

## SCS ENGINEERS

Tracer Environmental Services

September 12, 2017

SCS Project No. 24217244.00

Michael Thorson  
Inventure Capital LLC  
2820 Walton Commons West, Ste 125  
Madison, WI 53718

*Sent via email only*    **To:**    *Michael Thorson* ([michael.thorson@inventure-capital.com](mailto:michael.thorson@inventure-capital.com))  
**cc:**    *Paul Schafer* ([pschafer@scsengineers.com](mailto:pschafer@scsengineers.com))  
*Adam Fredendall* ([afredendall@jla-ap.com](mailto:afredendall@jla-ap.com))

### **RE:    Air Quality Modeling Study for the Fair Oaks Mixed-Use Redevelopment Project**

Dear Mr. Thorson:

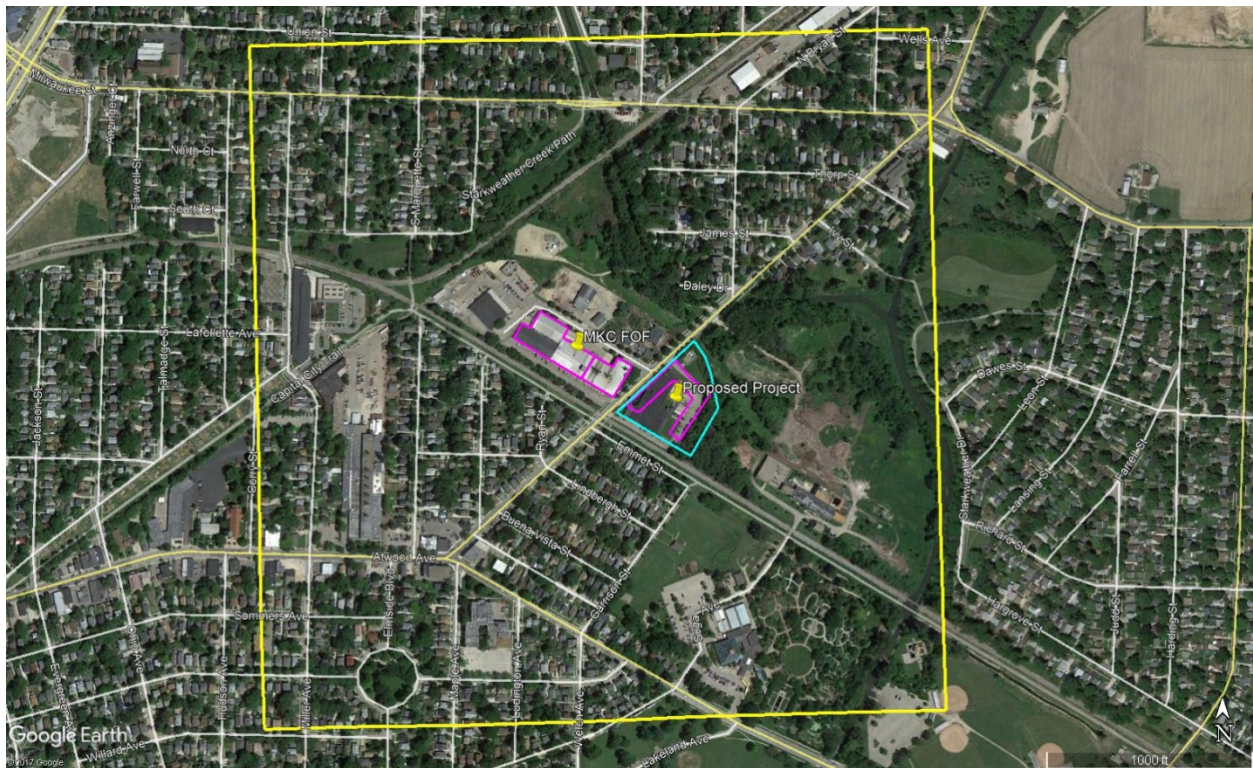
SCS Engineers (SCS) conducted an air quality dispersion modeling study for the proposed Fair Oaks Mixed-Use Redevelopment Project in Madison, Wisconsin. The following summarizes the methodology and results of the study.

#### **Methodology**

The purpose of this project was to estimate the relative air quality impacts at the proposed redevelopment project location due to emissions from one stack at the Madison-Kipp Corporation (MKC) Fair Oaks Facility (FOF). The FOF is located at 166 S. Fair Oaks Avenue across the street from the proposed redevelopment project (See Figure 1, Figure 2, and Attachment #2). Recently, MKC submitted a permit revision application to the Wisconsin Department of Natural Resources (DNR) to install and operate a temporary melting furnace at the FOF (see Attachment #3). This temporary furnace will operate as the existing main furnace at the FOF undergoes maintenance. Data from this permit application was used to represent the stack height, diameter, temperature, and flow rate under normal operation conditions for the one modeled stack. Since the permit application did not include a plot plan for the FOF, it was assumed that the location of the modeled stack was the same as the closest of the three in-line stacks at the MKC FOF to the proposed redevelopment project location.



**FIGURE 1 Project Location**



Legend:

- Yellow square: Dispersion modeling domain
- Magenta polygons: MKC FOF and proposed project buildings
- Cyan polygon: Proposed Fair Oaks Mixed-Use Redevelopment Project boundary

**FIGURE 2 Project Site Aerial View**



Legend:

- Magenta polygons: MKC FOF and proposed project buildings
- Cyan polygon: Proposed Fair Oaks Mixed-Use Redevelopment Project boundary

The MKC stack was modeled using the American Meteorological Society / Environmental Protection Agency Regulatory Model (AERMOD Version 16126r). AERMOD was initially developed in 1991 and later adopted in 2005 by the United States Environmental Protection Agency (EPA). This model is EPA's preferred regulatory model for steady-state releases in both simple and complex terrain. Input data for AERMOD included:

- stack location;
- stack physical dimensions;
- stack emission rate;
- meteorological data;
- terrain data;
- receptor locations; and
- model options.

AERMOD was used to predict the maximum hourly and five year average dilution factors at ground level receptors near the stack and proposed project site. In addition, AERMOD was used to predict the maximum hourly and five year dilution factors at 35 locations along the property

boundary using elevations of 0, 10, 20, 30, 40, 50, and 60 feet (see Figure 3 for the vertical profile locations V01 to V35). Table 1 summarizes the stack and model options used in the analysis while Table 2 summarizes the buildings/structures included to address the effects of downwash on the modeled stack (see Figure 4 for a 3-D view of the modeling scenario). Dimensions of buildings were estimated using available technical drawings and street/aerial imagery. Meteorological data from 2011-2015 was obtained from the Wisconsin DNR Madison Station (<http://dnr.wi.gov/topic/AirPermits/documents/model/Data2017.pdf>) (see Attachment #4).

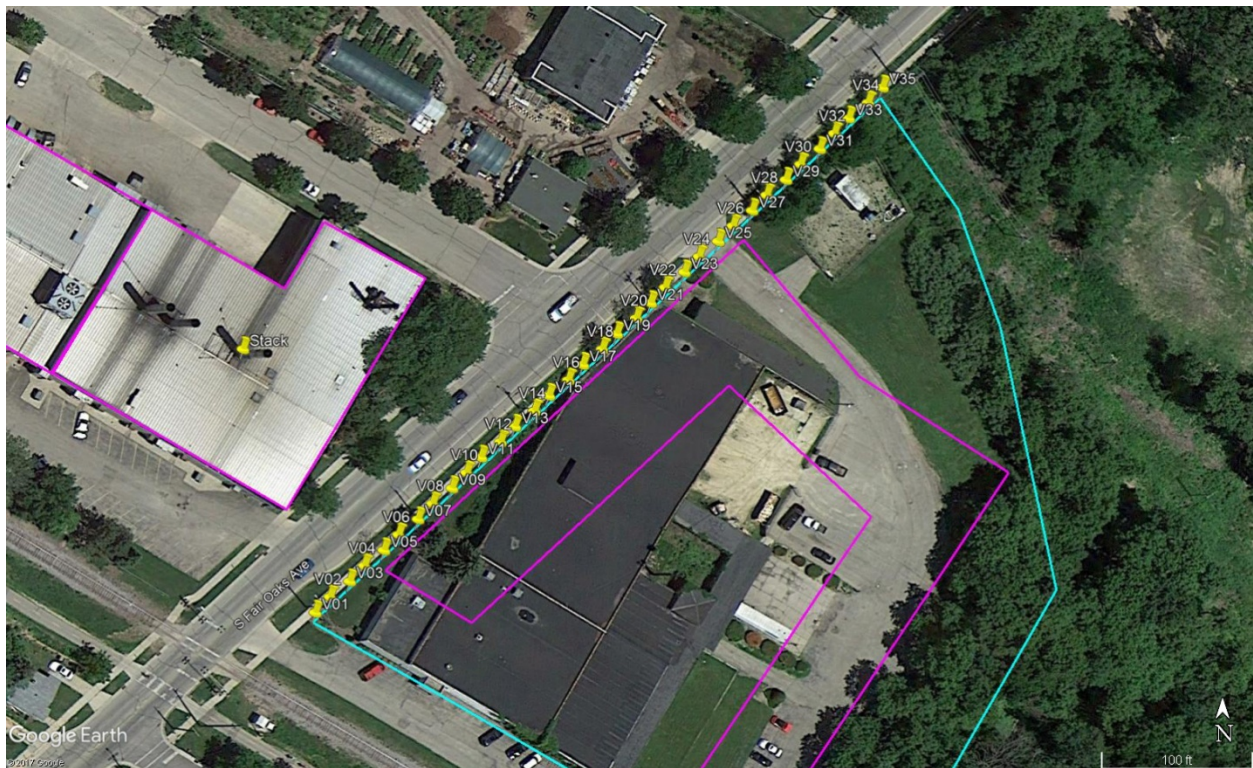
**TABLE 1 Stack and Model Options**

Item	Description
AERMOD Version	16126r
AERMOD Coordinate System	UTM Zone 16, WGS84
AERMOD Model Control Options	Regulatory Default
AERMOD Output Type	Concentration
Averaging Time Options	1-Hour and Period
Dispersion Mode	Rural
Stack Type	Vertical point source
Stack Coordinates (m)	309714, 4774155
Stack Base Elevation (m)	260.47
Stack Height (ft)	81
Stack Emission Rate (g/s)	1.0
Stack Temperature (F)	84.51
Stack Diameter (ft)	5.68
Stack Flow Rate (cfm)	52,120
Building Downwash Included?	Yes
Background Concentrations Included?	No
Variable Emissions?	No
Receptors – Grid	Southwest corner UTM coordinates (m): 309200, 4773650 1,000 meter x 1,000 meter modeling domain (see Figure 1) 10 meter receptor spacing Receptor flagpole height = 0 feet
Receptors – Discrete	35 locations along S. Fair Oaks Avenue property boundary Receptor flagpole heights at 0, 10, 20, 30, 40, 50, and 60 feet
Meteorological Data	Wisconsin DNR Madison Station #14837 (2011-2015)
Terrain Data	National Elevation Dataset (NED)

**TABLE 2 Building/Structures**

No.	Name	Height (ft)
1	Fair Oaks Mixed-Use Main Building	58
2	Fair Oaks Mixed-Use Parking Roof	12.8
3	MKC FOF (southeast section)	30
4	MKC FOF (northwest section)	20

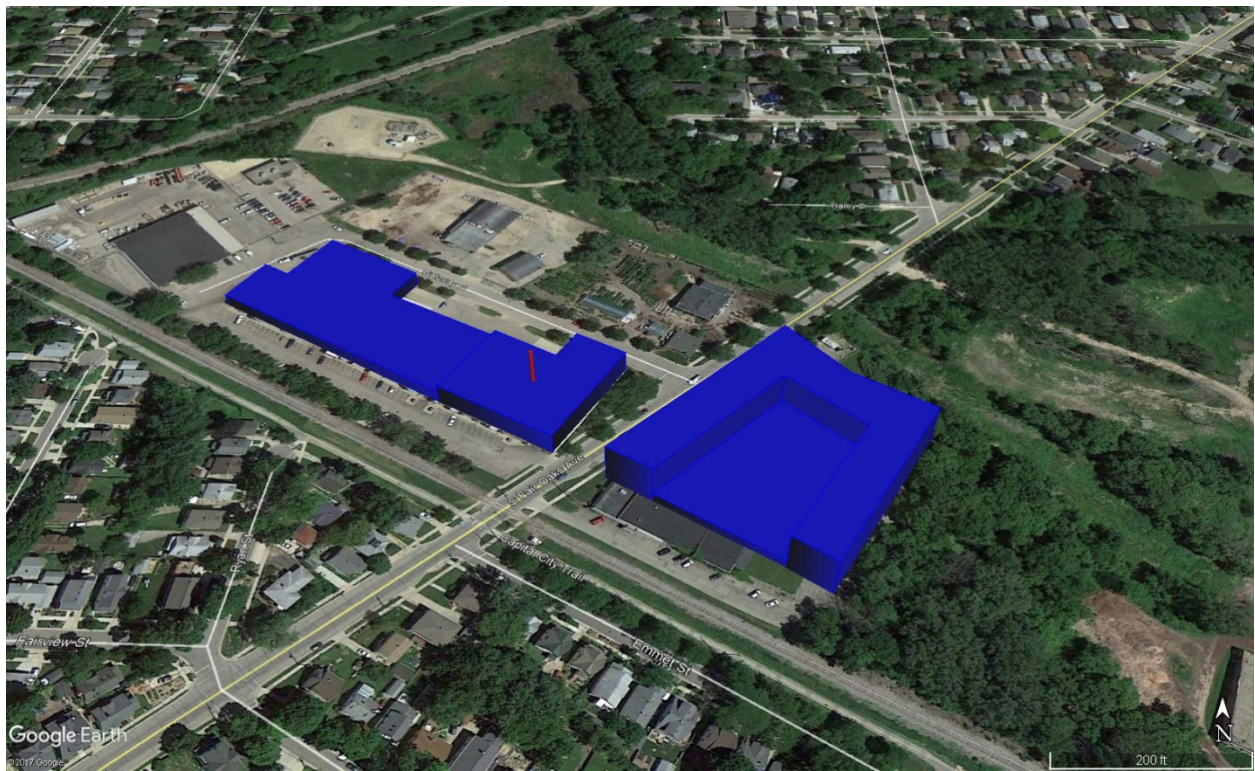
**FIGURE 3 Vertical Profile Locations**



Legend:

- Magenta polygons: MKC FOF and proposed project buildings
- Cyan polygon: Proposed Fair Oaks Mixed-Use Redevelopment Project boundary

**FIGURE 4 AERMOD 3-D Model Configuration**



## Results

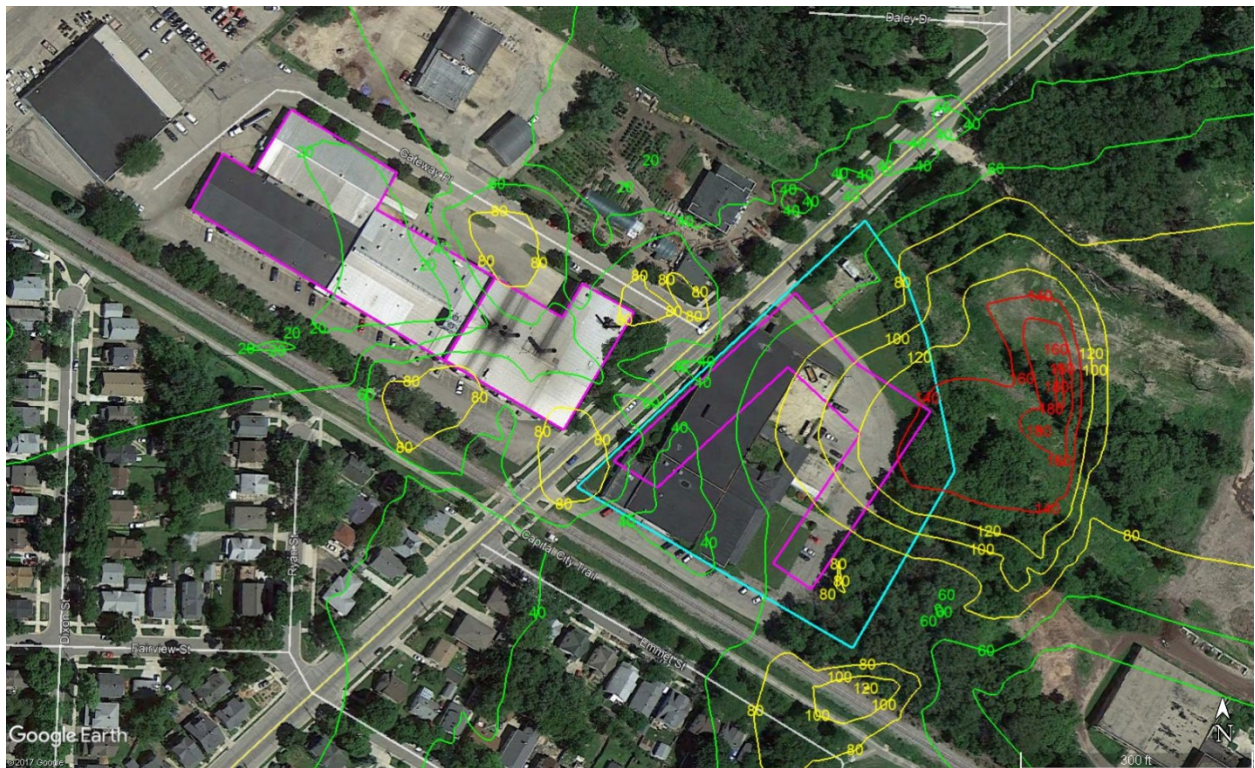
The MKC stack was modeled as a continuous (steady-state) release using a one gram per second (g/s) emission rate. Each maximum hourly and annual average concentration predicted in this study has units of  $10E-6 \text{ s/m}^3$  and represents the stack's dilution factor at that receptor for a specific time period. The dilution factor is also known as  $\chi/Q$  (i.e. concentration  $\chi$  divided by emission rate  $Q$ ). Results from this study can be translated into pollutant-specific receptor concentrations (in  $\mu\text{g/m}^3$ ) by multiplying the each dilution factor by a pollutant-specific emission rate (in g/s).

Contours of the ground level dilution factors were generated and overlaid onto aerial maps of the project site. Figure 5 displays the peak 1-hour dilution factor contours while Figure 6 displays the 5-year average dilution factor contours. See Table 3 and Figure 7 for a summary of the maximum dilution factors by averaging time and receptor flagpole height. Also, see Attachment #1 for the vertical profile dilution factors evaluated at the 35 locations along the project's S. Fair Oaks Avenue boundary.

**TABLE 3 Maximum 1-Hour and 5-Year Dilution Factors**

Averaging Time	Height (ft)	Dilution Factor ( $10E-6 \text{ s/m}^3$ )	Receptor Coordinate UTM X (m)	Receptor Coordinate UTM Y (m)	See Figure 7 Map Icon
1-Hour	0	185.7	309920	4774130	J
1-Hour	10	189.1	309920	4774130	J
1-Hour	20	161.0	309920	4774130	J
1-Hour	30	139.6	309920	4774140	K
1-Hour	40	141.0	309910	4774120	I
1-Hour	50	140.8	309900	4774120	H
1-Hour	60	143.7	309870	4774130	G
5-Year	0	6.2	309710	4774160	A
5-Year	10	4.9	309870	4774120	F
5-Year	20	4.2	309920	4774130	J
5-Year	30	4.1	309710	4774200	B
5-Year	40	4.8	309720	4774250	E
5-Year	50	6.2	309720	4774230	D
5-Year	60	8.6	309720	4774210	C

**FIGURE 5 Peak 1-Hour Dilution Factor Contours at Ground Level**

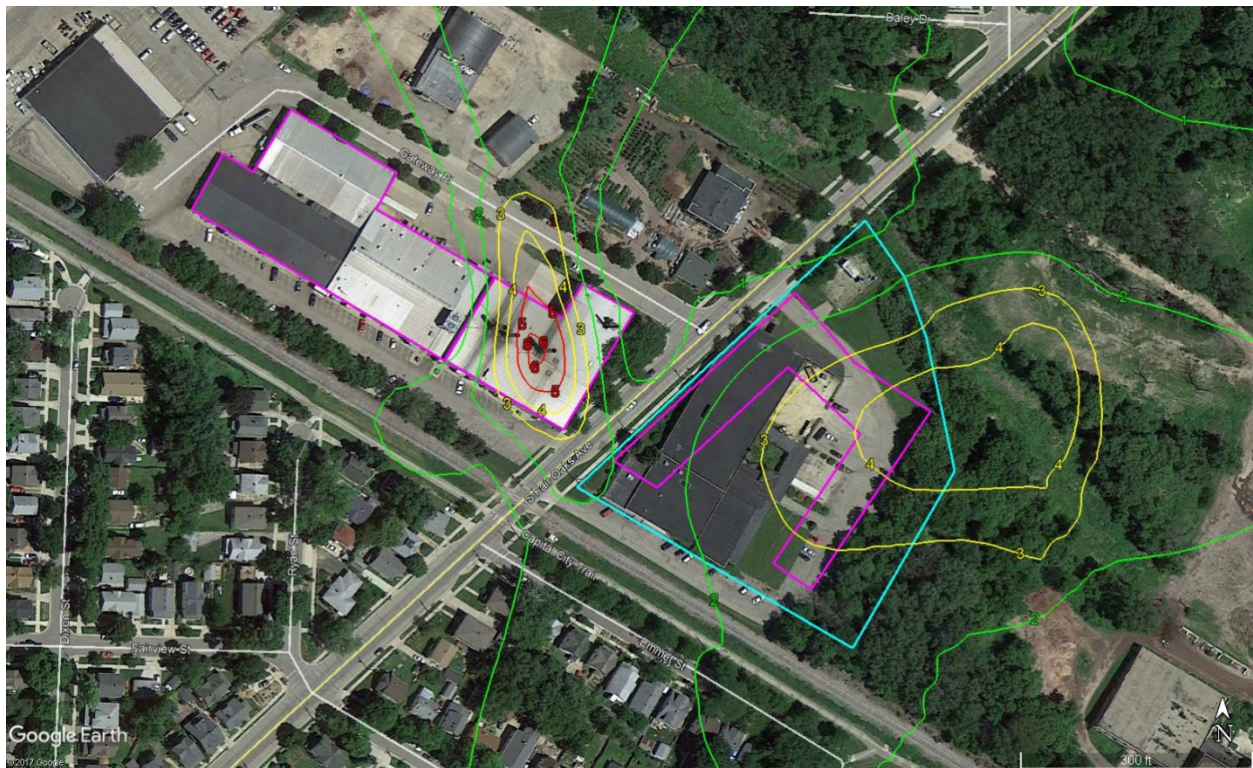


Legend:

- Magenta polygons: MKC FOF and proposed project buildings
- Cyan polygon: Proposed Fair Oaks Mixed-Use Redevelopment Project boundary
- Green, yellow, and red polygons: Peak 1-hour dilution factor contours ( $10E-6 \text{ s/m}^3$ )



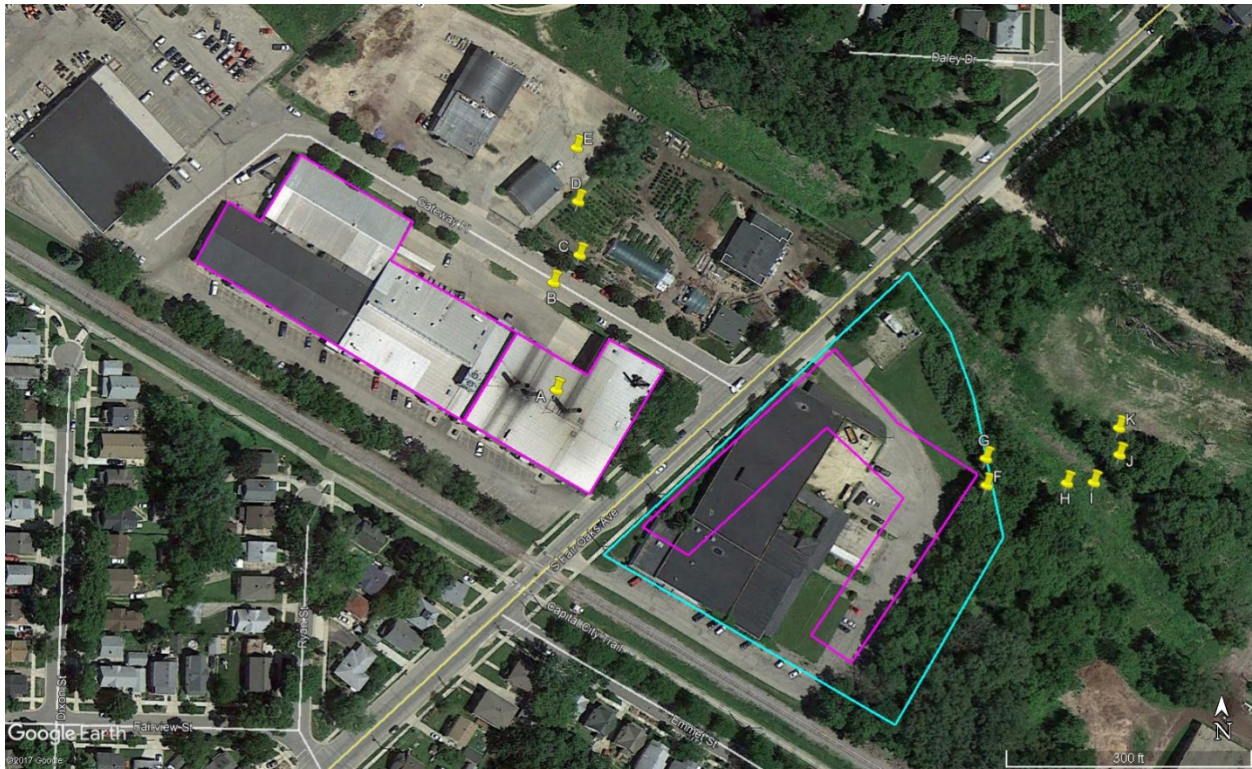
**FIGURE 6 5-Year Average Dilution Factor Contours at Ground Level**



Legend:

- Magenta polygons: MKC FOF and proposed project buildings
- Cyan polygon: Proposed Fair Oaks Mixed-Use Redevelopment Project boundary
- Green, yellow, and red polygons: 5-Year average dilution factor contours ( $10E-6 \text{ s/m}^3$ )

**FIGURE 7 Peak 1-Hour and 5-Year Average Maximum Impact Locations**



Legend:

- Magenta polygons: MKC FOF and proposed project buildings
- Cyan polygon: Proposed Fair Oaks Mixed-Use Redevelopment Project boundary
- See corresponding data in Table 3

Please feel free to contact me at 760-744-9611 x3272 if there are any questions.

Sincerely,

Greg Hauser  
Project Director  
**SCS ENGINEERS**

- Attachment #1 Vertical Profile Results for S. Fair Oaks Avenue Project Boundary
- Attachment #2 Fair Oaks Mixed-Use Redevelopment Project Details
- Attachment #3 MKC FOF Permit Application
- Attachment #4 Wisconsin DNR Meteorological Data

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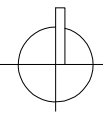
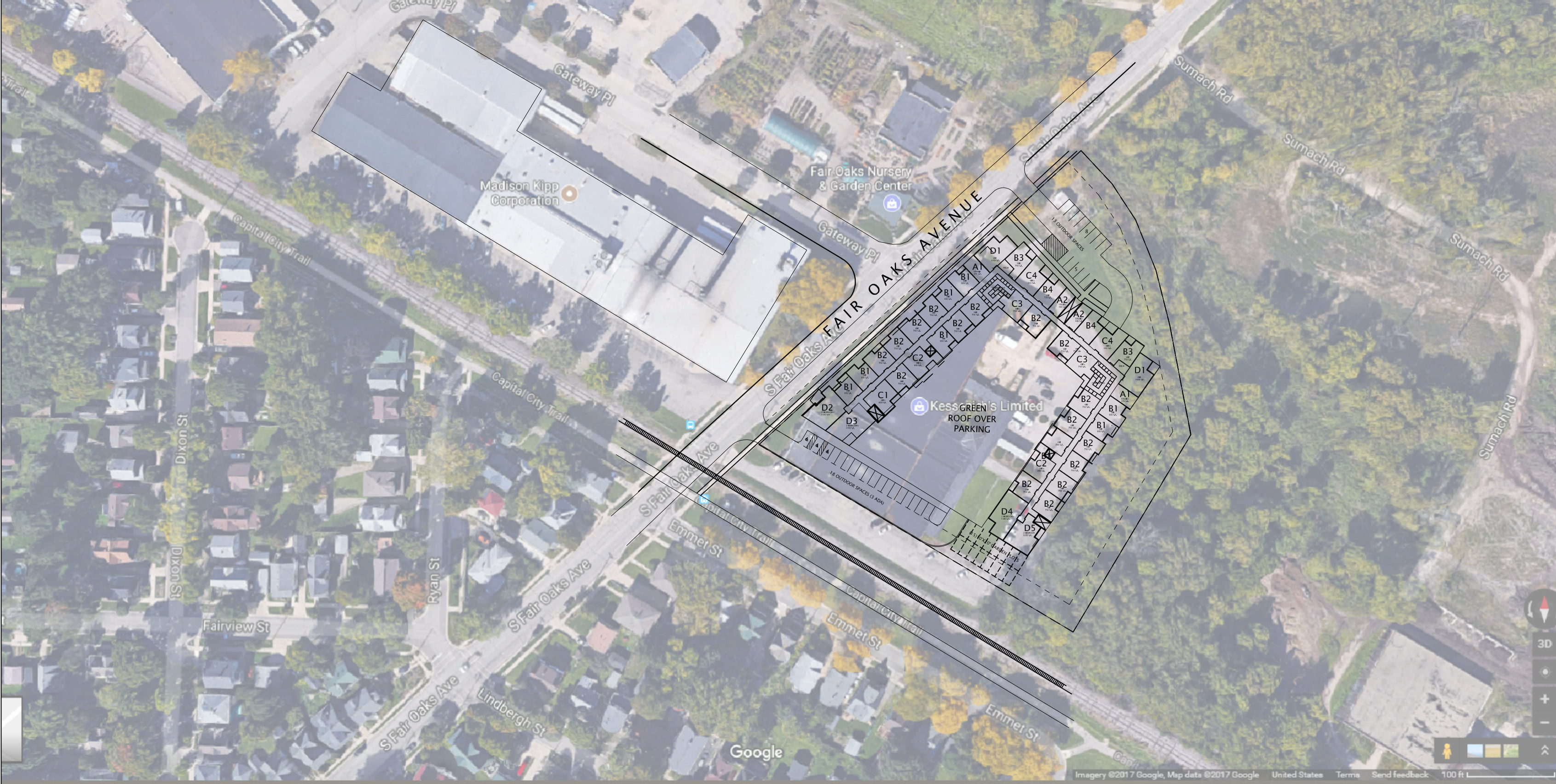
**ATTACHMENT #1 Vertical Profile Results for S. Fair Oaks Avenue Project Boundary**

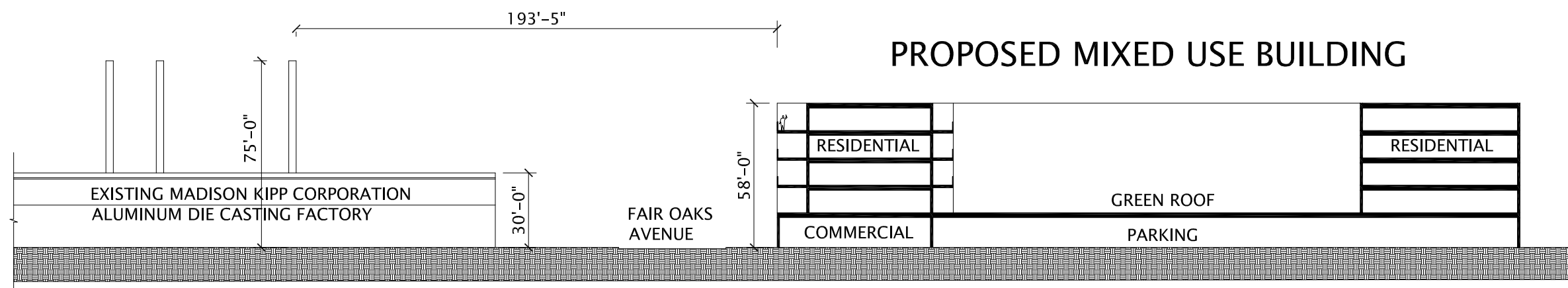
ATTACHMENT 1 - Vertical Profile Results Along S. Fair Oaks Avenue Property Boundary

Receptor No.	Receptor UTM X (m)	Receptor UTM Y (m)	Peak 1-Hour X/Q 0 ft Elev. (10E-6 s/m3)	Peak 1-Hour X/Q 10 ft Elev. (10E-6 s/m3)	Peak 1-Hour X/Q 20 ft Elev. (10E-6 s/m3)	Peak 1-Hour X/Q 30 ft Elev. (10E-6 s/m3)	Peak 1-Hour X/Q 40 ft Elev. (10E-6 s/m3)	Peak 1-Hour X/Q 50 ft Elev. (10E-6 s/m3)	Peak 1-Hour X/Q 60 ft Elev. (10E-6 s/m3)	Average 5-Year X/Q 0 ft Elev. (10E-6 s/m3)	Average 5-Year X/Q 10 ft Elev. (10E-6 s/m3)	Average 5-Year X/Q 20 ft Elev. (10E-6 s/m3)	Average 5-Year X/Q 30 ft Elev. (10E-6 s/m3)	Average 5-Year X/Q 40 ft Elev. (10E-6 s/m3)	Average 5-Year X/Q 50 ft Elev. (10E-6 s/m3)	Average 5-Year X/Q 60 ft Elev. (10E-6 s/m3)	Maximum 1-Hour X/Q All Elev. (10E-6 s/m3)	Maximum 5-Year X/Q All Elev. (10E-6 s/m3)
1	309727	4774102	93	58	47	58	56	74	102	2.4	1.6	1.4	1.9	2.2	3.2	4.4	102	4.4
2	309730	4774105	91	61	46	63	56	75	103	2.4	1.7	1.4	2.1	2.2	3.2	4.4	103	4.4
3	309734	4774108	91	63	47	67	57	74	101	2.3	1.7	1.3	2.1	2.2	3.1	4.5	101	4.5
4	309737	4774111	87	61	45	68	56	73	96	2.2	1.6	1.2	2.1	2.2	3.1	4.5	96	4.5
5	309741	4774114	74	54	39	62	54	73	103	2.0	1.6	1.2	2.0	2.1	3.1	4.6	103	4.6
6	309744	4774117	73	57	41	58	54	73	105	1.9	1.5	1.1	1.9	2.1	3.1	4.6	105	4.6
7	309748	4774120	72	57	47	56	54	72	98	1.8	1.5	1.2	1.7	2.0	3.0	4.7	98	4.7
8	309751	4774123	65	53	49	54	51	69	97	1.6	1.4	1.1	1.6	1.9	3.0	4.6	97	4.6
9	309755	4774126	50	41	45	44	45	64	96	1.5	1.3	1.1	1.5	1.9	2.8	4.5	96	4.5
10	309758	4774129	53	44	40	42	44	60	91	1.4	1.2	1.0	1.4	1.8	2.7	4.2	91	4.2
11	309761	4774132	60	50	57	41	46	62	92	1.3	1.2	1.2	1.3	1.6	2.5	3.9	92	3.9
12	309765	4774135	59	50	51	37	46	63	92	1.4	1.3	1.2	1.2	1.5	2.2	3.5	92	3.5
13	309768	4774138	51	42	41	37	46	63	92	1.4	1.3	1.2	1.1	1.4	2.0	3.1	92	3.1
14	309772	4774141	52	39	31	37	46	62	89	1.4	1.4	1.1	1.1	1.3	1.8	2.7	89	2.7
15	309775	4774144	38	34	32	37	45	58	82	1.4	1.4	1.2	1.1	1.3	1.6	2.4	82	2.4
16	309779	4774147	38	35	30	35	41	52	71	1.5	1.4	1.2	1.1	1.2	1.5	2.2	71	2.2
17	309782	4774150	40	38	31	31	36	44	59	1.5	1.4	1.2	1.1	1.1	1.3	2.0	59	2.0
18	309786	4774153	43	41	31	26	30	36	57	1.5	1.5	1.2	1.1	1.1	1.3	1.9	57	1.9
19	309789	4774156	44	42	32	29	32	38	56	1.5	1.5	1.2	1.1	1.1	1.2	1.8	56	1.8
20	309793	4774159	46	44	34	33	36	43	56	1.5	1.5	1.2	1.1	1.1	1.2	1.8	56	1.8
21	309796	4774162	47	44	34	36	40	48	61	1.5	1.5	1.2	1.1	1.1	1.2	1.8	61	1.8
22	309799	4774165	46	44	36	39	42	52	65	1.5	1.4	1.2	1.1	1.1	1.2	1.8	65	1.8
23	309803	4774168	46	45	38	41	45	55	68	1.5	1.4	1.2	1.1	1.1	1.2	1.9	68	1.9
24	309806	4774171	45	44	40	43	47	58	71	1.4	1.4	1.2	1.1	1.1	1.2	1.9	71	1.9
25	309810	4774174	43	43	42	44	48	60	72	1.4	1.4	1.2	1.1	1.1	1.2	1.9	72	1.9
26	309813	4774177	42	43	43	45	50	61	74	1.3	1.4	1.2	1.1	1.1	1.3	2.0	74	2.0
27	309817	4774180	46	48	46	46	51	61	77	1.3	1.4	1.2	1.1	1.2	1.4	2.0	77	2.0
28	309820	4774183	50	50	48	48	51	62	79	1.2	1.3	1.2	1.1	1.2	1.4	1.9	79	1.9
29	309824	4774186	48	49	47	49	52	63	79	1.1	1.2	1.1	1.1	1.2	1.4	1.9	79	1.9
30	309827	4774189	49	50	47	50	53	64	79	1.0	1.1	1.1	1.1	1.3	1.5	1.9	79	1.9
31	309831	4774192	48	49	48	50	53	65	79	0.9	1.0	1.0	1.1	1.3	1.5	1.8	79	1.8
32	309834	4774195	47	47	48	50	53	64	78	0.9	1.0	1.0	1.1	1.2	1.5	1.8	78	1.8
33	309837	4774198	45	47	48	50	52	63	77	0.8	0.9	1.0	1.1	1.2	1.5	1.8	77	1.8
34	309841	4774201	45	47	47	49	52	62	79	0.9	0.9	1.0	1.1	1.2	1.5	1.8	79	1.8
35	309844	4774204	46	48	46	48	52	61	79	0.9	0.9	1.0	1.1	1.3	1.5	1.8	79	1.8
Max:			93	63	57	68	57	75	105	2.4	1.7	1.4	2.1	2.2	3.2	4.7	105	4.7

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**ATTACHMENT #2 Fair Oaks Mixed-Use Redevelopment Project Details**





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**ATTACHMENT #3 MKC FOF Permit Application**



# 113 125 320 - F12



July 19, 2017

Ms. Barb Pavliscak  
Team Leader – Operation Permits  
Wisconsin Department of Natural Resources  
P.O. Box 7921 (AM/7)  
Madison, WI 53703

RECEIVED  
JUL 24 2017  
AIR MANAGEMENT

Subject: Operation Air Permit Revision Application  
Madison-Kipp Corporation, Madison, Wisconsin  
FID #113125320

Dear Ms. Pavliscak:

Enclosed is an operation air permit revision application for the Madison-Kipp Corporation facility located at 201 Waubesa Street in Madison, Wisconsin. This application includes a revision to add a new melt furnace to the Fair Oaks Avenue location.

**Background**

Madison-Kipp Corporation (Madison-Kipp) operates an aluminum diecast facility, at which aluminum is melted, alloyed, demagged, drossed, degassed, and cast in aluminum diecasters. Existing significant emission sources at this facility include furnaces, diecast machines, degassers, and grit blasters.

Madison-Kipp is proposing to add a melt furnace to their Fair Oaks location. This furnace will serve to maintain production while the main furnace located at the Fair Oaks location is undergoing maintenance.

**NR 406 Construction Permit Applicability**

The proposed project meets all the criteria for a general construction permit exemption under NR 406.04(2), WAC, and are therefore exempt from construction permit requirements. The maximum theoretical emissions are shown in Table 1, and the exemption criteria are listed below.

**Table 1. Maximum Theoretical Hourly Emission Summary**

Pollutant	Capacity	Emission Factor <sup>1,2,3</sup>	Emissions	NR 406 Exemption Threshold
	ton/hr	lb/ton	lb/hr	lb/hr
PM	0.5	0.11	0.06	5.7
PM <sub>10</sub>	0.5	0.09	0.05	3.4
PM <sub>2.5</sub>	0.5	0.09	0.05	2.2
Carbon Monoxide (CO)	0.5	0.54	0.27	9
Nitrogen Oxides (NO <sub>x</sub> )	0.5	0.19	0.09	5.7
Sulfur Dioxide (SO <sub>2</sub> )	0.5	0	0	9
VOC	0.5	0.16	0.08	5.7
Lead	0.5	0	0	0.13

**Notes:**

1. PM Emission factors based on 2014 stack test results.
2. PM<sub>2.5</sub> conservatively assumed to equal PM<sub>10</sub> for purposes of permit evaluation.
3. CO, NO<sub>x</sub>, SO<sub>2</sub>, and VOC emission factors based on 1995 stack test results.

- NR 406.04(2)(a): The construction, reconstruction, replacement, relocation or modification of the source is not prohibited by any permit, plan approval or special order applicable to the source.

**The addition of the new furnace does not violate any permits, plan approvals, or special orders that Madison-Kipp is subject to.**

- NR 406.04(2)(b): The maximum theoretical emissions from the source for sulfur dioxide or carbon monoxide do not exceed 9.0 pounds per hour for each air contaminant.

**The theoretical emissions for sulfur dioxide and carbon monoxide, as seen in Table 1, are 0 lb/hr and 0.27 lb/hr respectively. Both of these values are below the exemption threshold of 9.0 lb/hr**

- NR 406.04(2)(c): The maximum theoretical emissions from the source for particulate matter, nitrogen oxides or volatile organic compounds do not exceed 5.7 pounds per hour for each air contaminant.

**The particulate matter, volatile organic compound, and nitrogen oxide emissions are 0.06 lb/hr, 0.08 lb/hr, and 0.09 lb/hr respectively. These emissions are all below the threshold of 5.7 lb/hr.**

- NR 406.04(2)(cm): The maximum theoretical emissions from the source for PM<sub>10</sub> do not exceed 3.4 pounds per hour.

**The maximum theoretical emissions of PM<sub>10</sub> are 0.05 lb/hr. These emissions are below the threshold of 3.4 lb/hr.**

- NR 406.04(2)(cs): The maximum theoretical emissions from the source for PM<sub>2.5</sub> do not exceed 2.2 pounds per hour.

**The maximum theoretical emissions of PM<sub>2.5</sub> are 0.05 lb/hr, which is below the emission threshold.**

- NR 406.04(2)(d): The maximum theoretical emissions from the source for lead do not exceed 0.13 pounds per hour.

**The furnace will have no significant lead emissions, and thus falls below the threshold of 0.13 lb/hr.**

- NR 406.04(2)(f)1: The maximum theoretical emissions from the source for any hazardous air contaminant listed in Table A, B or C of s. NR 445.07 are not greater than the emission rate for the air contaminant listed in column (c), (d), (e) or (f) of Table A, B or C of s. NR 445.07 for the respective stack height or the owner or operator of the source meets the compliance demonstration and notification requirements of s. NR 445.08 (7) (b).

**The furnace will have no significant emissions of hazardous air pollutants regulated under NR 445.**

- NR 406.04(2)(f)2: The source is not subject to a best available control technology or lowest achievable emission rate requirement in s. NR 445.07 (1) (c), (2), (3) or (4).

**The furnace is not subject to best available control technology or lowest achievable emission rate requirements.**

- NR 406.04(2)(f)3: The source does not combust fuel oil in a compression ignition internal combustion engine subject to a best available control technology requirement in s. NR 445.09 (3) (a).

**The furnace will not combust fuel oil in a compression ignition internal combustion engine.**

- NR 406.04(2)(f)4: The source does not combust municipal solid waste, as defined in s. NR 500.03 (86), or infectious wastes.

**The furnace will not combust municipal solid waste or infectious wastes.**

- NR 406.04(2)(h): The source is not subject to any standard or regulation under section 111 or 112 or the Act (42 USC 7411 or 7412), excluding section 112(d)(5) or (r) (42 USC 7412(d)(5) or (r)).

**The furnace is not subject to regulations under section 111 or 112.**

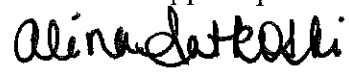
#### **NR 407 Permit Applicability**

Pursuant to NR 407.05(4)(c)9, emissions from the new melt furnace would be considered with those of emission units performing similar functions. Thus, the total emissions would not be below the inclusion threshold and the furnace would need to be included in the operation permit. The relevant WDNR operation permit application forms are included in Attachment 1.

If you have any questions or concerns regarding this application, please contact Dave Bittrich of TRC Environmental Corporation at (608) 826-3632 or Alina Sotkoski of the Madison-Kipp Corporation at (608) 242-5200.

Sincerely,

Madison – Kipp Corporation

A handwritten signature in black ink that reads "Alina Sotkoski". The signature is written in a cursive style with a large initial 'A'.

Alina Sotkoski  
Environmental and Safety Coordinator

# Attachment 1

## WDNR Application Forms

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**Notice:** Use of this form is required by the Department for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis. Stats. Completion of this form is mandatory. The Department will not consider or act upon your application unless you complete and submit this application form. You are required to submit two copies in accordance with s. NR 407.05(2), Wis. Adm. Code. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law [ss. 19.31-19.39, Wis. Stats.].

**Facility Information**

1. Facility Name Madison-Kipp Corporation	2. SIC and NAICS 3364	3. Facility ID Number (FID) 113125320
4. Street Address (where pollution sources are/will be located) 201 Waubesa Street	5. <input checked="" type="radio"/> City <input type="radio"/> Town <input type="radio"/> Village of Madison	6. County Dane
7. Primary Operating Activity (e.g., lead-acid battery manufacturer or sulfite paper mill) Aluminum Die Casting		
8. Is the facility located in an area designated as "nonattainment"? (refer to instructions) <input type="radio"/> Yes <input checked="" type="radio"/> No		9. If yes, indicate the pollutant(s) for the nonattainment designation

**Applicant Information**

10. Responsible Official Name (person legally responsible for the operation of the permitted air pollution sources [see NR 400.02(80e), Wis. Adm. Code]) Anthony Koblinski				
11. Title President and CEO		12. Email tkoblinski@madison-kipp.com		
13. Mailing Address P.O. Box 3037		City Madison	State WI	ZIP Code 53704
14. Parent Corporation or Owner Name (if not wholly owned by applicant) Madison-Kipp Corporation				
15. Mailing Address P.O. Box 3037		City Madison	State WI	ZIP Code 53704
16. Permit Contact Person – to be contacted for additional information concerning air pollution sources Alina Satkoski		17. Email asatkoski@madison-kipp.com		
18. Title Environmental and Safety Coordinator		19. Phone Number (608) 242-5200		

**Permit Information**

**20. Construction Permit Actions:**

**Instructions:** If applying for a construction permit action (including modification, reconstruction, relocation, replacement, and revision), you MUST also apply for an operation permit option. A check for the construction permit application fees MUST be submitted with the application forms before the department will begin their review. Application fees are listed below in section A. Additional fees may be required and a final invoice will be sent when a final permit decision is made. See ch. NR 410 for current fee amounts and additional review fees.

A. Permit Actions:  New Construction/Modification (\$7,500) – Anticipated start dates: \_\_\_\_\_ Construction \_\_\_\_\_ Operation  
 Construction Permit Revision (\$1,500 fee)

List Permit(s) to be revised: \_\_\_\_\_

**Requesting Expedited Review** – If expedited review of construction permit is requested and fulfilled within expected time periods, the construction permit review fee—invoiced with the final permit—will include a surcharge from \$4000 to \$7500 depending on the type and how fast the permit is issued. See ch. NR 410 for specific expedited fees.

B. Construction Permit Exemptions (indicate one): If you are requesting a review and response to an exemption, a check must be included for the appropriate exemption fee listed below in parentheses.

- Actual Emissions-Based Exemption (for construction project only) (\$1,250)
- Research & Testing (\$1,250)
- Modification for source with Plant-wide Applicability Limit (\$1,500 / \$2,400 with modeling)
- Significant Net Emissions Increase (\$5,500 / \$6,500 with modeling)
- General exemption (\$500 - NR 406.04(2))
- Specific exemptions (\$500) – **Select appropriate code citation(s) from list:** \_\_\_\_\_
- Other: \_\_\_\_\_

JUL 24 2017

AIR MANAGEMENT

**For more information on exemption citations:** [https://docs.legis.wisconsin.gov/code/admin\\_code/nr/400/406.pdf](https://docs.legis.wisconsin.gov/code/admin_code/nr/400/406.pdf)

C. Operation Permit type for Construction Action (select one):

- Original – if you currently do not have a facility-wide operation permit
- Revision – so that your facility-wide operation permit will be revised to reflect the proposed project
- Renewal – if you are renewing your facility-wide operation permit in conjunction with the proposed project

**21. Operation Permit Actions:**

A. Type of Operation Permit Requested (select one):

- Part 70 Source
- Synthetic Minor, Non - Part 70 Source
- Non - Part 70 Source
- Elective

**NOTE:** Facilities that do not have a facility-wide operation permit issued MUST select the appropriate option. All other requests should indicate type of permit, to reflect continued or changing status.

B. Renewal

- Operation Permit Renewal

**NOTE:** For more information, see website on streamlined renewal application options.

C. Operation Permit Revision: (select one revision type – check code for criteria)

- Administrative Revision (NR 407.11)
- Minor Revision (NR 407.12)
- Significant Revision (NR 407.13)

**List Permit(s) to be revised:**  
113125320-F10

D. Operation Permit Exemption Options:  
(select one type for entire facility)

- Actual Emissions Based Exemption (NR 407.03(1m))
- Natural Minor Source Exemption (NR 407.03(1s))

**IMPORTANT:** The exemption options in Section D. require revocation of existing operation and/or construction permits. Certain construction permit conditions cannot be revoked, and therefore the department would be unable to revoke the permits. Review all existing permits for case-by-case determinations, especially NR 405/NR 408, and discuss with department staff whether conditions are revocable.

E. Other Operation Permit Exemption Options:

- General exemptions – NR 407.03(2)
- Specific categories – Must be only air pollution source at entire facility

Select appropriate code citation(s) from list: \_\_\_\_\_

**22. For All Permit Actions:**

Is additional information attached?  Yes  No

Are two copies of completed form(s) and additional information included?  Yes  No (Only one paper copy needed if an electronic copy is provided.)

Submit all application materials to:

WISCONSIN DEPARTMENT OF NATURAL RESOURCES  
BUREAU OF AIR MANAGEMENT  
OPERATION or CONSTRUCTION PERMIT TEAM LEADER  
P.O. BOX 7921  
MADISON, WI 53707-7921  
OR  
Email to: DNRAMAirPermit@wisconsin.gov

**23. Signature of Responsible Official**

A. Statement of Completeness:

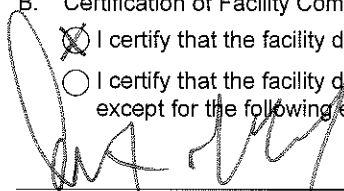
I have reviewed this application in its entirety and, based on information and belief formed after reasonable inquiry, I certify that the statements and information contained in this application are true, accurate and complete.

B. Certification of Facility Compliance Status: (select one box only) **This is not a requirement of Non-Part 70 Sources.**

- I certify that the facility described in this air pollution permit application is fully in compliance with all applicable requirements.
- I certify that the facility described in this air pollution permit application is fully in compliance with all applicable requirements, except for the following emissions unit(s) (list all non-complying units): \_\_\_\_\_

Signature of Responsible Official

Date Signed



7/17/07

Use of this form is required by the Department for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis Stats. Completion of this form is mandatory. The Department will not consider or act upon your application unless you complete and submit this form. It is not the Department's intention to use any personally identifiable information from this form for any other purpose.

In order for a comprehensive air quality analysis to be accomplished, a facility plot plan **MUST** be included with the permit application. If the application is for an initial operation permit, submit the elements under #2 below. If the application is for a renewal, answer #1 below first.

1. Have there been changes to the facility plot plan since the previous operation permit application was submitted?
- No. The plot plan submitted with the original application can be used for the renewal.  
 Yes. An up-to-date plot plan is attached.

2. If there have been changes to the facility plot plan since the last operation permit application submittal, **RESUBMIT** an up-to-date plot plan which must include the following or the permit application will be deemed incomplete:

**FOR DEPARTMENT USE ONLY**

COMPLETE    INCOMPLETE    NOT APPLICABLE

COMPLETE	INCOMPLETE	NOT APPLICABLE
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1. A building layout (blueprint, plan view) including all buildings occupied by or located on the site of the facility.
2. The maximum height of each building (excluding stack height).
3. The location and numerical designation of each stack. Please ensure these designations correspond to the appropriate stacks listed on the other permit forms in this application.
4. The location of fenced property lines (if any).
5. Identify direction "North" on all submittals.
6. All drawings shall be to scale and shall have the scale graphically depicted.
7. An additional regional map depicting the facility location in relation to the surrounding vicinity (roads or other features) shall be included.

Are there any outdoor storage piles on the facility site?       Yes       No

If so, what material does the pile(s) consist of?

Are there any dirt roads or unpaved parking lots on the facility site?       Yes       No



Use of this form is required by the Department for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis Stats. Completion of this form is mandatory. The Department will not consider or act upon your application unless you complete and submit this form. It is not the Department's intention to use any personally identifiable information from this form for any other purpose.

1. Briefly describe the proposed project or existing Unit(s) to be permitted. Attached supplemental forms as needed.

Minor revision for the installation of a temporary melting furnace at the Fair Oaks (North) facility.

For Renewal Applications:

1. Were any new or modified emissions units installed/modified at the facility since the last operation permit issuance date?

- No. Proceed to form 4530-102A.  
 Yes. Answer the following questions:

2. Briefly describe any new/modified emissions units installed at the facility since the last operation permit issuance date and include the following information. Attach supplemental forms as needed.

- a. List the Department issued construction and/or operation permit number as applicable (identifying which units were covered by which permit if multiple permits issued).
- i. If operation permit application forms were submitted for the new emission unit(s) covered by the construction permit mentioned above, reference the date of that application.
- ii. For Part 70 Sources Only: If no operation permit application forms were submitted for the new emissions unit(s) covered by the construction permit mentioned above, complete the appropriate forms 4530-118 through 4530-125.
- b. Include the Department issued construction permit exemption number, if one was assigned, or reference the date of the letter of the exemption.

2. Site Description

The facility is located at 201 Waubesa Street in Madison, Wisconsin. The plant consists of the Atwood (South) facility and the Fair Oaks (North) facility.

The building labeled Fair Oaks Facility (FOF) is located on a contiguous property at 166 South Fair Oaks Street. The FOF facility operates one RCI furnace, which is primarily used to remelt the plant runaround generated at the facility. Molten aluminum is then transported via ladle to diecasters for casting. Die lube is used for the casting process. The FOF facility operates 3 small cold cleaners for equipment maintenance.

Use of this form is required by the Department for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis Stats. Completion of this form is mandatory. The Department will not consider or act upon your application unless you complete and submit this form. It is not the Department's intention to use any personally identifiable information from this form for any other purpose.

1. List all significant existing or proposed air pollution units, operations, and activities at the facility. A short narrative of the inventory of air pollution emissions unit (e.g., boiler, printing line, etc.) followed by equipment specifications will suffice. If the facility consists of several individual emission units, present this information in an outline format. (See instruction booklet for an example Unit description.)

Stack	Process
S05	FOF Aluminum Diecast Three stacks: S05A, B, C 7 diecast machines: P05 (5 electric and 2 natural gas) Degasser: Fugitive indoor vents through S05 4 Grit Blasters: Fugitive indoor vents through S05
S07	Furnace #12: P45 RCI 12 at FOF: Natural gas fired 12 mmBtu/hr
S16	RCI 2 P36: Natural gas fired 12 mmBtu/hr
S17	RCI 1 P35: Natural gas fired at 12 mmBtu/hr
S19	Atwood Diecast. Eight stacks: S19B1, C1, D1, E1, B2, C2, D2, F2 17 diecast machines: P40 natural gas fired holding furnaces totaling 10.232 mmBtu/hr. 15 natural gas and 2 electric. Degasser: Fugitive indoor vents through S19. 2 Grit Blasters: Fugitive indoor vents through S19
P50	Fugitive emissions from the cold cleaners

For Renewal Applications:

1. If there were any new or modified emissions units installed/modified at the facility since the last operation permit issuance date:
  - a. If any of these new/modified units were exempt from construction permit requirements, but are significant emissions units and operation permit application(s) for the new unit(s) were submitted to the Department reference the date of those submittals.
  - b. If any of the new/modified units are insignificant emissions units list them on form 4530-102B.
  - c. If any of the new/modified emissions units do not fit any of the above categories, fill out the appropriate forms for each emissions unit as follows:
    - i. For Part 70 Sources: Fill out the appropriate forms 4530-103 through 4530-133; OR
    - ii. For Synthetic Minor Non Part-70 Sources and Non-Part 70 Sources: Fill out the appropriate forms 4530-103 through 4530-117 and 4530-126 through 4530-129.

Use of this form is required by the Department for any air pollution control permit application filed pursuant to ss. 285.61, 285.62 or 285.66, Wis Stats. Completion of this form is mandatory. The Department will not consider or act upon your application unless you complete and submit this form. It is not the Department's intention to use any personally identifiable information from this form for any other purpose.

1. Mark all insignificant existing or proposed air pollution units, operations, and activities at the facility listed below. If not listed, provide a short narrative of the inventory of air pollution emissions unit (e.g., boiler, printing line, etc.) followed by equipment specifications. If the facility consists of several individual emission units, present this information in an outline format. **For Renewal Applications, identify those that are new since the last update to your application.** (See instruction booklet for an example Unit description.)

- Maintenance of Grounds, Equipment, and Buildings (lawn care, painting, etc.)
- Boiler, Turbine, and HVAC System Maintenance
- Pollution Control Equipment Maintenance
- Internal Combustion Engines Used for Warehousing and Material Transport
- Fire Control Equipment
- Janitorial Activities
- Office Activities
- Convenience Water Heating
- Convenience Space Heating (< 5 million BTU/hr Burning Gas, Liquid, or Wood)
- Fuel Oil Storage Tanks (< 10,000 gal.)
- Stockpiled Contaminated Soils
- Demineralization and Oxygen Scavenging of Water for Boilers
- Purging of Natural Gas Lines
- Sanitary Sewer and Plumbing Venting
- Aqueous Parts Washers
- Die Steam Clean Booths (Kerosene-fired)
- Emergency Chlorine Scrubber
- Die Lube Spray Head Cleaning (Kerosene-fired)
- Propane Fork Lifts
- Tooling Ovens
- Caustic Baths
- Hand Blast Booth

**No additional insignificant sources as part of this revision.**

STACK IDENTIFICATION  
AIR POLLUTION CONTROL PERMIT APPLICATION  
Form 4530-103 11-93

Information attached? n (y/n)

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: Madison-Kipp Corporations	2. Facility identification number: 113125320	3. Stack identification number: S05A, S05B, S05C
---	---	---

4. Exhausting Unit(s), use Unit identification number from appropriate Form(s) 4530-104, 106, 107, 108 and/or 109

4530-104                      4530-106                      4530-107                      4530-108                      4530-109 P46

5. Identify this stack on the plot plan required on Form 4530-101

6. Indicate by checking:  
 This stack has an actual exhaust point.                       This stack serves to identify fugitive emissions.  
If this stack has an actual exhaust point, then provide the following stack parameters

7. Discharge height above ground level: 81 (feet) (each)

8. Inside dimensions at outlet (check one and complete):  
 Circular 5.68 (feet) (each)                       rectangular \_\_\_\_\_ length (feet) \_\_\_\_\_ width (feet)

9. Exhaust flow rate:  
Normal 52,120 (ACFM) (each)                      Maximum 152,120 (ACFM) (each)

10. Exhaust gas temperature (normal): 84.51 (°F)

11. Exhaust gas moisture content:                      Normal \_\_\_\_\_ volume percent                      Maximum \_\_\_\_\_ volume percent

12. Exhaust gas discharge direction:                       Up                       Down                       Horizontal

13. Is this stack equipped with a rainhat or any obstruction to the free flow of the exhaust gases from the stack?                       Yes                       No

\*\*\*\*\* Complete the appropriate Air Permit Application Forms(s) 4530-104, 106, 107, 108 or 109 for each Unit exhausting through this stack. \*\*\*\*\*

SEE INSTRUCTIONS ON REVERSE SIDE

1. Facility name: Madison-Kipp Corporation	2. Facility identification number: 113125320
3. Stack identification number: S05	4. Process number: P46

4a. Unit description: Temporary melt furnace for aluminum die casting

5. Indicate the control technology status.  Uncontrolled  Controlled

If the process is controlled, enter the control device number(s) from the appropriate form(s):

4530-110 \_\_\_\_\_ 4530-111 \_\_\_\_\_ 4530-112 \_\_\_\_\_ 4530-113 \_\_\_\_\_  
 4530-114 \_\_\_\_\_ 4530-115 \_\_\_\_\_ 4530-116 \_\_\_\_\_ 4530-117 \_\_\_\_\_

6. Source Classification Code (SCC):

7. Date of construction or last modification: 8/9/2017

8. Normal operating schedule: 24 hrs./day 6 days/wk. 313 days/yr.

9. Describe this process (please attach a flow diagram of the process). Aluminum melting	Attached?
---	-----------

10. List the types and amounts of raw materials used in this process:

Material	Storage/material handling process	Average usage	Units	Maximum usage	Units
Aluminum		0.5	ton/hr	0.5	ton/hr
Clean-up solvents					
Other (specify)					

11. List the types and amounts of finished products:

Material	Storage/material handling process	Average amount produced	Units	Maximum amount produced	Units
Cast aluminum		0.5	ton/hr	0.5	ton/hr

12. Process fuel usage:

Type of fuel	Maximum heat input to process million BTU/hr.	Average usage	Units	Maximum usage	Units
natural gas	1.22			1.22	MMBtu/hr

13. Describe any fugitive emissions associated with this process, such as outdoor storage piles, unpaved roads, open conveyors, etc.: None	Attached?
--	-----------

\*\*\*\*\* For this emissions unit, identify the method(s) of compliance demonstration by completing Form 4530-118, \*\*\*\*\*  
 DESCRIPTION OF METHODS USED FOR DETERMINING COMPLIANCE. Attach Form 4530-118 and its attachment(s) to this form. This is not a requirement of non-Part 70 sources.

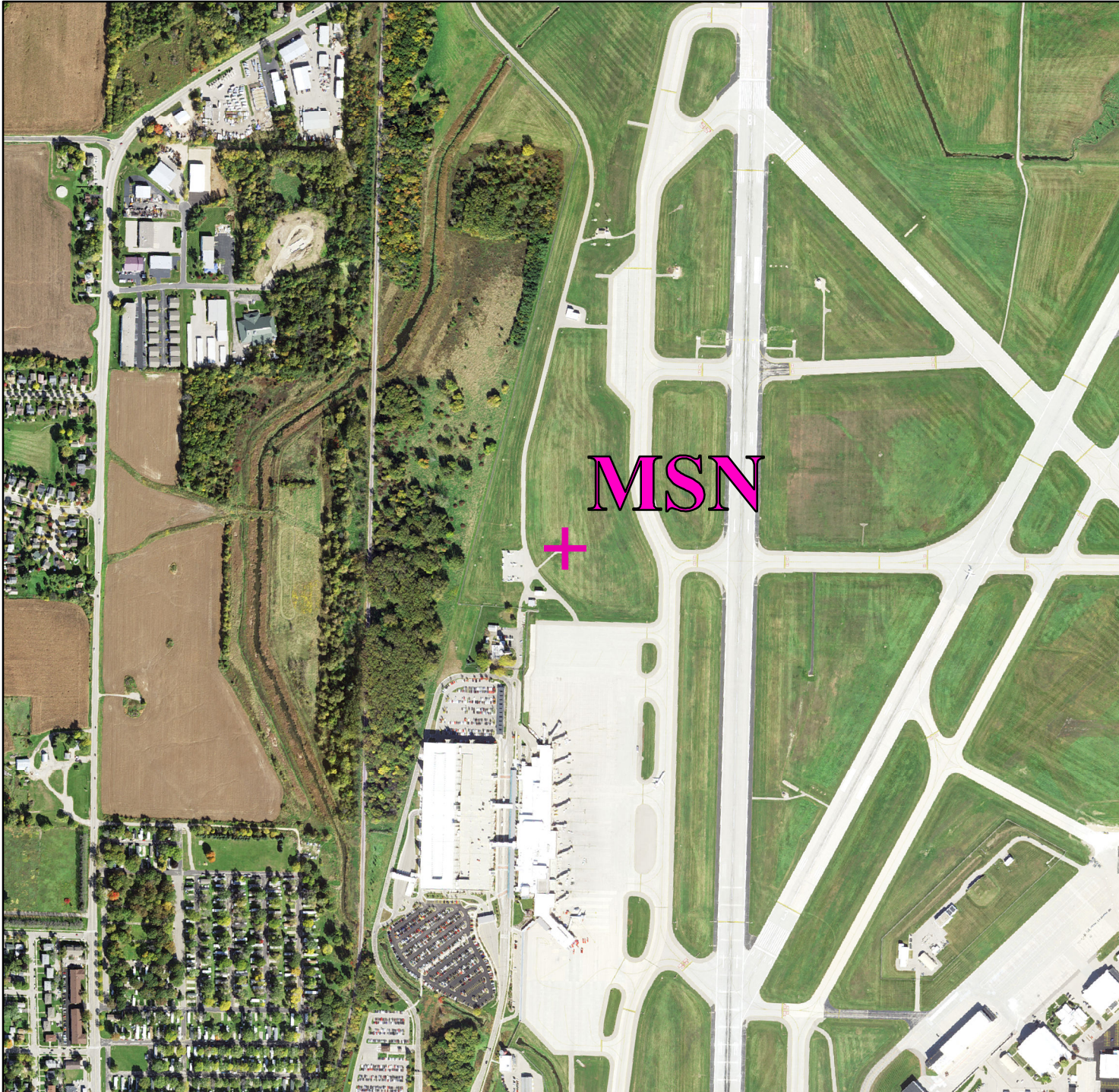
Mr. Michael Thorson  
September 12, 2017  
Page 14

**ATTACHMENT #4 Wisconsin DNR Meteorological Data**

## Site-Specific Meteorological Data

Click on .zip or .pdf links to open files.

<i>USAF ID</i>	<i>WBAN ID</i>	<i>FAA ID</i>	<i>STATION NAME</i>	<i>Upper Air ID (WBAN #)</i>	<i>ELEV (m)</i>	<i>LAT (deg)</i>	<i>LON (deg)</i>	<i>Total No. Calm Hrs</i>	<i>Total No. Missing Hrs</i>	<i>Data Link</i>	<i>Photo Link</i>
726419	94929	ASX	ASHLAND	MPX (94983)	250	46.55	-90.92	894	301	<a href="#">ASX16216.zip</a>	<a href="#">ASX.pdf</a>
727456	04919	DYT	SKY HARBOR	MPX (94983)	186	46.72	-92.04	8375	780	<a href="#">DYT16216.zip</a>	<a href="#">DYT.pdf</a>
726463	14897	AUW	WAUSAU	GRB (14898)	366	44.93	-89.63	577	453	<a href="#">AUW16216.zip</a>	<a href="#">AUW.pdf</a>
726508	94973	HYR	HAYWARD	MPX (94983)	369	46.03	-91.44	1862	1099	<a href="#">HYR16216.zip</a>	<a href="#">HYR.pdf</a>
727415	04803	RHI	RHINELANDER	GRB (14898)	503	45.63	-89.48	627	537	<a href="#">RHI16216.zip</a>	<a href="#">RHI.pdf</a>
726435	14991	EAU	EAU CLAIRE	MPX (94983)	269	44.87	-91.49	592	348	<a href="#">EAU16216.zip</a>	<a href="#">EAU.pdf</a>
726574	94985	MFI	MARSHFIELD	GRB (14898)	382	44.64	-90.19	289	436	<a href="#">MFI16216.zip</a>	<a href="#">MFI.pdf</a>
726452	04826	ISW	WISCONSIN RAPIDS	GRB (14898)	309	44.36	-89.84	1136	570	<a href="#">ISW16216.zip</a>	<a href="#">ISW.pdf</a>
726506	04840	FLD	FOND DU LAC	GRB (14898)	242	43.77	-88.49	302	451	<a href="#">FLD16216.zip</a>	<a href="#">FLD.pdf</a>
726450	14898	GRB	GREEN BAY	GRB (14898)	208	44.48	-88.14	313	395	<a href="#">GRB16216.zip</a>	<a href="#">GRB.pdf</a>
726456	94855	OSH	WITTMAN	GRB (14898)	246	43.97	-88.56	387	538	<a href="#">OSH16216.zip</a>	<a href="#">OSH.pdf</a>
726410	14837	MSN	MADISON	GRB (14898)	262	43.14	-89.35	585	384	<a href="#">MSN16216.zip</a>	<a href="#">MSN.pdf</a>
725470	94908	DBQ	DUBUQUE	DVN (94982)	317	42.40	-90.71	290	524	<a href="#">DBQ16216.zip</a>	<a href="#">DBQ.pdf</a>
726438	94994	OVS	BOSCOBEL	DVN (94982)	203	43.16	-90.68	2518	744	<a href="#">OVS16216.zip</a>	<a href="#">OVS.pdf</a>
726416	14921	LNR	LONE ROCK	DVN (94982)	218	43.21	-90.19	676	584	<a href="#">LNR16216.zip</a>	<a href="#">LNR.pdf</a>
726430	14920	LSE	LA CROSSE	MPX (94983)	198	43.88	-91.25	257	317	<a href="#">LSE16216.zip</a>	<a href="#">LSE.pdf</a>
726400	14839	MKE	MILWAUKEE	GRB (14898)	203	42.95	-87.90	246	275	<a href="#">MKE16216.zip</a>	<a href="#">MKE.pdf</a>
726505	04845	ENW	KENOSHA	GRB (14898)	223	42.60	-87.94	150	371	<a href="#">ENW16216.zip</a>	<a href="#">ENW.pdf</a>
726425	04841	SBM	SHEBOYGAN	GRB (14898)	229	43.77	-87.85	327	319	<a href="#">SBM16216.zip</a>	<a href="#">SBM.pdf</a>



# Madison MSN

Total Distance Across  
Picture ~ 2 km

2015 Aerial Photo



0 0.05 0.1 0.2  
Miles



The data shown on this map  
have been obtained from  
various sources, and are of  
varying age, reliability,  
and resolution

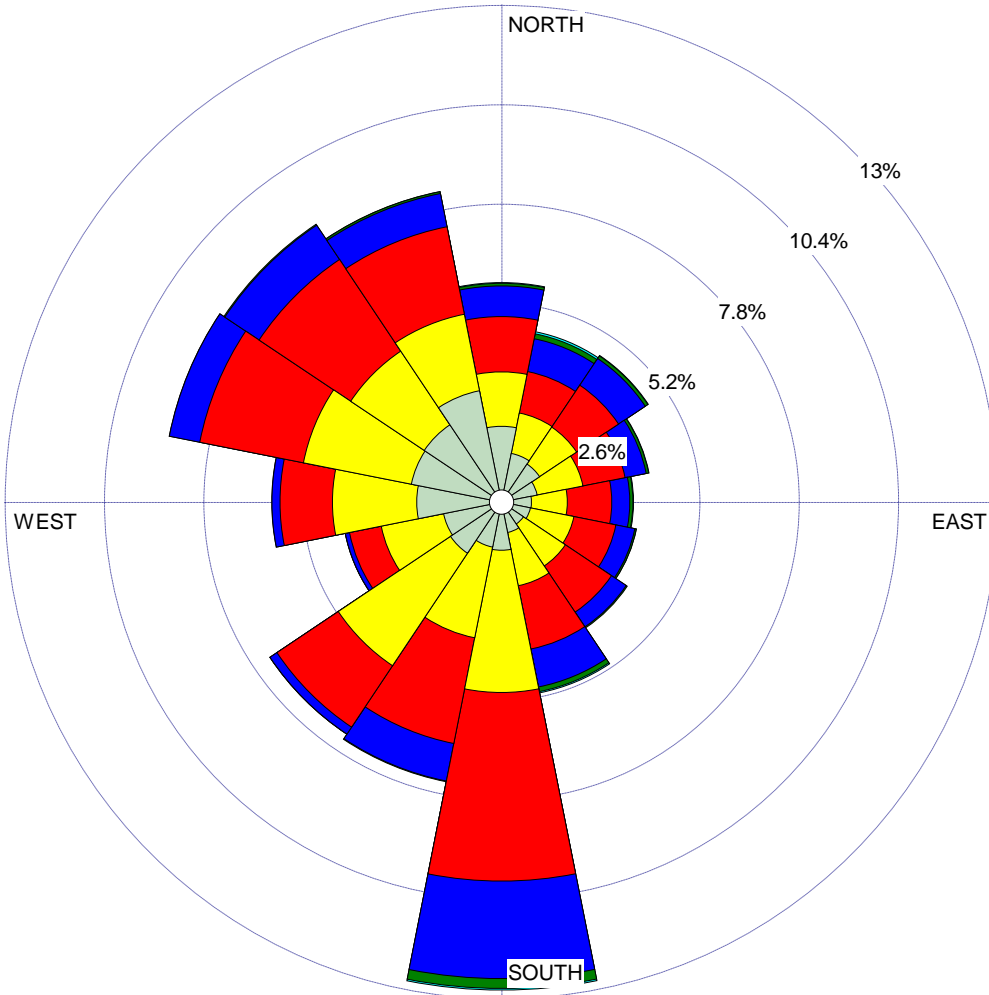


WIND ROSE PLOT:

**Station #14837 - MADISON/DANE CO REGIONAL ARPT, WI**

DISPLAY:

**Wind Speed  
Direction (blowing from)**



WIND SPEED  
(m/s)

- >= 11.10
- 8.80 - 11.10
- 5.70 - 8.80
- 3.60 - 5.70
- 2.10 - 3.60
- 0.50 - 2.10

Calms: 1.33%

COMMENTS:

DATA PERIOD:

**Start Date: 1/1/2011 - 00:00  
End Date: 12/31/2015 - 23:59**

COMPANY NAME:

MODELER:

CALM WINDS:

**1.33%**

TOTAL COUNT:

**43715 hrs.**

AVG. WIND SPEED:

**3.52 m/s**

DATE:

**9/8/2017**

PROJECT NO.: