acres} = 11,574 \text{ m}^2$$

$$\text{disturbed area} = 2.86 \text{ acres} = 11,574 \text{ m}^2 \text{ (maximum amount of disturbed area in any one day)}$$

Wind speed data from on-site meteorological station (anemometer height = 10 meters)

<i>i</i>	<i>MONTH</i>	<i>DAY</i>	<i>MAX</i> <i>WIND</i> <i>SPEED</i>	u_{10}^+ (in mph at 10m)	(m/s)	u^* (m/s)	<i>P</i> (g/m ²)	(g)	<i>k=0.5 for PM₁₀</i> (g)	(lbs)	(tons)
1	APR	1	17.71	17.7	7.92	0.42	0.00	0.00	0.00	0.00	0.00
2	APR	2	22.52	22.5	10.07	0.53	0.00	0.00	0.00	0.00	0.00
3	APR	3	20.25	20.3	9.05	0.48	0.00	0.00	0.00	0.00	0.00
4	APR	4	32.15	32.2	14.37	0.76	0.00	0.00	0.00	0.00	0.00
5	APR	5	30.36	30.4	13.57	0.72	0.00	0.00	0.00	0.00	0.00
6	APR	6	13.93	13.9	6.23	0.33	0.00	0.00	0.00	0.00	0.00
7	APR	7	15.04	15.0	6.72	0.36	0.00	0.00	0.00	0.00	0.00
8	APR	8	17.67	17.7	7.90	0.42	0.00	0.00	0.00	0.00	0.00
9	APR	9	16.71	16.7	7.47	0.40	0.00	0.00	0.00	0.00	0.00
10	APR	10	31.11	31.1	13.91	0.74	0.00	0.00	0.00	0.00	0.00
11	APR	11	10.56	10.6	4.72	0.25	0.00	0.00	0.00	0.00	0.00
12	APR	12	16.16	16.2	7.22	0.38	0.00	0.00	0.00	0.00	0.00
13	APR	13	27.22	27.2	12.17	0.64	0.00	0.00	0.00	0.00	0.00
14	APR	14	30.65	30.7	13.70	0.73	0.00	0.00	0.00	0.00	0.00
15	APR	15	22.51	22.5	10.06	0.53	0.00	0.00	0.00	0.00	0.00
16	APR	16	19.35	19.4	8.65	0.46	0.00	0.00	0.00	0.00	0.00
17	APR	17	14.08	14.1	6.29	0.33	0.00	0.00	0.00	0.00	0.00
18	APR	18	17.21	17.2	7.69	0.41	0.00	0.00	0.00	0.00	0.00
19	APR	19	15.1	15.1	6.75	0.36	0.00	0.00	0.00	0.00	0.00
20	APR	20	10.48	10.5	4.68	0.25	0.00	0.00	0.00	0.00	0.00
21	APR	21	15.3	15.3	6.84	0.36	0.00	0.00	0.00	0.00	0.00
22	APR	22	21.23	21.2	9.49	0.50	0.00	0.00	0.00	0.00	0.00
23	APR	23	17.11	17.1	7.65	0.41	0.00	0.00	0.00	0.00	0.00
24	APR	24	12.43	12.4	5.56	0.29	0.00	0.00	0.00	0.00	0.00
25	APR	25	16.47	16.5	7.36	0.39	0.00	0.00	0.00	0.00	0.00
26	APR	26	14.63	14.6	6.54	0.35	0.00	0.00	0.00	0.00	0.00
27	APR	27	11.31	11.3	5.06	0.27	0.00	0.00	0.00	0.00	0.00
28	APR	28	21.07	21.1	9.42	0.50	0.00	0.00	0.00	0.00	0.00
29	APR	29	20.29	20.3	9.07	0.48	0.00	0.00	0.00	0.00	0.00
30	APR	30	10.97	11.0	4.90	0.26	0.00	0.00	0.00	0.00	0.00

<i>i</i>	<i>MONTH</i>	<i>DAY</i>	<i>MAX</i> <i>WIND</i> <i>SPEED</i>	u_{10}^+ (in mph at 10m)	(m/s)	u^* (m/s)	<i>P</i> (g/m ²)	(g)	<i>k=0.5 for PM₁₀</i> (g)	(lbs)	(tons)
31	MAY	1	26.88	26.9	12.02	0.64	0.00	0.00	0.00	0.00	0.00
32	MAY	2	21.04	21.0	9.41	0.50	0.00	0.00	0.00	0.00	0.00
33	MAY	3	22.92	22.9	10.25	0.54	0.00	0.00	0.00	0.00	0.00
34	MAY	4	25.01	25.0	11.18	0.59	0.00	0.00	0.00	0.00	0.00
35	MAY	5	11.73	11.7	5.24	0.28	0.00	0.00	0.00	0.00	0.00
36	MAY	6	12.82	12.8	5.73	0.30	0.00	0.00	0.00	0.00	0.00
37	MAY	7	15.26	15.3	6.82	0.36	0.00	0.00	0.00	0.00	0.00
38	MAY	8	13.18	13.2	5.89	0.31	0.00	0.00	0.00	0.00	0.00
39	MAY	9	30.95	31.0	13.84	0.73	0.00	0.00	0.00	0.00	0.00
40	MAY	10	20.46	20.5	9.15	0.48	0.00	0.00	0.00	0.00	0.00
41	MAY	11	14.44	14.4	6.46	0.34	0.00	0.00	0.00	0.00	0.00
42	MAY	12	12.07	12.1	5.40	0.29	0.00	0.00	0.00	0.00	0.00
43	MAY	13	22.02	22.0	9.84	0.52	0.00	0.00	0.00	0.00	0.00
44	MAY	14	18.37	18.4	8.21	0.44	0.00	0.00	0.00	0.00	0.00
45	MAY	15	21.29	21.3	9.52	0.50	0.00	0.00	0.00	0.00	0.00
46	MAY	16	13.54	13.5	6.05	0.32	0.00	0.00	0.00	0.00	0.00
47	MAY	17	12.03	12.0	5.38	0.29	0.00	0.00	0.00	0.00	0.00
48	MAY	18	17.37	17.4	7.77	0.41	0.00	0.00	0.00	0.00	0.00
49	MAY	19	12.26	12.3	5.48	0.29	0.00	0.00	0.00	0.00	0.00
50	MAY	20	11.63	11.6	5.20	0.28	0.00	0.00	0.00	0.00	0.00
51	MAY	21	9.92	9.9	4.43	0.24	0.00	0.00	0.00	0.00	0.00
52	MAY	22	22.47	22.5	10.04	0.53	0.00	0.00	0.00	0.00	0.00
53	MAY	23	13.54	13.5	6.05	0.32	0.00	0.00	0.00	0.00	0.00
54	MAY	24	14.21	14.2	6.35	0.34	0.00	0.00	0.00	0.00	0.00
55	MAY	25	15.55	15.6	6.95	0.37	0.00	0.00	0.00	0.00	0.00
56	MAY	26	17.87	17.9	7.99	0.42	0.00	0.00	0.00	0.00	0.00
57	MAY	27	19.34	19.3	8.65	0.46	0.00	0.00	0.00	0.00	0.00
58	MAY	28	14.1	14.1	6.30	0.33	0.00	0.00	0.00	0.00	0.00
59	MAY	29	14.9	14.9	6.66	0.35	0.00	0.00	0.00	0.00	0.00
60	MAY	30	12.18	12.2	5.44	0.29	0.00	0.00	0.00	0.00	0.00
61	MAY	31	16.64	16.6	7.44	0.39	0.00	0.00	0.00	0.00	0.00

<i>i</i>	<i>MONTH</i>	<i>DAY</i>	<i>MAX</i> <i>WIND</i> <i>SPEED</i>	u_{10}^+ (in mph at 10m)	(m/s)	u^* (m/s)	<i>P</i> (g/m ²)	(g)	<i>k=0.5 for PM₁₀</i>		
									(g)	(lbs)	(tons)
62	JUN	1	10.81	10.8	4.83	0.26	0.00	0.00	0.00	0.00	0.00
63	JUN	2	21.16	21.2	9.46	0.50	0.00	0.00	0.00	0.00	0.00
64	JUN	3	23.78	23.8	10.63	0.56	0.00	0.00	0.00	0.00	0.00
65	JUN	4	15.65	15.7	7.00	0.37	0.00	0.00	0.00	0.00	0.00
66	JUN	5	13.08	13.1	5.85	0.31	0.00	0.00	0.00	0.00	0.00
67	JUN	6	12.11	12.1	5.41	0.29	0.00	0.00	0.00	0.00	0.00
68	JUN	7	10.06	10.1	4.50	0.24	0.00	0.00	0.00	0.00	0.00
69	JUN	8	10.4	10.4	4.65	0.25	0.00	0.00	0.00	0.00	0.00
70	JUN	9	15.26	15.3	6.82	0.36	0.00	0.00	0.00	0.00	0.00
71	JUN	10	12.81	12.8	5.73	0.30	0.00	0.00	0.00	0.00	0.00
72	JUN	11	15.1	15.1	6.75	0.36	0.00	0.00	0.00	0.00	0.00
73	JUN	12	18.67	18.7	8.35	0.44	0.00	0.00	0.00	0.00	0.00
74	JUN	13	15.35	15.4	6.86	0.36	0.00	0.00	0.00	0.00	0.00
75	JUN	14	14.71	14.7	6.58	0.35	0.00	0.00	0.00	0.00	0.00
76	JUN	15	11.63	11.6	5.20	0.28	0.00	0.00	0.00	0.00	0.00
77	JUN	16	13.32	13.3	5.95	0.32	0.00	0.00	0.00	0.00	0.00
78	JUN	17	30.78	30.8	13.76	0.73	0.00	0.00	0.00	0.00	0.00
79	JUN	18	12.58	12.6	5.62	0.30	0.00	0.00	0.00	0.00	0.00
80	JUN	19	13.55	13.6	6.06	0.32	0.00	0.00	0.00	0.00	0.00
81	JUN	20	10.9	10.9	4.87	0.26	0.00	0.00	0.00	0.00	0.00
82	JUN	21	13.86	13.9	6.20	0.33	0.00	0.00	0.00	0.00	0.00
83	JUN	22	12.04	12.0	5.38	0.29	0.00	0.00	0.00	0.00	0.00
84	JUN	23	10.5	10.5	4.69	0.25	0.00	0.00	0.00	0.00	0.00
85	JUN	24	21.62	21.6	9.67	0.51	0.00	0.00	0.00	0.00	0.00
86	JUN	25	11.19	11.2	5.00	0.27	0.00	0.00	0.00	0.00	0.00
87	JUN	26	9.61	9.6	4.30	0.23	0.00	0.00	0.00	0.00	0.00
88	JUN	27	13.54	13.5	6.05	0.32	0.00	0.00	0.00	0.00	0.00
89	JUN	28	12.52	12.5	5.60	0.30	0.00	0.00	0.00	0.00	0.00
90	JUN	29	19.08	19.1	8.53	0.45	0.00	0.00	0.00	0.00	0.00
91	JUN	30	20.65	20.7	9.23	0.49	0.00	0.00	0.00	0.00	0.00

<i>i</i>	<i>MONTH</i>	<i>DAY</i>	<i>MAX</i> <i>WIND</i> <i>SPEED</i>	u_{10}^{+} (in mph at 10m)	(m/s)	u^{*} (m/s)	<i>P</i> (g/m ²)	(g)	<i>k=0.5 for PM₁₀</i> (g)	(lbs)	(tons)
92	JUL	1	24.29	24.3	10.86	0.58	0.00	0.00	0.00	0.00	0.00
93	JUL	2	20.8	20.8	9.30	0.49	0.00	0.00	0.00	0.00	0.00
94	JUL	3	13.37	13.4	5.98	0.32	0.00	0.00	0.00	0.00	0.00
95	JUL	4	13.56	13.6	6.06	0.32	0.00	0.00	0.00	0.00	0.00
96	JUL	5	15.79	15.8	7.06	0.37	0.00	0.00	0.00	0.00	0.00
97	JUL	6	23.63	23.6	10.56	0.56	0.00	0.00	0.00	0.00	0.00
98	JUL	7	24.4	24.4	10.91	0.58	0.00	0.00	0.00	0.00	0.00
99	JUL	8	19.66	19.7	8.79	0.47	0.00	0.00	0.00	0.00	0.00
100	JUL	9	13.47	13.5	6.02	0.32	0.00	0.00	0.00	0.00	0.00
101	JUL	10	10.5	10.5	4.69	0.25	0.00	0.00	0.00	0.00	0.00
102	JUL	11	10.55	10.6	4.72	0.25	0.00	0.00	0.00	0.00	0.00
103	JUL	12	12.84	12.8	5.74	0.30	0.00	0.00	0.00	0.00	0.00
104	JUL	13	21.27	21.3	9.51	0.50	0.00	0.00	0.00	0.00	0.00
105	JUL	14	10.76	10.8	4.81	0.25	0.00	0.00	0.00	0.00	0.00
106	JUL	15	22.35	22.4	9.99	0.53	0.00	0.00	0.00	0.00	0.00
107	JUL	16	14.12	14.1	6.31	0.33	0.00	0.00	0.00	0.00	0.00
108	JUL	17	13.53	13.5	6.05	0.32	0.00	0.00	0.00	0.00	0.00
109	JUL	18	7.306	7.3	3.27	0.17	0.00	0.00	0.00	0.00	0.00
110	JUL	19	10.05	10.1	4.49	0.24	0.00	0.00	0.00	0.00	0.00
111	JUL	20	9.71	9.7	4.34	0.23	0.00	0.00	0.00	0.00	0.00
112	JUL	21	8.76	8.8	3.92	0.21	0.00	0.00	0.00	0.00	0.00
113	JUL	22	13.57	13.6	6.07	0.32	0.00	0.00	0.00	0.00	0.00
114	JUL	23	18.05	18.1	8.07	0.43	0.00	0.00	0.00	0.00	0.00
115	JUL	24	12.52	12.5	5.60	0.30	0.00	0.00	0.00	0.00	0.00
116	JUL	25	16.64	16.6	7.44	0.39	0.00	0.00	0.00	0.00	0.00
117	JUL	26	14.1	14.1	6.30	0.33	0.00	0.00	0.00	0.00	0.00
118	JUL	27	16.69	16.7	7.46	0.40	0.00	0.00	0.00	0.00	0.00
119	JUL	28	18.43	18.4	8.24	0.44	0.00	0.00	0.00	0.00	0.00
120	JUL	29	13.54	13.5	6.05	0.32	0.00	0.00	0.00	0.00	0.00
121	JUL	30	11.5	11.5	5.14	0.27	0.00	0.00	0.00	0.00	0.00
122	JUL	31	12.05	12.1	5.39	0.29	0.00	0.00	0.00	0.00	0.00

<i>i</i>	<i>MONTH</i>	<i>DAY</i>	<i>MAX</i> <i>WIND</i> <i>SPEED</i>	u_{10}^{+} (in mph at 10m)	(m/s)	u^{*} (m/s)	<i>P</i> (g/m ²)	(g)	<i>k=0.5 for PM</i> ₁₀ (g)	(lbs)	(tons)
123	AUG	1	16.06	16.1	7.18	0.38	0.00	0.00	0.00	0.00	0.00
124	AUG	2	10.52	10.5	4.70	0.25	0.00	0.00	0.00	0.00	0.00
125	AUG	3	7.162	7.2	3.20	0.17	0.00	0.00	0.00	0.00	0.00
126	AUG	4	16.67	16.7	7.45	0.39	0.00	0.00	0.00	0.00	0.00
127	AUG	5	7.222	7.2	3.23	0.17	0.00	0.00	0.00	0.00	0.00
128	AUG	6	9.23	9.2	4.13	0.22	0.00	0.00	0.00	0.00	0.00
129	AUG	7	9.94	9.9	4.44	0.24	0.00	0.00	0.00	0.00	0.00
130	AUG	8	9.98	10.0	4.46	0.24	0.00	0.00	0.00	0.00	0.00
131	AUG	9	10.69	10.7	4.78	0.25	0.00	0.00	0.00	0.00	0.00
132	AUG	10	12.44	12.4	5.56	0.29	0.00	0.00	0.00	0.00	0.00
133	AUG	11	15.76	15.8	7.05	0.37	0.00	0.00	0.00	0.00	0.00
134	AUG	12	18.77	18.8	8.39	0.44	0.00	0.00	0.00	0.00	0.00
135	AUG	13	21.97	22.0	9.82	0.52	0.00	0.00	0.00	0.00	0.00
136	AUG	14	19.65	19.7	8.78	0.47	0.00	0.00	0.00	0.00	0.00
137	AUG	15	17.26	17.3	7.72	0.41	0.00	0.00	0.00	0.00	0.00
138	AUG	16	21.01	21.0	9.39	0.50	0.00	0.00	0.00	0.00	0.00
139	AUG	17	10.39	10.4	4.64	0.25	0.00	0.00	0.00	0.00	0.00
140	AUG	18	11.09	11.1	4.96	0.26	0.00	0.00	0.00	0.00	0.00
141	AUG	19	9.82	9.8	4.39	0.23	0.00	0.00	0.00	0.00	0.00
142	AUG	20	10.22	10.2	4.57	0.24	0.00	0.00	0.00	0.00	0.00
143	AUG	21	12.38	12.4	5.53	0.29	0.00	0.00	0.00	0.00	0.00
144	AUG	22	11.49	11.5	5.14	0.27	0.00	0.00	0.00	0.00	0.00
145	AUG	23	14.62	14.6	6.54	0.35	0.00	0.00	0.00	0.00	0.00
146	AUG	24	11.02	11.0	4.93	0.26	0.00	0.00	0.00	0.00	0.00
147	AUG	25	14.86	14.9	6.64	0.35	0.00	0.00	0.00	0.00	0.00
148	AUG	26	17.49	17.5	7.82	0.41	0.00	0.00	0.00	0.00	0.00
149	AUG	27	16.23	16.2	7.26	0.38	0.00	0.00	0.00	0.00	0.00
150	AUG	28	15.4	15.4	6.88	0.36	0.00	0.00	0.00	0.00	0.00
151	AUG	29	10.87	10.9	4.86	0.26	0.00	0.00	0.00	0.00	0.00
152	AUG	30	16.52	16.5	7.39	0.39	0.00	0.00	0.00	0.00	0.00
153	AUG	31	18.04	18.0	8.06	0.43	0.00	0.00	0.00	0.00	0.00

<i>i</i>	<i>MONTH</i>	<i>DAY</i>	<i>MAX</i> <i>WIND</i> <i>SPEED</i>	u_{10}^+ (in mph at 10m)	(m/s)	u^* (m/s)	<i>P</i> (g/m ²)	(g)	<i>k=0.5 for PM₁₀</i> (g)	(lbs)	(tons)
154	SEP	1	15.22	15.2	6.80	0.36	0.00	0.00	0.00	0.00	0.00
155	SEP	2	18.67	18.7	8.35	0.44	0.00	0.00	0.00	0.00	0.00
156	SEP	3	11.27	11.3	5.04	0.27	0.00	0.00	0.00	0.00	0.00
157	SEP	4	15.71	15.7	7.02	0.37	0.00	0.00	0.00	0.00	0.00
158	SEP	5	25.55	25.6	11.42	0.61	0.00	0.00	0.00	0.00	0.00
159	SEP	6	17.41	17.4	7.78	0.41	0.00	0.00	0.00	0.00	0.00
160	SEP	7	11.06	11.1	4.94	0.26	0.00	0.00	0.00	0.00	0.00
161	SEP	8	12.28	12.3	5.49	0.29	0.00	0.00	0.00	0.00	0.00
162	SEP	9	12.08	12.1	5.40	0.29	0.00	0.00	0.00	0.00	0.00
163	SEP	10	26.89	26.9	12.02	0.64	0.00	0.00	0.00	0.00	0.00
164	SEP	11	24.11	24.1	10.78	0.57	0.00	0.00	0.00	0.00	0.00
165	SEP	12	12.96	13.0	5.79	0.31	0.00	0.00	0.00	0.00	0.00
166	SEP	13	16.14	16.1	7.22	0.38	0.00	0.00	0.00	0.00	0.00
167	SEP	14	8.94	8.9	4.00	0.21	0.00	0.00	0.00	0.00	0.00
168	SEP	15	11.93	11.9	5.33	0.28	0.00	0.00	0.00	0.00	0.00
169	SEP	16	12.36	12.4	5.53	0.29	0.00	0.00	0.00	0.00	0.00
170	SEP	17	16.6	16.6	7.42	0.39	0.00	0.00	0.00	0.00	0.00
171	SEP	18	14.74	14.7	6.59	0.35	0.00	0.00	0.00	0.00	0.00
172	SEP	19	11.31	11.3	5.06	0.27	0.00	0.00	0.00	0.00	0.00
173	SEP	20	26.07	26.1	11.65	0.62	0.00	0.00	0.00	0.00	0.00
174	SEP	21	25.8	25.8	11.53	0.61	0.00	0.00	0.00	0.00	0.00
175	SEP	22	17.85	17.9	7.98	0.42	0.00	0.00	0.00	0.00	0.00
176	SEP	23	15.11	15.1	6.75	0.36	0.00	0.00	0.00	0.00	0.00
177	SEP	24	13.36	13.4	5.97	0.32	0.00	0.00	0.00	0.00	0.00
178	SEP	25	10.9	10.9	4.87	0.26	0.00	0.00	0.00	0.00	0.00
179	SEP	26	8.42	8.4	3.76	0.20	0.00	0.00	0.00	0.00	0.00
180	SEP	27	7.052	7.1	3.15	0.17	0.00	0.00	0.00	0.00	0.00
181	SEP	28	8.71	8.7	3.89	0.21	0.00	0.00	0.00	0.00	0.00
182	SEP	29	10.41	10.4	4.65	0.25	0.00	0.00	0.00	0.00	0.00
183	SEP	30	11.09	11.1	4.96	0.26	0.00	0.00	0.00	0.00	0.00

<i>i</i>	<i>MONTH</i>	<i>DAY</i>	<i>MAX</i> <i>WIND</i> <i>SPEED</i>	u_{10}^{+} (in mph at 10m)	(m/s)	u^{*} (m/s)	P (g/m ²)	(g)	$k=0.5$ for PM_{10}		
									(g)	(lbs)	(tons)
184	OCT	1	10.49	10.5	4.69	0.25	0.00	0.00	0.00	0.00	0.00
185	OCT	2	9.97	10.0	4.46	0.24	0.00	0.00	0.00	0.00	0.00
186	OCT	3	24.34	24.3	10.88	0.58	0.00	0.00	0.00	0.00	0.00
187	OCT	4	21.96	22.0	9.82	0.52	0.00	0.00	0.00	0.00	0.00
188	OCT	5	20.8	20.8	9.30	0.49	0.00	0.00	0.00	0.00	0.00
189	OCT	6	20.81	20.8	9.30	0.49	0.00	0.00	0.00	0.00	0.00
190	OCT	7	21.03	21.0	9.40	0.50	0.00	0.00	0.00	0.00	0.00
191	OCT	8	26.28	26.3	11.75	0.62	0.00	0.00	0.00	0.00	0.00
192	OCT	9	22.4	22.4	10.01	0.53	0.00	0.00	0.00	0.00	0.00
193	OCT	10	13.73	13.7	6.14	0.33	0.00	0.00	0.00	0.00	0.00
194	OCT	11	12.38	12.4	5.53	0.29	0.00	0.00	0.00	0.00	0.00
195	OCT	12	13.48	13.5	6.03	0.32	0.00	0.00	0.00	0.00	0.00
196	OCT	13	13.25	13.3	5.92	0.31	0.00	0.00	0.00	0.00	0.00
197	OCT	14	27.86	27.9	12.45	0.66	0.00	0.00	0.00	0.00	0.00
198	OCT	15	19	19.0	8.49	0.45	0.00	0.00	0.00	0.00	0.00
199	OCT	16	16.21	16.2	7.25	0.38	0.00	0.00	0.00	0.00	0.00
200	OCT	17	20.64	20.6	9.23	0.49	0.00	0.00	0.00	0.00	0.00
201	OCT	18	19.91	19.9	8.90	0.47	0.00	0.00	0.00	0.00	0.00
202	OCT	19	15.64	15.6	6.99	0.37	0.00	0.00	0.00	0.00	0.00
203	OCT	20	15.86	15.9	7.09	0.38	0.00	0.00	0.00	0.00	0.00
204	OCT	21	17.67	17.7	7.90	0.42	0.00	0.00	0.00	0.00	0.00
205	OCT	22	14.5	14.5	6.48	0.34	0.00	0.00	0.00	0.00	0.00
206	OCT	23	12.9	12.9	5.77	0.31	0.00	0.00	0.00	0.00	0.00
207	OCT	24	12.76	12.8	5.70	0.30	0.00	0.00	0.00	0.00	0.00
208	OCT	25	25.18	25.2	11.26	0.60	0.00	0.00	0.00	0.00	0.00
209	OCT	26	22.26	22.3	9.95	0.53	0.00	0.00	0.00	0.00	0.00
210	OCT	27	9.24	9.2	4.13	0.22	0.00	0.00	0.00	0.00	0.00
211	OCT	28	26.9	26.9	12.03	0.64	0.00	0.00	0.00	0.00	0.00
212	OCT	29	15.73	15.7	7.03	0.37	0.00	0.00	0.00	0.00	0.00
213	OCT	30	11.33	11.3	5.06	0.27	0.00	0.00	0.00	0.00	0.00
214	OCT	31	7.098	7.1	3.17	0.17	0.00	0.00	0.00	0.00	0.00
										TOTAL	0.00
											TPY

Wind Erosion

Fugitive dust emissions from the soil stockpile will use emission factor equations in AP-42 Section 13.2.5 for Industrial Wind erosion

Equation 2:

$$\text{Emission factor} = k \sum_{i=1}^N P_i$$

where:

k = particle size multiplier

PM_{2.5} k=0.075

N = number of disturbances of soil pile per year = 214 (daily during April 1 to October 31 construction season)

P_i = erosion potential corresponding to observed (or probable) fastest mile of wind for ith period between disturbances, g/m²

For PM_{2.5}, k = 0.075

The erosion potential function for a dry, exposed surface is:

$$P = 58 * (u^* - u_t^*)^2 + 25 * (u^* - u_t^*) \quad [P = 0 \text{ for } u^* < u_t^*]$$

where:

u* = friction velocity (m/s)

u_t* = threshold friction velocity (m/s)

which = 1.02 m/s, as referenced from Table 13.2.5-2 of AP-42 Section 13.2.5 for overburden materials

$$u^* = (0.053)^*(u_{10}^+)$$

where: u₁₀⁺ = fastest mile of reference anemometer at 10m for period between disturbances
(This equation is used for relatively large flat piles with a height-to-base ratio less than 0.2).

$$\text{total area} = 2.86 \text{ acres} = 11,574 \text{ m}^2$$

$$\text{disturbed area} = 2.86 \text{ acres} = 11,574 \text{ m}^2 \text{ (maximum amount of disturbed area in any one day)}$$

Wind speed data from on-site meteorological station (anemometer height = 10 meters)

<i>i</i>	<i>MONTH</i>	<i>DAY</i>	<i>MAX</i> <i>WIND</i> <i>SPEED</i>	u_{10}^{+} (in mph at 10m)	(m/s)	u^{*} (m/s)	<i>P</i> (g/m ²)	(g)	<i>k=0.075 for</i> <i>PM_{2.5}</i> (g)	(lbs)	(tons)
1	APR	1	17.71	17.7	7.92	0.42	0.00	0.00	0.00	0.00	0.00
2	APR	2	22.52	22.5	10.07	0.53	0.00	0.00	0.00	0.00	0.00
3	APR	3	20.25	20.3	9.05	0.48	0.00	0.00	0.00	0.00	0.00
4	APR	4	32.15	32.2	14.37	0.76	0.00	0.00	0.00	0.00	0.00
5	APR	5	30.36	30.4	13.57	0.72	0.00	0.00	0.00	0.00	0.00
6	APR	6	13.93	13.9	6.23	0.33	0.00	0.00	0.00	0.00	0.00
7	APR	7	15.04	15.0	6.72	0.36	0.00	0.00	0.00	0.00	0.00
8	APR	8	17.67	17.7	7.90	0.42	0.00	0.00	0.00	0.00	0.00
9	APR	9	16.71	16.7	7.47	0.40	0.00	0.00	0.00	0.00	0.00
10	APR	10	31.11	31.1	13.91	0.74	0.00	0.00	0.00	0.00	0.00
11	APR	11	10.56	10.6	4.72	0.25	0.00	0.00	0.00	0.00	0.00
12	APR	12	16.16	16.2	7.22	0.38	0.00	0.00	0.00	0.00	0.00
13	APR	13	27.22	27.2	12.17	0.64	0.00	0.00	0.00	0.00	0.00
14	APR	14	30.65	30.7	13.70	0.73	0.00	0.00	0.00	0.00	0.00
15	APR	15	22.51	22.5	10.06	0.53	0.00	0.00	0.00	0.00	0.00
16	APR	16	19.35	19.4	8.65	0.46	0.00	0.00	0.00	0.00	0.00
17	APR	17	14.08	14.1	6.29	0.33	0.00	0.00	0.00	0.00	0.00
18	APR	18	17.21	17.2	7.69	0.41	0.00	0.00	0.00	0.00	0.00
19	APR	19	15.1	15.1	6.75	0.36	0.00	0.00	0.00	0.00	0.00
20	APR	20	10.48	10.5	4.68	0.25	0.00	0.00	0.00	0.00	0.00
21	APR	21	15.3	15.3	6.84	0.36	0.00	0.00	0.00	0.00	0.00
22	APR	22	21.23	21.2	9.49	0.50	0.00	0.00	0.00	0.00	0.00
23	APR	23	17.11	17.1	7.65	0.41	0.00	0.00	0.00	0.00	0.00
24	APR	24	12.43	12.4	5.56	0.29	0.00	0.00	0.00	0.00	0.00
25	APR	25	16.47	16.5	7.36	0.39	0.00	0.00	0.00	0.00	0.00
26	APR	26	14.63	14.6	6.54	0.35	0.00	0.00	0.00	0.00	0.00
27	APR	27	11.31	11.3	5.06	0.27	0.00	0.00	0.00	0.00	0.00
28	APR	28	21.07	21.1	9.42	0.50	0.00	0.00	0.00	0.00	0.00
29	APR	29	20.29	20.3	9.07	0.48	0.00	0.00	0.00	0.00	0.00
30	APR	30	10.97	11.0	4.90	0.26	0.00	0.00	0.00	0.00	0.00

<i>i</i>	<i>MONTH</i>	<i>DAY</i>	<i>MAX</i> <i>WIND</i> <i>SPEED</i>	u_{10}^+ (in mph at 10m)	(m/s)	u^* (m/s)	P (g/m ²)	(g)	$k=0.075$ for $PM_{2.5}$ (g)	(lbs)	(tons)
31	MAY	1	26.88	26.9	12.02	0.64	0.00	0.00	0.00	0.00	0.00
32	MAY	2	21.04	21.0	9.41	0.50	0.00	0.00	0.00	0.00	0.00
33	MAY	3	22.92	22.9	10.25	0.54	0.00	0.00	0.00	0.00	0.00
34	MAY	4	25.01	25.0	11.18	0.59	0.00	0.00	0.00	0.00	0.00
35	MAY	5	11.73	11.7	5.24	0.28	0.00	0.00	0.00	0.00	0.00
36	MAY	6	12.82	12.8	5.73	0.30	0.00	0.00	0.00	0.00	0.00
37	MAY	7	15.26	15.3	6.82	0.36	0.00	0.00	0.00	0.00	0.00
38	MAY	8	13.18	13.2	5.89	0.31	0.00	0.00	0.00	0.00	0.00
39	MAY	9	30.95	31.0	13.84	0.73	0.00	0.00	0.00	0.00	0.00
40	MAY	10	20.46	20.5	9.15	0.48	0.00	0.00	0.00	0.00	0.00
41	MAY	11	14.44	14.4	6.46	0.34	0.00	0.00	0.00	0.00	0.00
42	MAY	12	12.07	12.1	5.40	0.29	0.00	0.00	0.00	0.00	0.00
43	MAY	13	22.02	22.0	9.84	0.52	0.00	0.00	0.00	0.00	0.00
44	MAY	14	18.37	18.4	8.21	0.44	0.00	0.00	0.00	0.00	0.00
45	MAY	15	21.29	21.3	9.52	0.50	0.00	0.00	0.00	0.00	0.00
46	MAY	16	13.54	13.5	6.05	0.32	0.00	0.00	0.00	0.00	0.00
47	MAY	17	12.03	12.0	5.38	0.29	0.00	0.00	0.00	0.00	0.00
48	MAY	18	17.37	17.4	7.77	0.41	0.00	0.00	0.00	0.00	0.00
49	MAY	19	12.26	12.3	5.48	0.29	0.00	0.00	0.00	0.00	0.00
50	MAY	20	11.63	11.6	5.20	0.28	0.00	0.00	0.00	0.00	0.00
51	MAY	21	9.92	9.9	4.43	0.24	0.00	0.00	0.00	0.00	0.00
52	MAY	22	22.47	22.5	10.04	0.53	0.00	0.00	0.00	0.00	0.00
53	MAY	23	13.54	13.5	6.05	0.32	0.00	0.00	0.00	0.00	0.00
54	MAY	24	14.21	14.2	6.35	0.34	0.00	0.00	0.00	0.00	0.00
55	MAY	25	15.55	15.6	6.95	0.37	0.00	0.00	0.00	0.00	0.00
56	MAY	26	17.87	17.9	7.99	0.42	0.00	0.00	0.00	0.00	0.00
57	MAY	27	19.34	19.3	8.65	0.46	0.00	0.00	0.00	0.00	0.00
58	MAY	28	14.1	14.1	6.30	0.33	0.00	0.00	0.00	0.00	0.00
59	MAY	29	14.9	14.9	6.66	0.35	0.00	0.00	0.00	0.00	0.00
60	MAY	30	12.18	12.2	5.44	0.29	0.00	0.00	0.00	0.00	0.00
61	MAY	31	16.64	16.6	7.44	0.39	0.00	0.00	0.00	0.00	0.00

<i>i</i>	<i>MONTH</i>	<i>DAY</i>	<i>MAX</i> <i>WIND</i> <i>SPEED</i>	u_{10}^+ (in mph at 10m)	(m/s)	u^* (m/s)	P (g/m ²)	(g)	$k=0.075$ for $PM_{2.5}$ (g)	(lbs)	(tons)
62	JUN	1	10.81	10.8	4.83	0.26	0.00	0.00	0.00	0.00	0.00
63	JUN	2	21.16	21.2	9.46	0.50	0.00	0.00	0.00	0.00	0.00
64	JUN	3	23.78	23.8	10.63	0.56	0.00	0.00	0.00	0.00	0.00
65	JUN	4	15.65	15.7	7.00	0.37	0.00	0.00	0.00	0.00	0.00
66	JUN	5	13.08	13.1	5.85	0.31	0.00	0.00	0.00	0.00	0.00
67	JUN	6	12.11	12.1	5.41	0.29	0.00	0.00	0.00	0.00	0.00
68	JUN	7	10.06	10.1	4.50	0.24	0.00	0.00	0.00	0.00	0.00
69	JUN	8	10.4	10.4	4.65	0.25	0.00	0.00	0.00	0.00	0.00
70	JUN	9	15.26	15.3	6.82	0.36	0.00	0.00	0.00	0.00	0.00
71	JUN	10	12.81	12.8	5.73	0.30	0.00	0.00	0.00	0.00	0.00
72	JUN	11	15.1	15.1	6.75	0.36	0.00	0.00	0.00	0.00	0.00
73	JUN	12	18.67	18.7	8.35	0.44	0.00	0.00	0.00	0.00	0.00
74	JUN	13	15.35	15.4	6.86	0.36	0.00	0.00	0.00	0.00	0.00
75	JUN	14	14.71	14.7	6.58	0.35	0.00	0.00	0.00	0.00	0.00
76	JUN	15	11.63	11.6	5.20	0.28	0.00	0.00	0.00	0.00	0.00
77	JUN	16	13.32	13.3	5.95	0.32	0.00	0.00	0.00	0.00	0.00
78	JUN	17	30.78	30.8	13.76	0.73	0.00	0.00	0.00	0.00	0.00
79	JUN	18	12.58	12.6	5.62	0.30	0.00	0.00	0.00	0.00	0.00
80	JUN	19	13.55	13.6	6.06	0.32	0.00	0.00	0.00	0.00	0.00
81	JUN	20	10.9	10.9	4.87	0.26	0.00	0.00	0.00	0.00	0.00
82	JUN	21	13.86	13.9	6.20	0.33	0.00	0.00	0.00	0.00	0.00
83	JUN	22	12.04	12.0	5.38	0.29	0.00	0.00	0.00	0.00	0.00
84	JUN	23	10.5	10.5	4.69	0.25	0.00	0.00	0.00	0.00	0.00
85	JUN	24	21.62	21.6	9.67	0.51	0.00	0.00	0.00	0.00	0.00
86	JUN	25	11.19	11.2	5.00	0.27	0.00	0.00	0.00	0.00	0.00
87	JUN	26	9.61	9.6	4.30	0.23	0.00	0.00	0.00	0.00	0.00
88	JUN	27	13.54	13.5	6.05	0.32	0.00	0.00	0.00	0.00	0.00
89	JUN	28	12.52	12.5	5.60	0.30	0.00	0.00	0.00	0.00	0.00
90	JUN	29	19.08	19.1	8.53	0.45	0.00	0.00	0.00	0.00	0.00
91	JUN	30	20.65	20.7	9.23	0.49	0.00	0.00	0.00	0.00	0.00

<i>i</i>	MONTH	DAY	MAX WIND SPEED	u_{10}^+ (in mph at 10m)	(m/s)	u^* (m/s)	P (g/m ²)	(g)	$k=0.075$ for $PM_{2.5}$ (g)	(lbs)	(tons)
92	JUL	1	24.29	24.3	10.86	0.58	0.00	0.00	0.00	0.00	0.00
93	JUL	2	20.8	20.8	9.30	0.49	0.00	0.00	0.00	0.00	0.00
94	JUL	3	13.37	13.4	5.98	0.32	0.00	0.00	0.00	0.00	0.00
95	JUL	4	13.56	13.6	6.06	0.32	0.00	0.00	0.00	0.00	0.00
96	JUL	5	15.79	15.8	7.06	0.37	0.00	0.00	0.00	0.00	0.00
97	JUL	6	23.63	23.6	10.56	0.56	0.00	0.00	0.00	0.00	0.00
98	JUL	7	24.4	24.4	10.91	0.58	0.00	0.00	0.00	0.00	0.00
99	JUL	8	19.66	19.7	8.79	0.47	0.00	0.00	0.00	0.00	0.00
100	JUL	9	13.47	13.5	6.02	0.32	0.00	0.00	0.00	0.00	0.00
101	JUL	10	10.5	10.5	4.69	0.25	0.00	0.00	0.00	0.00	0.00
102	JUL	11	10.55	10.6	4.72	0.25	0.00	0.00	0.00	0.00	0.00
103	JUL	12	12.84	12.8	5.74	0.30	0.00	0.00	0.00	0.00	0.00
104	JUL	13	21.27	21.3	9.51	0.50	0.00	0.00	0.00	0.00	0.00
105	JUL	14	10.76	10.8	4.81	0.25	0.00	0.00	0.00	0.00	0.00
106	JUL	15	22.35	22.4	9.99	0.53	0.00	0.00	0.00	0.00	0.00
107	JUL	16	14.12	14.1	6.31	0.33	0.00	0.00	0.00	0.00	0.00
108	JUL	17	13.53	13.5	6.05	0.32	0.00	0.00	0.00	0.00	0.00
109	JUL	18	7.306	7.3	3.27	0.17	0.00	0.00	0.00	0.00	0.00
110	JUL	19	10.05	10.1	4.49	0.24	0.00	0.00	0.00	0.00	0.00
111	JUL	20	9.71	9.7	4.34	0.23	0.00	0.00	0.00	0.00	0.00
112	JUL	21	8.76	8.8	3.92	0.21	0.00	0.00	0.00	0.00	0.00
113	JUL	22	13.57	13.6	6.07	0.32	0.00	0.00	0.00	0.00	0.00
114	JUL	23	18.05	18.1	8.07	0.43	0.00	0.00	0.00	0.00	0.00
115	JUL	24	12.52	12.5	5.60	0.30	0.00	0.00	0.00	0.00	0.00
116	JUL	25	16.64	16.6	7.44	0.39	0.00	0.00	0.00	0.00	0.00
117	JUL	26	14.1	14.1	6.30	0.33	0.00	0.00	0.00	0.00	0.00
118	JUL	27	16.69	16.7	7.46	0.40	0.00	0.00	0.00	0.00	0.00
119	JUL	28	18.43	18.4	8.24	0.44	0.00	0.00	0.00	0.00	0.00
120	JUL	29	13.54	13.5	6.05	0.32	0.00	0.00	0.00	0.00	0.00
121	JUL	30	11.5	11.5	5.14	0.27	0.00	0.00	0.00	0.00	0.00
122	JUL	31	12.05	12.1	5.39	0.29	0.00	0.00	0.00	0.00	0.00

<i>i</i>	MONTH	DAY	MAX WIND SPEED	u_{10}^+ (in mph at 10m)	(m/s)	u^* (m/s)	P (g/m ²)	(g)	$k=0.075$ for $PM_{2.5}$ (g)	(lbs)	(tons)
123	AUG	1	16.06	16.1	7.18	0.38	0.00	0.00	0.00	0.00	0.00
124	AUG	2	10.52	10.5	4.70	0.25	0.00	0.00	0.00	0.00	0.00
125	AUG	3	7.162	7.2	3.20	0.17	0.00	0.00	0.00	0.00	0.00
126	AUG	4	16.67	16.7	7.45	0.39	0.00	0.00	0.00	0.00	0.00
127	AUG	5	7.222	7.2	3.23	0.17	0.00	0.00	0.00	0.00	0.00
128	AUG	6	9.23	9.2	4.13	0.22	0.00	0.00	0.00	0.00	0.00
129	AUG	7	9.94	9.9	4.44	0.24	0.00	0.00	0.00	0.00	0.00
130	AUG	8	9.98	10.0	4.46	0.24	0.00	0.00	0.00	0.00	0.00
131	AUG	9	10.69	10.7	4.78	0.25	0.00	0.00	0.00	0.00	0.00
132	AUG	10	12.44	12.4	5.56	0.29	0.00	0.00	0.00	0.00	0.00
133	AUG	11	15.76	15.8	7.05	0.37	0.00	0.00	0.00	0.00	0.00
134	AUG	12	18.77	18.8	8.39	0.44	0.00	0.00	0.00	0.00	0.00
135	AUG	13	21.97	22.0	9.82	0.52	0.00	0.00	0.00	0.00	0.00
136	AUG	14	19.65	19.7	8.78	0.47	0.00	0.00	0.00	0.00	0.00
137	AUG	15	17.26	17.3	7.72	0.41	0.00	0.00	0.00	0.00	0.00
138	AUG	16	21.01	21.0	9.39	0.50	0.00	0.00	0.00	0.00	0.00
139	AUG	17	10.39	10.4	4.64	0.25	0.00	0.00	0.00	0.00	0.00
140	AUG	18	11.09	11.1	4.96	0.26	0.00	0.00	0.00	0.00	0.00
141	AUG	19	9.82	9.8	4.39	0.23	0.00	0.00	0.00	0.00	0.00
142	AUG	20	10.22	10.2	4.57	0.24	0.00	0.00	0.00	0.00	0.00
143	AUG	21	12.38	12.4	5.53	0.29	0.00	0.00	0.00	0.00	0.00
144	AUG	22	11.49	11.5	5.14	0.27	0.00	0.00	0.00	0.00	0.00
145	AUG	23	14.62	14.6	6.54	0.35	0.00	0.00	0.00	0.00	0.00
146	AUG	24	11.02	11.0	4.93	0.26	0.00	0.00	0.00	0.00	0.00
147	AUG	25	14.86	14.9	6.64	0.35	0.00	0.00	0.00	0.00	0.00
148	AUG	26	17.49	17.5	7.82	0.41	0.00	0.00	0.00	0.00	0.00
149	AUG	27	16.23	16.2	7.26	0.38	0.00	0.00	0.00	0.00	0.00
150	AUG	28	15.4	15.4	6.88	0.36	0.00	0.00	0.00	0.00	0.00
151	AUG	29	10.87	10.9	4.86	0.26	0.00	0.00	0.00	0.00	0.00
152	AUG	30	16.52	16.5	7.39	0.39	0.00	0.00	0.00	0.00	0.00
153	AUG	31	18.04	18.0	8.06	0.43	0.00	0.00	0.00	0.00	0.00

<i>i</i>	MONTH	DAY	MAX WIND SPEED	u_{10}^+ (in mph at 10m)	(m/s)	u^* (m/s)	P (g/m ²)	(g)	$k=0.075$ for $PM_{2.5}$ (g)	(lbs)	(tons)
154	SEP	1	15.22	15.2	6.80	0.36	0.00	0.00	0.00	0.00	0.00
155	SEP	2	18.67	18.7	8.35	0.44	0.00	0.00	0.00	0.00	0.00
156	SEP	3	11.27	11.3	5.04	0.27	0.00	0.00	0.00	0.00	0.00
157	SEP	4	15.71	15.7	7.02	0.37	0.00	0.00	0.00	0.00	0.00
158	SEP	5	25.55	25.6	11.42	0.61	0.00	0.00	0.00	0.00	0.00
159	SEP	6	17.41	17.4	7.78	0.41	0.00	0.00	0.00	0.00	0.00
160	SEP	7	11.06	11.1	4.94	0.26	0.00	0.00	0.00	0.00	0.00
161	SEP	8	12.28	12.3	5.49	0.29	0.00	0.00	0.00	0.00	0.00
162	SEP	9	12.08	12.1	5.40	0.29	0.00	0.00	0.00	0.00	0.00
163	SEP	10	26.89	26.9	12.02	0.64	0.00	0.00	0.00	0.00	0.00
164	SEP	11	24.11	24.1	10.78	0.57	0.00	0.00	0.00	0.00	0.00
165	SEP	12	12.96	13.0	5.79	0.31	0.00	0.00	0.00	0.00	0.00
166	SEP	13	16.14	16.1	7.22	0.38	0.00	0.00	0.00	0.00	0.00
167	SEP	14	8.94	8.9	4.00	0.21	0.00	0.00	0.00	0.00	0.00
168	SEP	15	11.93	11.9	5.33	0.28	0.00	0.00	0.00	0.00	0.00
169	SEP	16	12.36	12.4	5.53	0.29	0.00	0.00	0.00	0.00	0.00
170	SEP	17	16.6	16.6	7.42	0.39	0.00	0.00	0.00	0.00	0.00
171	SEP	18	14.74	14.7	6.59	0.35	0.00	0.00	0.00	0.00	0.00
172	SEP	19	11.31	11.3	5.06	0.27	0.00	0.00	0.00	0.00	0.00
173	SEP	20	26.07	26.1	11.65	0.62	0.00	0.00	0.00	0.00	0.00
174	SEP	21	25.8	25.8	11.53	0.61	0.00	0.00	0.00	0.00	0.00
175	SEP	22	17.85	17.9	7.98	0.42	0.00	0.00	0.00	0.00	0.00
176	SEP	23	15.11	15.1	6.75	0.36	0.00	0.00	0.00	0.00	0.00
177	SEP	24	13.36	13.4	5.97	0.32	0.00	0.00	0.00	0.00	0.00
178	SEP	25	10.9	10.9	4.87	0.26	0.00	0.00	0.00	0.00	0.00
179	SEP	26	8.42	8.4	3.76	0.20	0.00	0.00	0.00	0.00	0.00
180	SEP	27	7.052	7.1	3.15	0.17	0.00	0.00	0.00	0.00	0.00
181	SEP	28	8.71	8.7	3.89	0.21	0.00	0.00	0.00	0.00	0.00
182	SEP	29	10.41	10.4	4.65	0.25	0.00	0.00	0.00	0.00	0.00
183	SEP	30	11.09	11.1	4.96	0.26	0.00	0.00	0.00	0.00	0.00

			MAX	u_{10}^{+}	$k=0.075$ for							
			WIND	(in mph at	u^{*}		P	$PM_{2.5}$				
i	MONTH	DAY	SPEED	10m)	(m/s)	(m/s)	(g/m ²)	(g)	(g)	(lbs)	(tons)	
184	OCT	1	10.49	10.5	4.69	0.25	0.00	0.00	0.00	0.00	0.00	
185	OCT	2	9.97	10.0	4.46	0.24	0.00	0.00	0.00	0.00	0.00	
186	OCT	3	24.34	24.3	10.88	0.58	0.00	0.00	0.00	0.00	0.00	
187	OCT	4	21.96	22.0	9.82	0.52	0.00	0.00	0.00	0.00	0.00	
188	OCT	5	20.8	20.8	9.30	0.49	0.00	0.00	0.00	0.00	0.00	
189	OCT	6	20.81	20.8	9.30	0.49	0.00	0.00	0.00	0.00	0.00	
190	OCT	7	21.03	21.0	9.40	0.50	0.00	0.00	0.00	0.00	0.00	
191	OCT	8	26.28	26.3	11.75	0.62	0.00	0.00	0.00	0.00	0.00	
192	OCT	9	22.4	22.4	10.01	0.53	0.00	0.00	0.00	0.00	0.00	
193	OCT	10	13.73	13.7	6.14	0.33	0.00	0.00	0.00	0.00	0.00	
194	OCT	11	12.38	12.4	5.53	0.29	0.00	0.00	0.00	0.00	0.00	
195	OCT	12	13.48	13.5	6.03	0.32	0.00	0.00	0.00	0.00	0.00	
196	OCT	13	13.25	13.3	5.92	0.31	0.00	0.00	0.00	0.00	0.00	
197	OCT	14	27.86	27.9	12.45	0.66	0.00	0.00	0.00	0.00	0.00	
198	OCT	15	19	19.0	8.49	0.45	0.00	0.00	0.00	0.00	0.00	
199	OCT	16	16.21	16.2	7.25	0.38	0.00	0.00	0.00	0.00	0.00	
200	OCT	17	20.64	20.6	9.23	0.49	0.00	0.00	0.00	0.00	0.00	
201	OCT	18	19.91	19.9	8.90	0.47	0.00	0.00	0.00	0.00	0.00	
202	OCT	19	15.64	15.6	6.99	0.37	0.00	0.00	0.00	0.00	0.00	
203	OCT	20	15.86	15.9	7.09	0.38	0.00	0.00	0.00	0.00	0.00	
204	OCT	21	17.67	17.7	7.90	0.42	0.00	0.00	0.00	0.00	0.00	
205	OCT	22	14.5	14.5	6.48	0.34	0.00	0.00	0.00	0.00	0.00	
206	OCT	23	12.9	12.9	5.77	0.31	0.00	0.00	0.00	0.00	0.00	
207	OCT	24	12.76	12.8	5.70	0.30	0.00	0.00	0.00	0.00	0.00	
208	OCT	25	25.18	25.2	11.26	0.60	0.00	0.00	0.00	0.00	0.00	
209	OCT	26	22.26	22.3	9.95	0.53	0.00	0.00	0.00	0.00	0.00	
210	OCT	27	9.24	9.2	4.13	0.22	0.00	0.00	0.00	0.00	0.00	
211	OCT	28	26.9	26.9	12.03	0.64	0.00	0.00	0.00	0.00	0.00	
212	OCT	29	15.73	15.7	7.03	0.37	0.00	0.00	0.00	0.00	0.00	
213	OCT	30	11.33	11.3	5.06	0.27	0.00	0.00	0.00	0.00	0.00	
214	OCT	31	7.098	7.1	3.17	0.17	0.00	0.00	0.00	0.00	0.00	
										TOTAL	0.00	TPY