

June 22, 2009

Mr. Allan Hambley
 Louisiana-Pacific Canada, Ltd.
 Plant EHS Manager
 5 km East of Minitonas on Hwy 10
 Minitonas, Manitoba R0L1G0

RE: Swan Valley Oriented Strand Board (OSB) Modeling Project
 Dispersion Modeling Analysis
 Minitonas, Manitoba Canada

Dear Mr. Hambley:

Cordilleran a Division of Olsson Associates (Olsson), on behalf of Louisiana-Pacific Canada, Ltd., is herein summarizing the modeling study performed for the Swan Valley Facility. The facility is located five kilometers east of Minitonas on highway 10.

The purpose of this dispersion modeling analysis was to evaluate the near-field impacts of certain emissions generated at the Swan Valley OSB facility. Olsson utilized the industrial source complex (ISC3) modeling executable to model Acetaldehyde, Acrolein, Methanol, Propionaldehyde, PM₁₀ and PM_{2.5}.

Facility emission sources and pollutant emission rates are summarized in Table 1.

Table 1: Swan Valley Source List

Model ID	Description	Emission Rate (g/s)					
		Acetaldehyde	Acrolein	Methanol	PM10	PM2.5	Propionaldehyde
SRC1	Trim Saws				0.10	ND	
SRC2	Formers				0.06	ND	
SRC3	Raw Fuel Bin				0.04	ND	
SRC4	Sander				0.05	ND	
SRC5	Flying Cut Off Saws				0.08	ND	
SRC10	Thermal Oil System				1.67	0.75	
SRC9	Press	0.09	ND	2.23	2.10	1.81	ND
SRC12	Combined WESP Stack	0.43	0.14	2.46	4.23	4.23	0.25

NOTE: Data Provided by Louisiana-Pacific Canada
 WESP: Wet Electrostatic Precipitator
 g/s: grams per second

A previous model approved by Province of Manitoba was run by staff of Olsson in November 2008. Previous model inputs including building downwash, terrain features, meteorological data and source inputs were implemented in the subject model.

Table 2 summarizes the exhaust stack parameters for the current modeling study.

Table 2: Swan Valley Exhaust Stack Modeling Parameters

Source ID	Height (m)	Temperature (K)	Velocity (m/s)	Diameter (m)	Zone 12 UTM (m)		
					Easting	Northing	Elevation
SRC1	22.4	310.93	12.65	1.02	365121.3	5772764.1	335.28
SRC2	25.4	317.59	7.85	0.71	365126.5	5772860.2	335.28
SRC3	23.9	289.15	13.35	0.71	365114.6	5772929.0	335.28
SRC4	22.4	289.15	14.67	0.91	365109.0	5772779.0	335.28
SRC5	25.5	309.82	20.83	0.91	365129.5	5772860.2	335.28
SRC9	30.5	328.15	17.93	2.18	365075.4	5772807.0	335.28
SRC10	30.5	511.48	15.73	1.63	365049.5	5772934.0	335.28
SRC12	49.5	353.43	16.76	2.59	365055.0	5772895.0	335.28

m: Meters

K: Kelvin

m/s: meters per second

Model input files were developed with a single source group (ALL), which constitutes the entire study. Because nearby sources were not implemented in this study, the ALL source group constitutes all emission sources at the facility. All pollutants, with the exception of PM₁₀ and PM_{2.5}, in this exercise were modeled on a 1-hr, 24-hr and annual basis. PM₁₀ and PM_{2.5} were only modeled on a 24-hr basis for comparison to applicable standards.

Table 3 summarizes the maximum 1-hr, 24-hr and annual impacts as predicted by the ISC-Prime modeling executable.

Table 3: Maximum Predicted Ambient Air Concentrations

Maximum Predicted ($\mu\text{g}/\text{m}^3$)													
Acetaldehyde			Acrolein			Methanol			PM ₁₀	PM _{2.5}	Propionaldehyde		
1-hr	24-hr	Ann	1-hr	24-hr	Ann	1-hr	24-hr	Ann	24-hr	24-hr	1-hr	24-hr	Ann
5.63	1.54	0.11	1.35	0.42	0.02	63.57	18.66	2.25	32.29	22.26	2.41	0.74	0.03

$\mu\text{g}/\text{m}^3$: micrograms per cubic meter

The maximum predicted ambient air concentrations for Acetaldehyde, Acrolein, Methanol, Propionaldehyde, PM₁₀ and PM_{2.5}, and the associated 1-hr, 24-hr and annual iso-concentration plots are provided in Appendix A. Additionally, a statistical analysis and corresponding frequency distribution was prepared for each modeling run and is included in Appendix A. Table 4 summarizes the predicted HAP and particulate concentrations by percentile.

Mr. Al Hambley

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Table 4: Concentrations by Percentile

Percentile	Concentration ($\mu\text{g}/\text{m}^3$)													
	Acetaldehyde			Acrolein			Methanol			PM ₁₀	PM _{2.5}	Propionaldehyde		
	1-hr	24-hr	Ann	1-hr	24-hr	Ann	1-hr	24-hr	Ann	24-hr	24-hr	1-hr	24-hr	Ann
99.9	2.835	1.267	0.097	0.698	0.344	0.014	23.557	18.363	1.933	27.285	19.616	1.247	0.614	0.025
99	0.618	0.302	0.073	0.147	0.076	0.013	5.965	15.522	1.178	24.245	16.686	0.260	0.122	0.023
98	0.294	0.225	0.064	0.072	0.063	0.012	2.623	10.113	0.946	22.465	14.596	0.129	0.099	0.021
95	0.000	0.173	0.050	0.000	0.041	0.010	0.000	6.991	0.700	17.029	10.019	0.000	0.068	0.018
90	0.000	0.162	0.037	0.000	0.024	0.008	0.000	5.215	0.476	13.107	7.521	0.000	0.037	0.014
50	0.000	0.081	0.015	0.000	0.000	0.003	0.000	0.266	0.190	2.185	0.732	0.000	0.000	0.006

Based upon the data generated by the ISC3 modeling executable, Olsson did not evaluate ambient air impacts for the aforementioned pollutants in comparison to Manitoba standards.

Please feel free to contact me if you have any questions, require any additional information, or would like more information on possible scenarios. I can be reached at 303-237-2072.

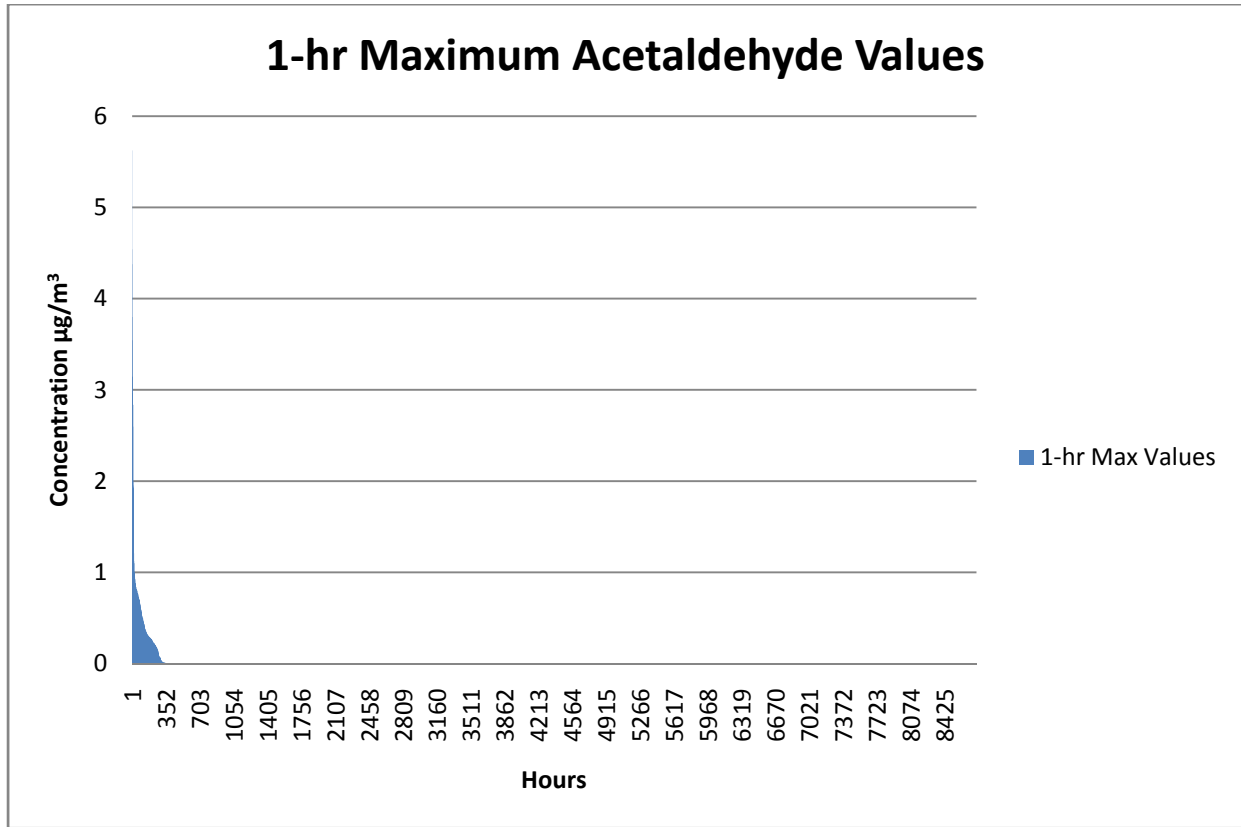
Sincerely,

Cordilleran a Division of Olsson Associates

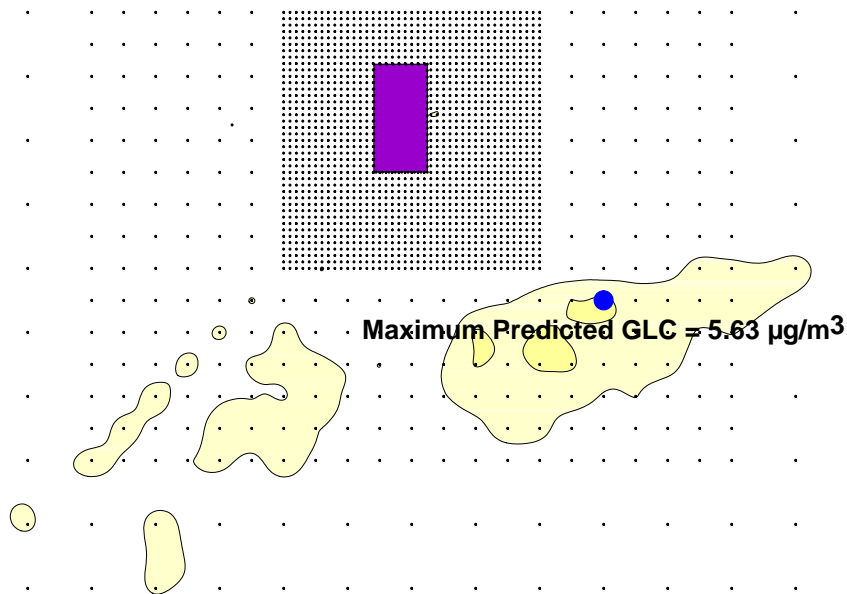
Zach Kimball
Project Engineer

Appendix A

1-hr Acetaldehyde Statistical Analysis

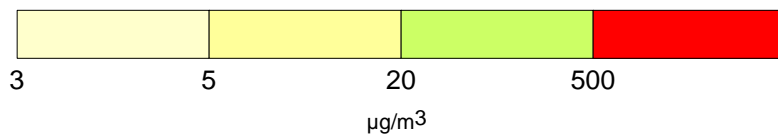


Percentile	Max. Value ($\mu\text{g}/\text{m}^3$)
99.9%	2.835
99%	0.618
98%	0.294
95%	0.000
90%	0.000
50%	0.000



Maximum Predicted GLC = 5.63 µg/m³

Acetaldehyde 1-hr Maximum Concentrations
1" = 3,000 m



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DRAWN BY:	Zach Kimball
DATE:	5/19/2009

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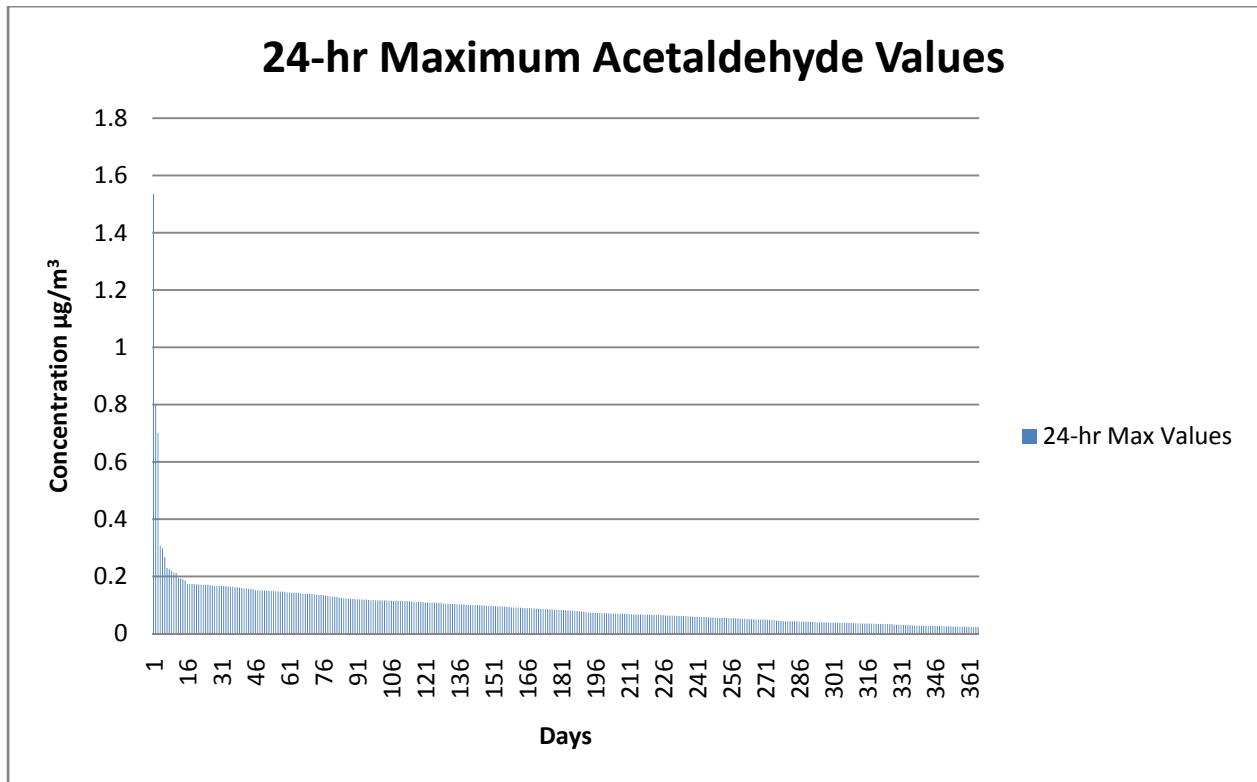


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EXHIBIT

1

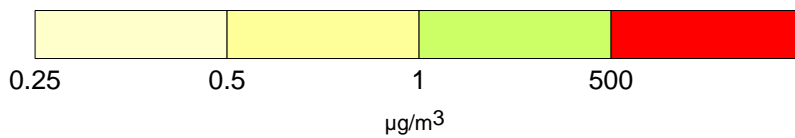
24-hr Acetaldehyde Statistical Analysis



Percentile	Max. Value ($\mu\text{g}/\text{m}^3$)
99.9%	1.267
99%	0.302
98%	0.225
95%	0.173
90%	0.162
50%	0.081

Maximum Predicted GLC = 1.54 $\mu\text{g}/\text{m}^3$

Acetaldehyde 24-hr Maximum Concentrations
1" = 3,000 m



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DRAWN BY: Zach Kimball
DATE: 5/19/2009

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Swan Valley OSB

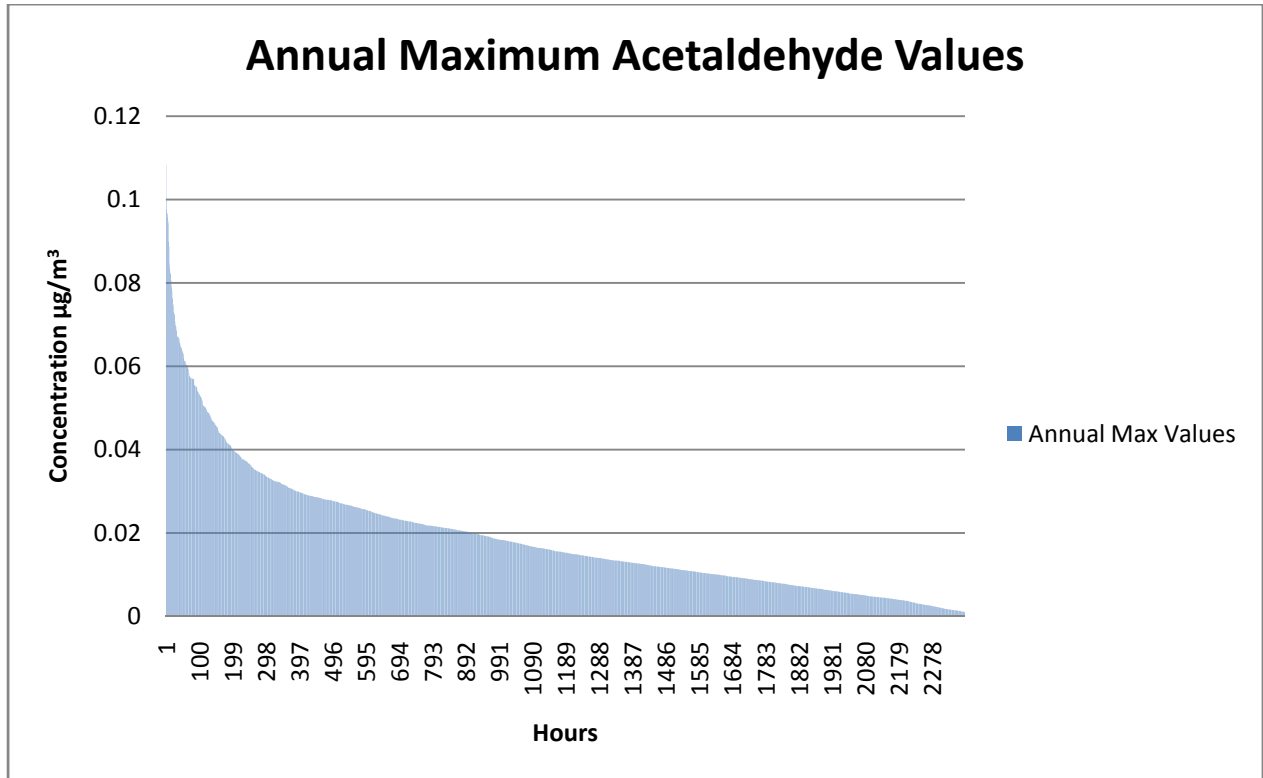
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EXHIBIT

2

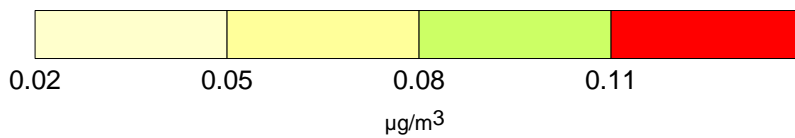
Annual Acetaldehyde Statistical Analysis



Percentile	Max. Value ($\mu\text{g}/\text{m}^3$)
99.9%	0.097
99%	0.073
98%	0.064
95%	0.050
90%	0.037
50%	0.015

Maximum Predicted GLC = 0.108 $\mu\text{g}/\text{m}^3$

Acetaldehyde Annual Maximum Concentrations
1" = 3,000 m



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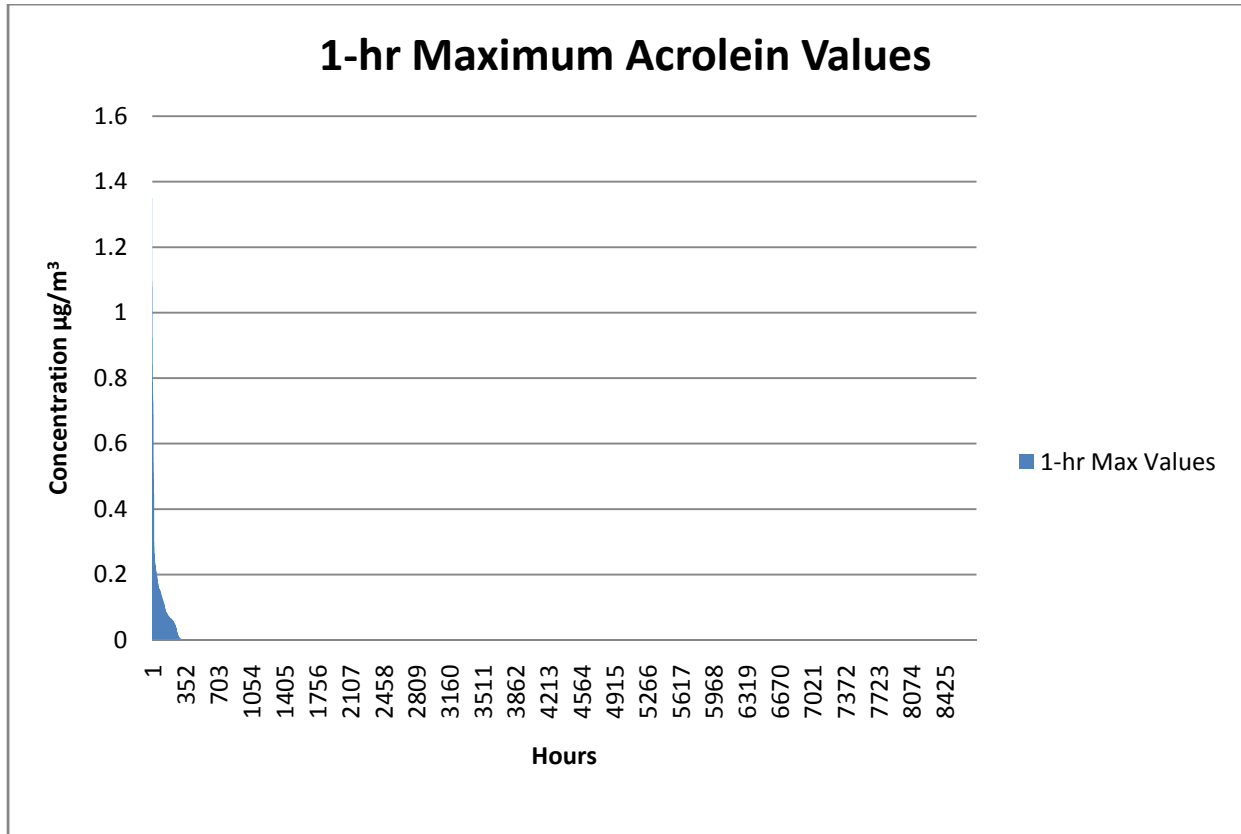
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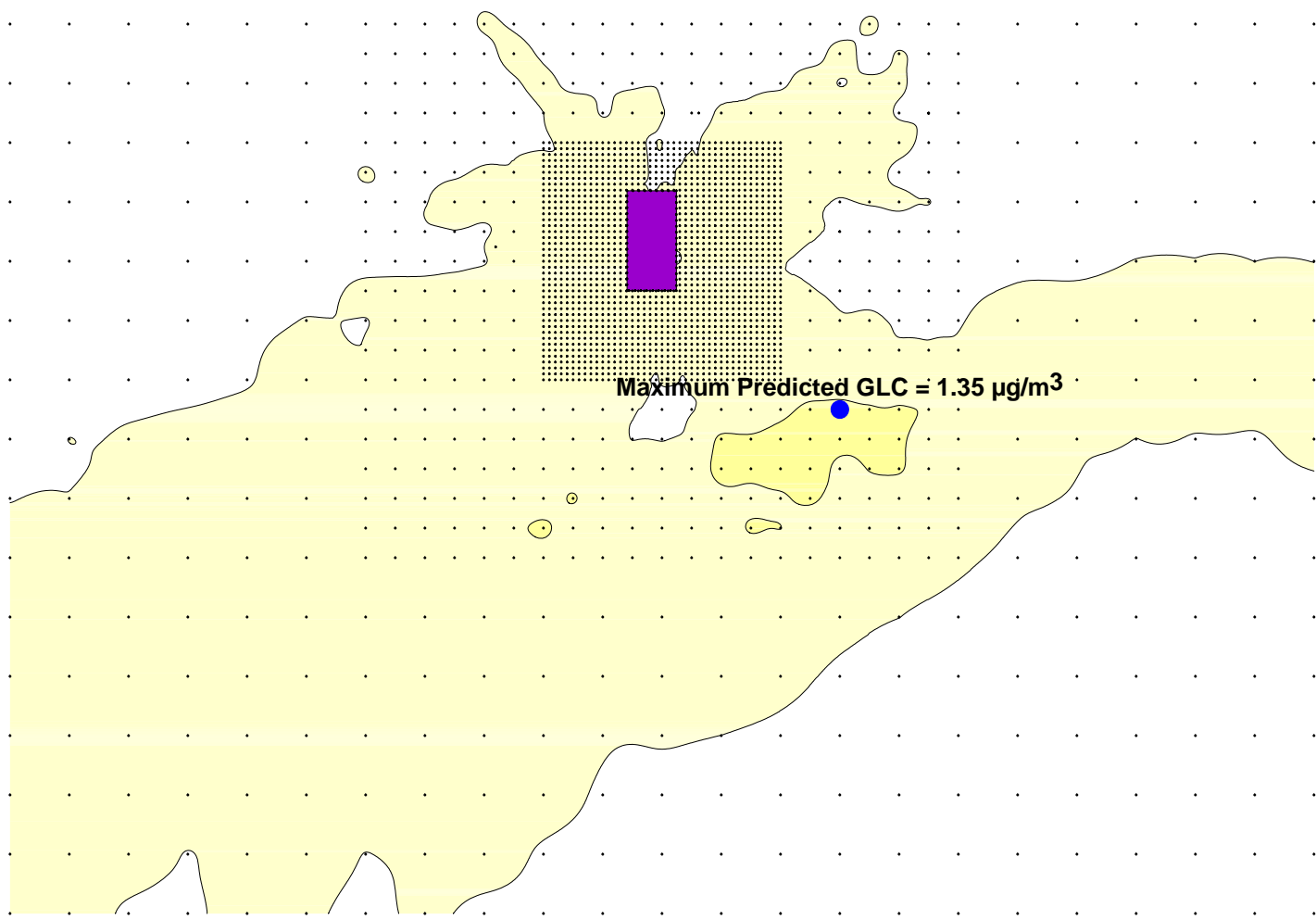
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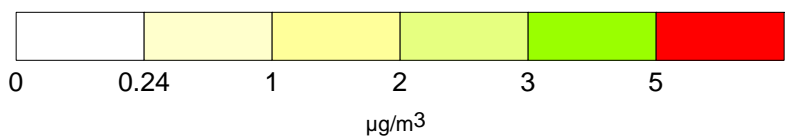
1-hr Acrolein Statistical Analysis



Percentile	Max. Value ($\mu\text{g}/\text{m}^3$)
99.9%	0.698
99%	0.147
98%	0.072
95%	0.000
90%	0.000
50%	0.000



Acrolein 1-hr Maximum Concentrations
1" = 3,000 m



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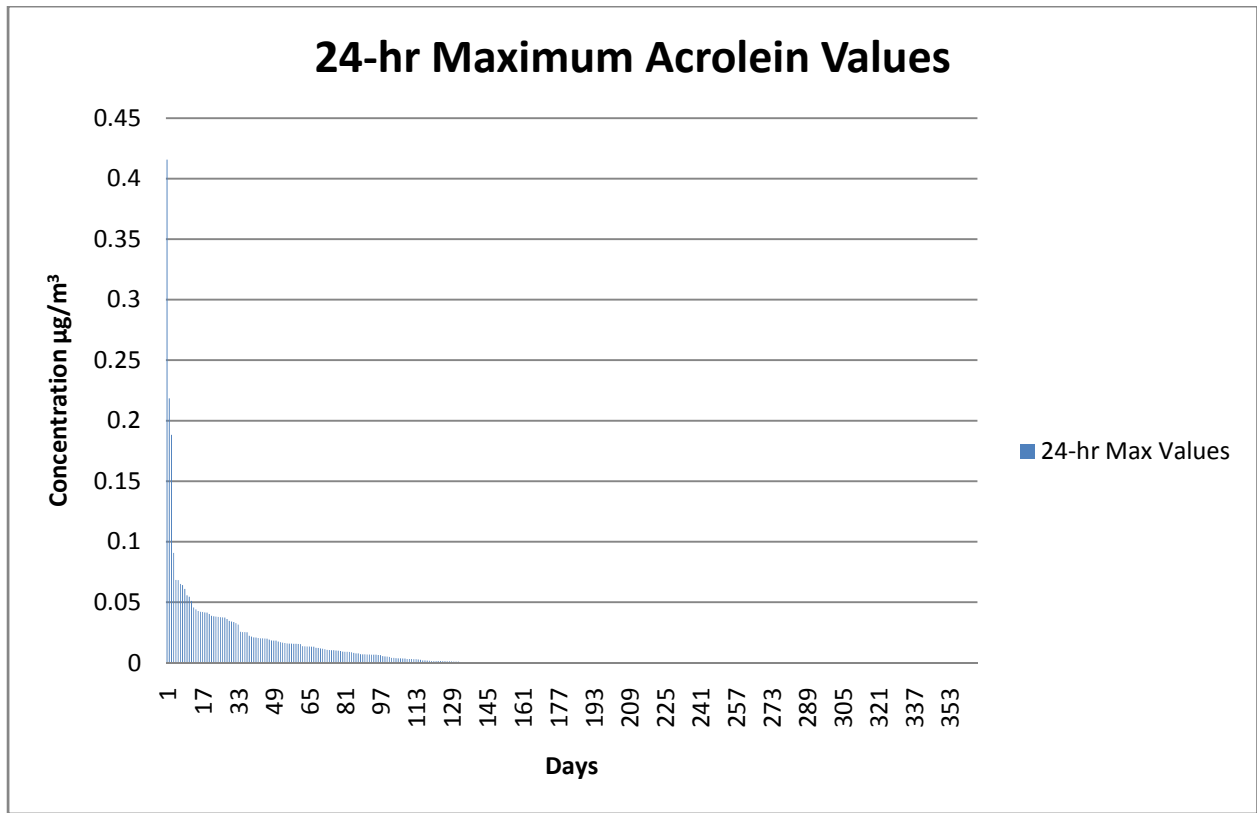
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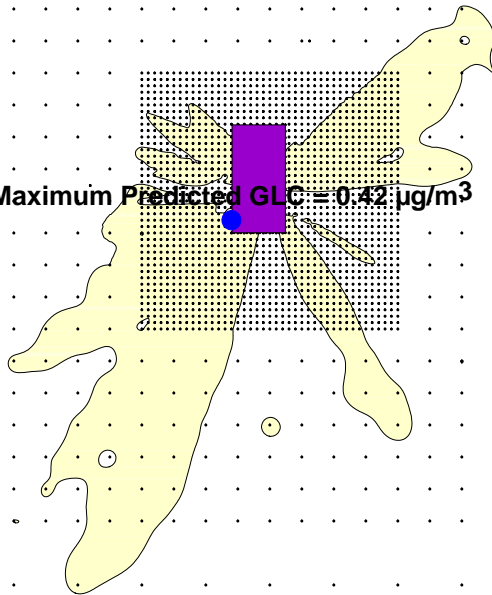
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24-hr Acrolein Statistical Analysis

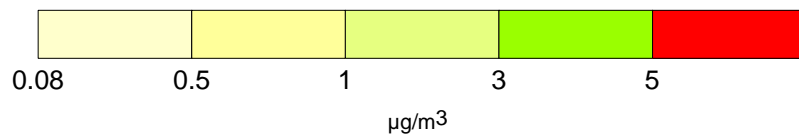


Percentile	Max. Value ($\mu\text{g}/\text{m}^3$)
99.9%	0.344
99%	0.076
98%	0.063
95%	0.041
90%	0.024
50%	0.000

Maximum Predicted GLC = 0.42 $\mu\text{g}/\text{m}^3$



Acrolein 24-hr Maximum Concentrations
1" = 3,000 m



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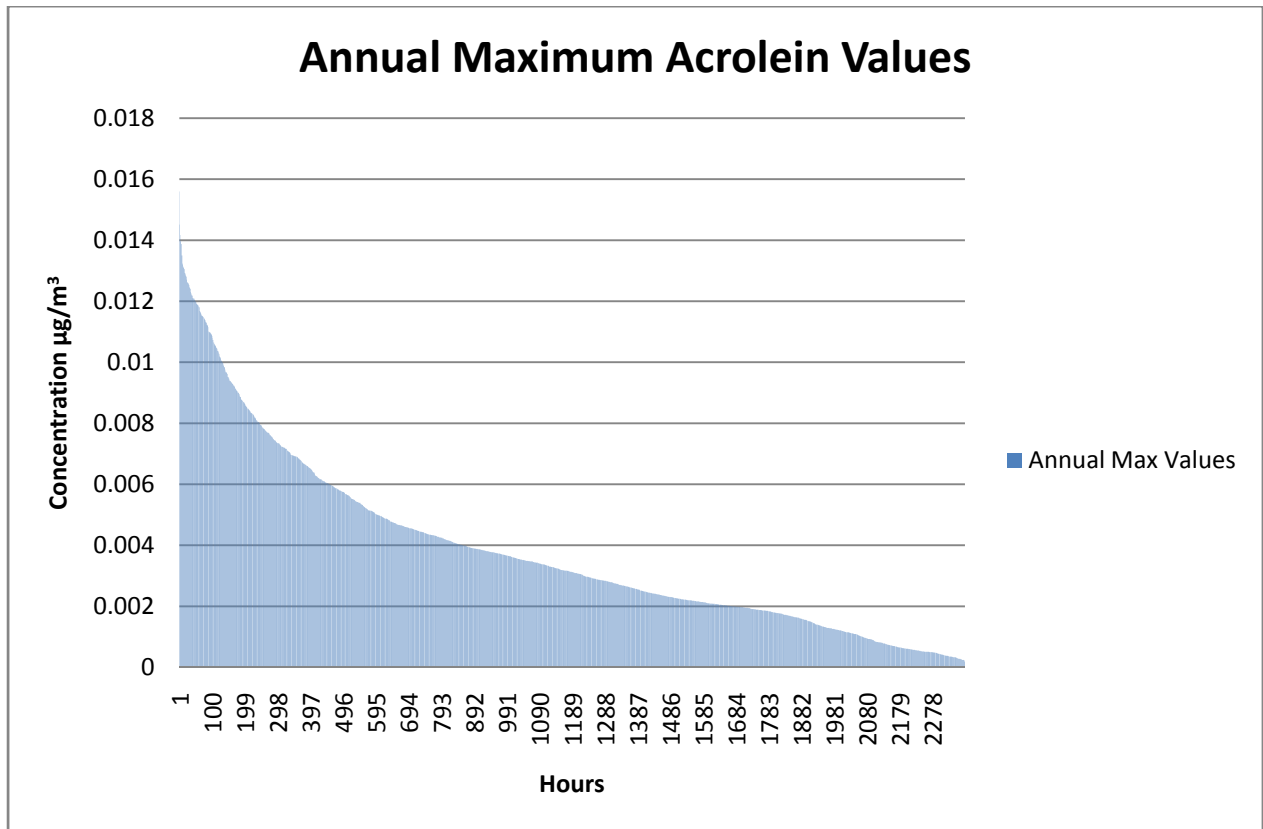


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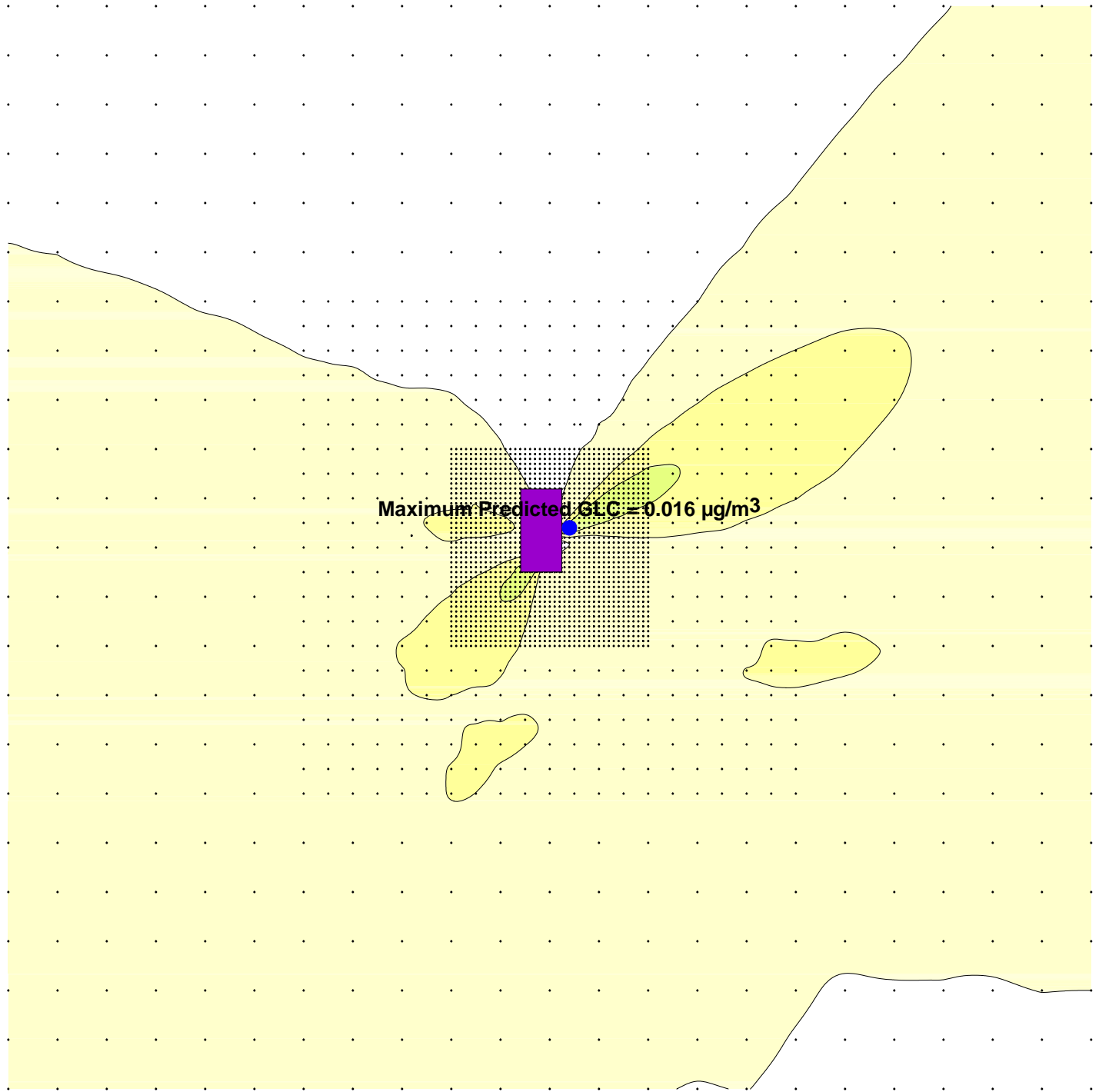
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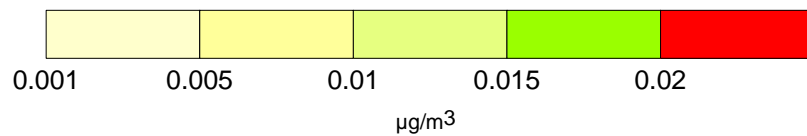
Annual Acrolein Statistical Analysis



Percentile	Max. Value ($\mu\text{g}/\text{m}^3$)
99.9%	0.014
99%	0.013
98%	0.012
95%	0.010
90%	0.008
50%	0.003



Acrolein Annual Maximum Concentrations
1" = 3,000 m



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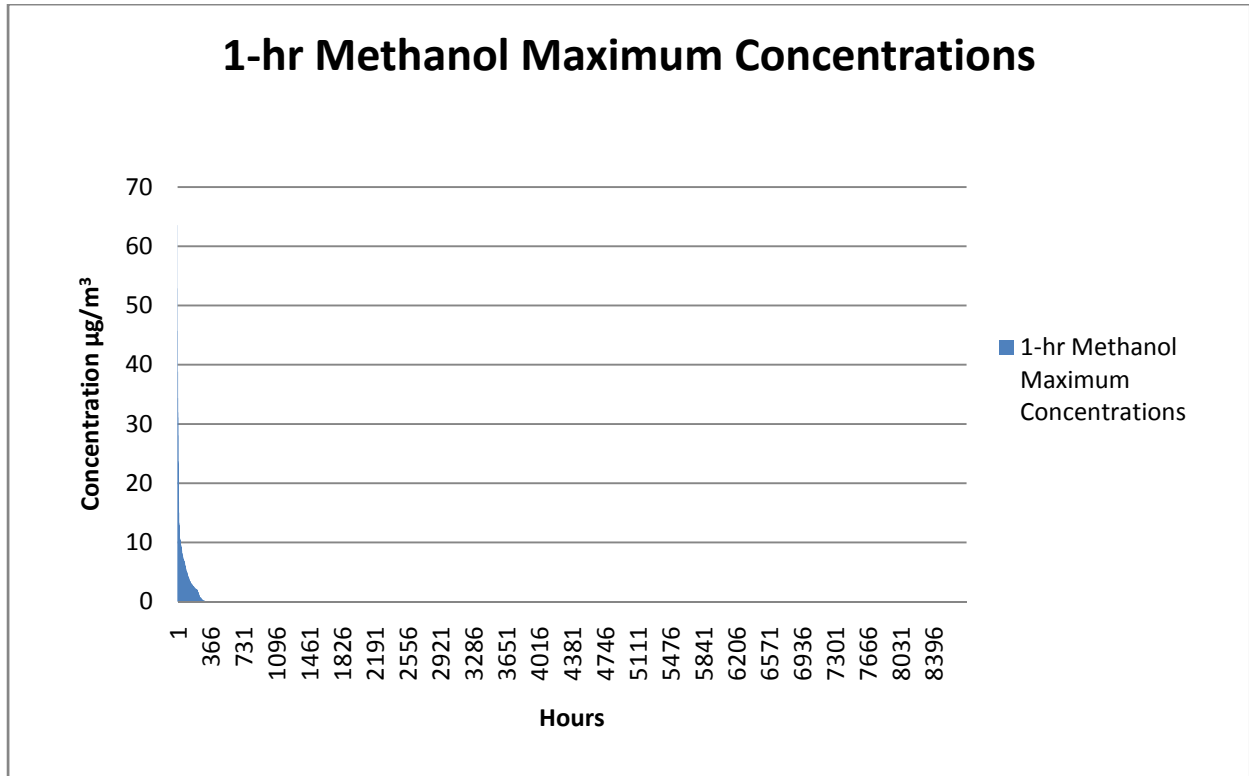


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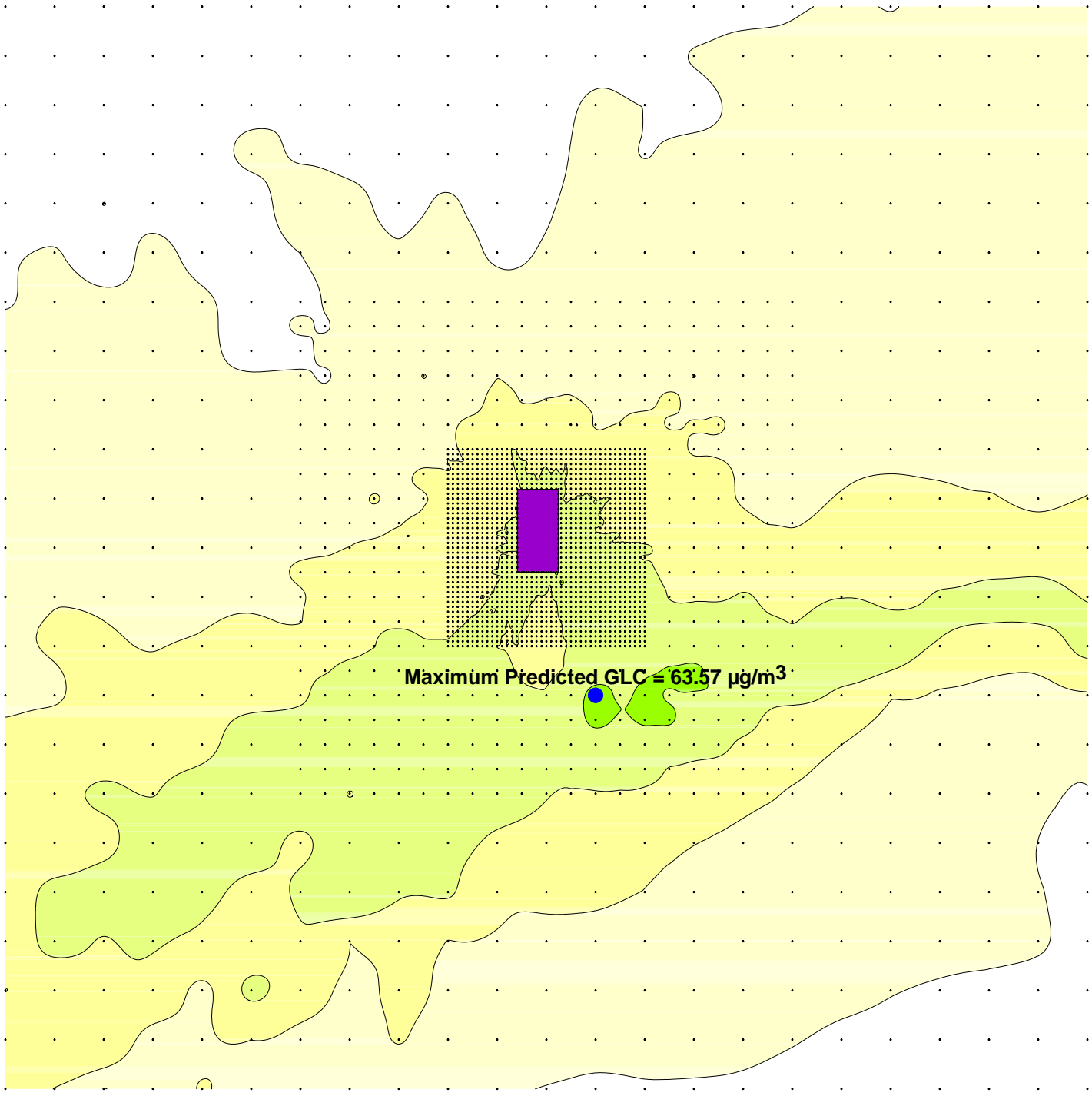
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6

1-hr Methanol Statistical Analysis

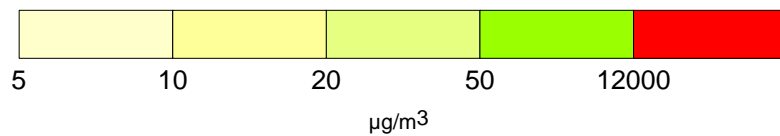


Percentile	Max. Value ($\mu\text{g}/\text{m}^3$)
99.9%	23.557
99%	5.965
98%	2.623
95%	0.000
90%	0.000
50%	0.000



Maximum Predicted GLC = 63.57 µg/m³

Methanol 1-hr Maximum Concentrations
1" = 3,000 m



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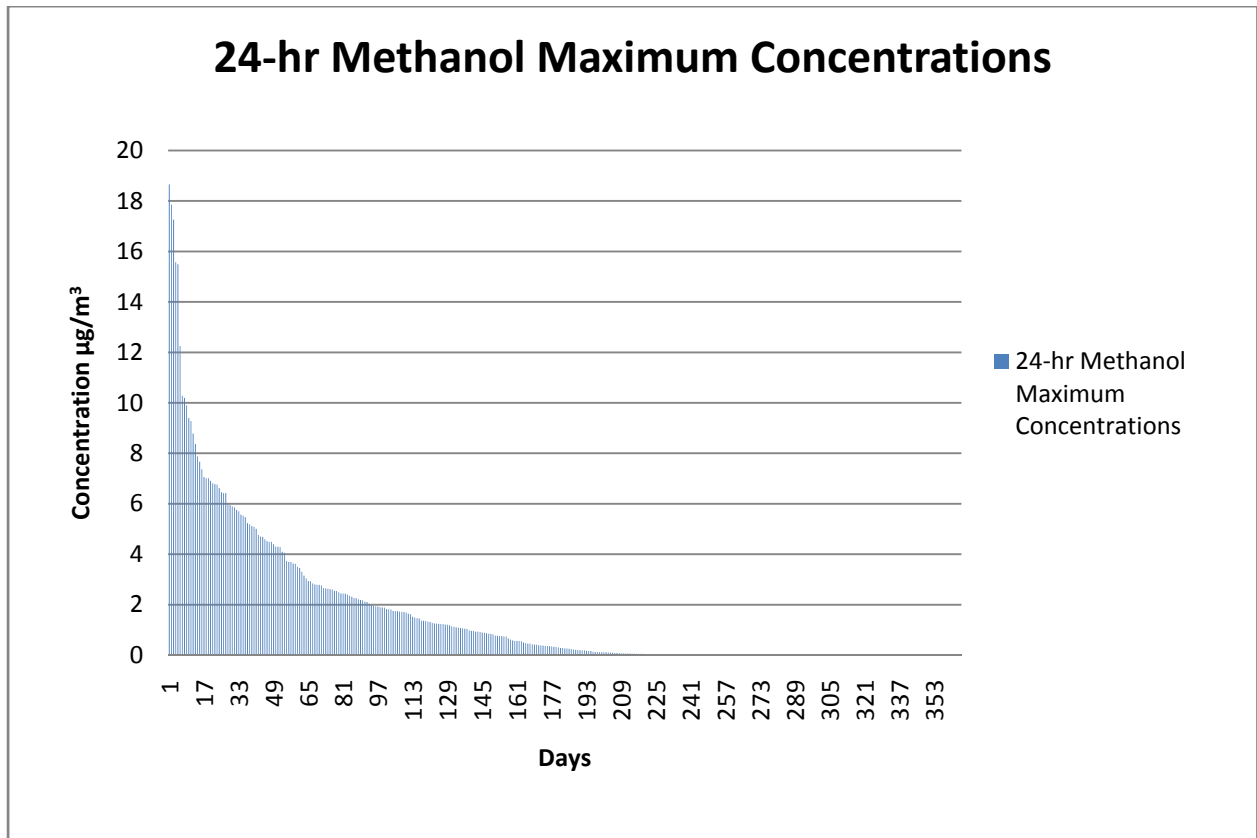
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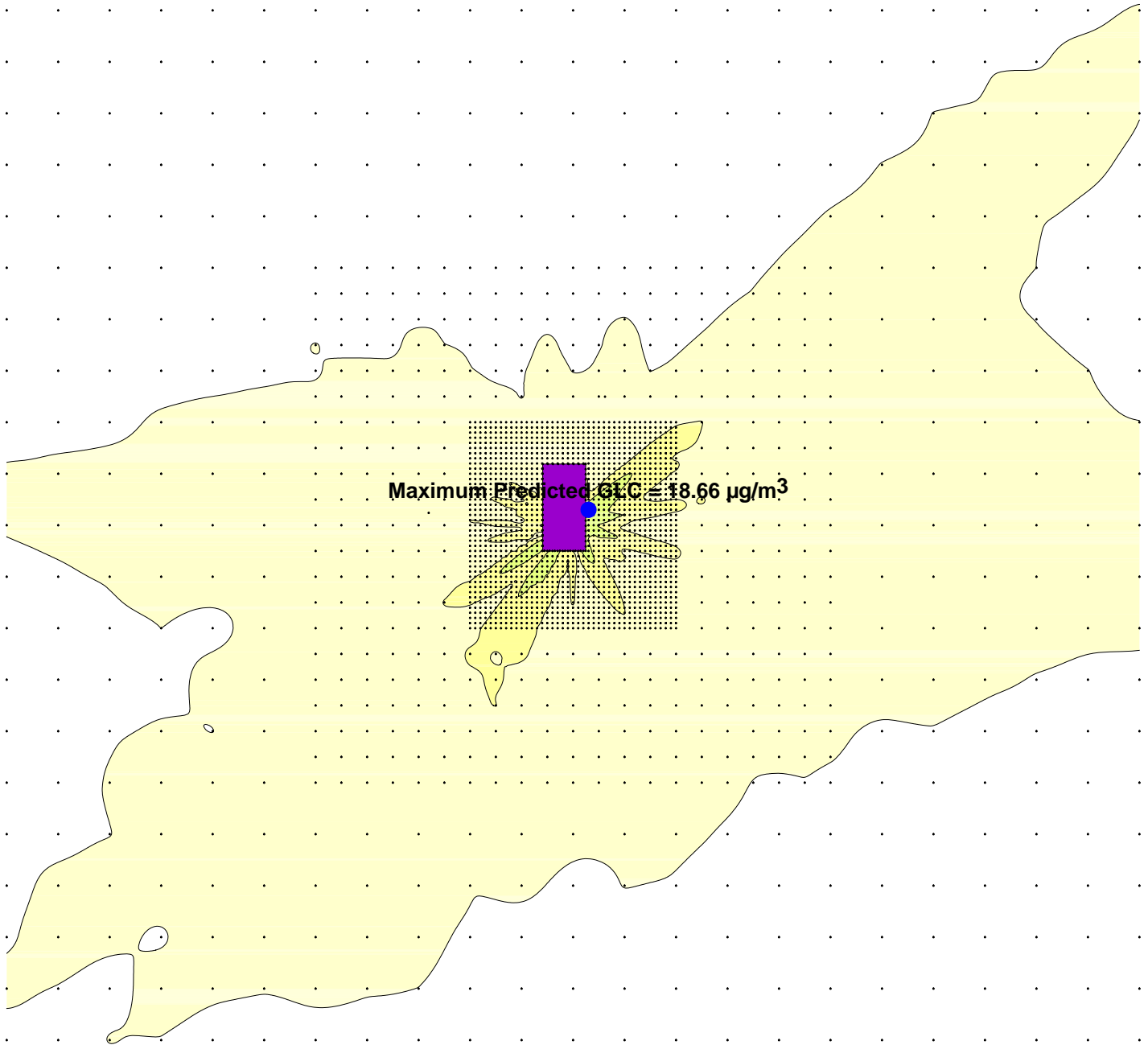
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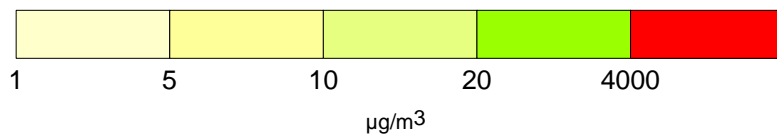
24-hr Methanol Statistical Analysis



Percentile	Max. Value ($\mu\text{g}/\text{m}^3$)
99.9%	18.363
99%	15.522
98%	10.113
95%	6.991
90%	5.215
50%	0.266



Methanol 24-hr Maximum Concentrations
 1" = 3,000 m



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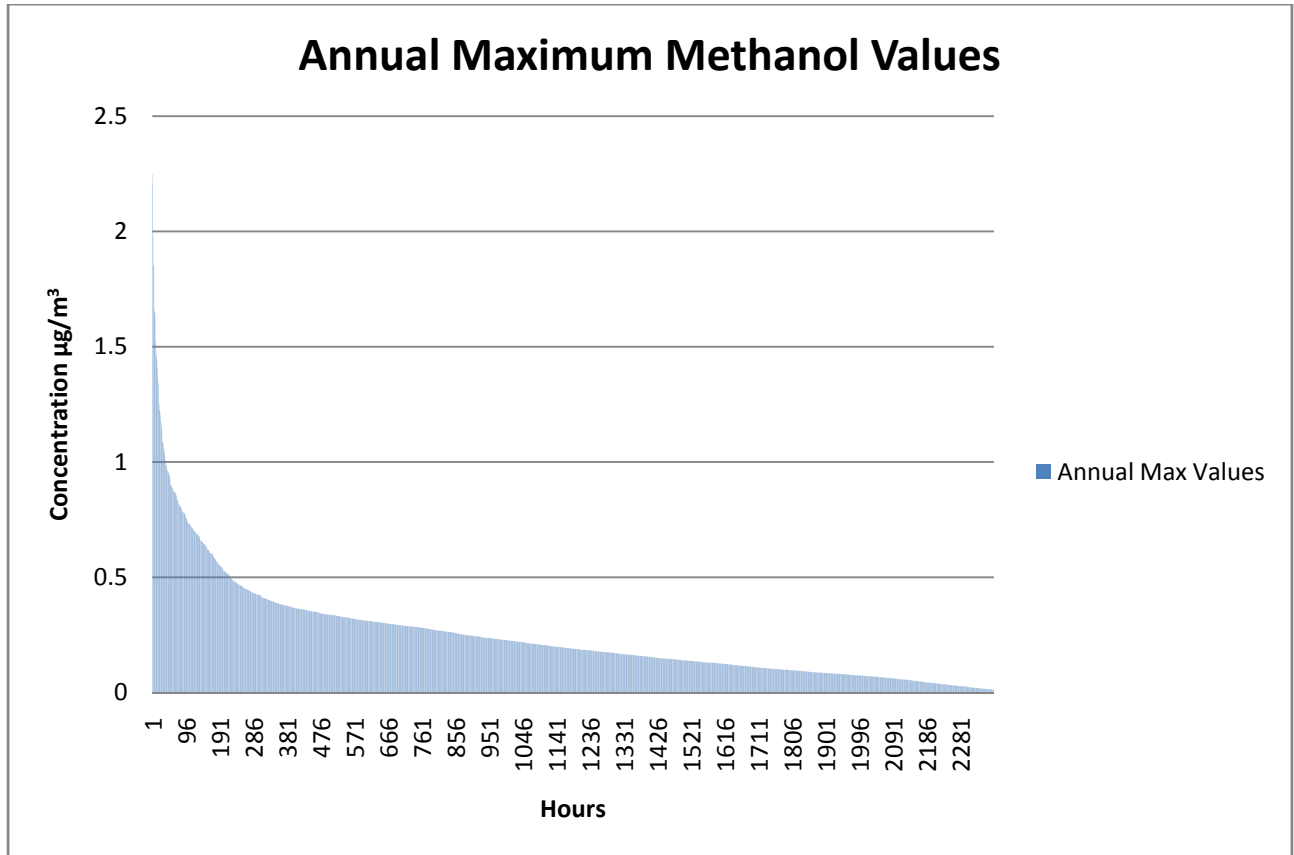
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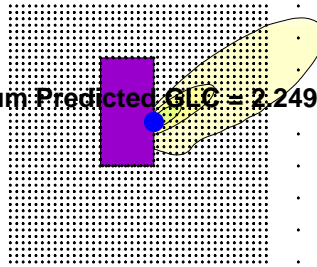
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8

Annual Methanol Statistical Analysis

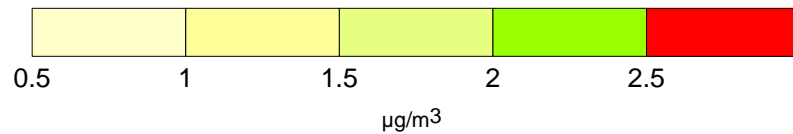


Percentile	Max. Value ($\mu\text{g}/\text{m}^3$)
99.9%	1.933
99%	1.178
98%	0.946
95%	0.700
90%	0.476
50%	0.190

Maximum Predicted GLC = 2.249 $\mu\text{g}/\text{m}^3$



Methanol Annual Maximum Concentrations
1" = 3,000 m



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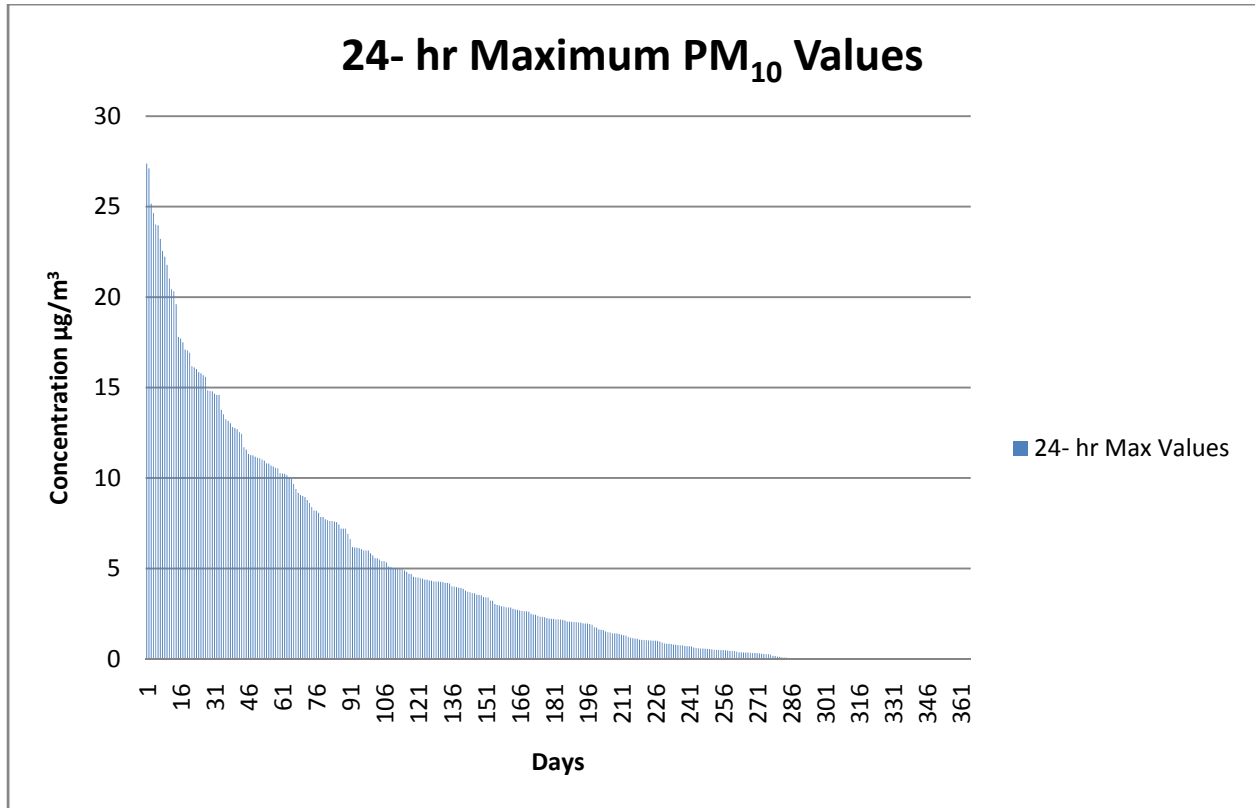
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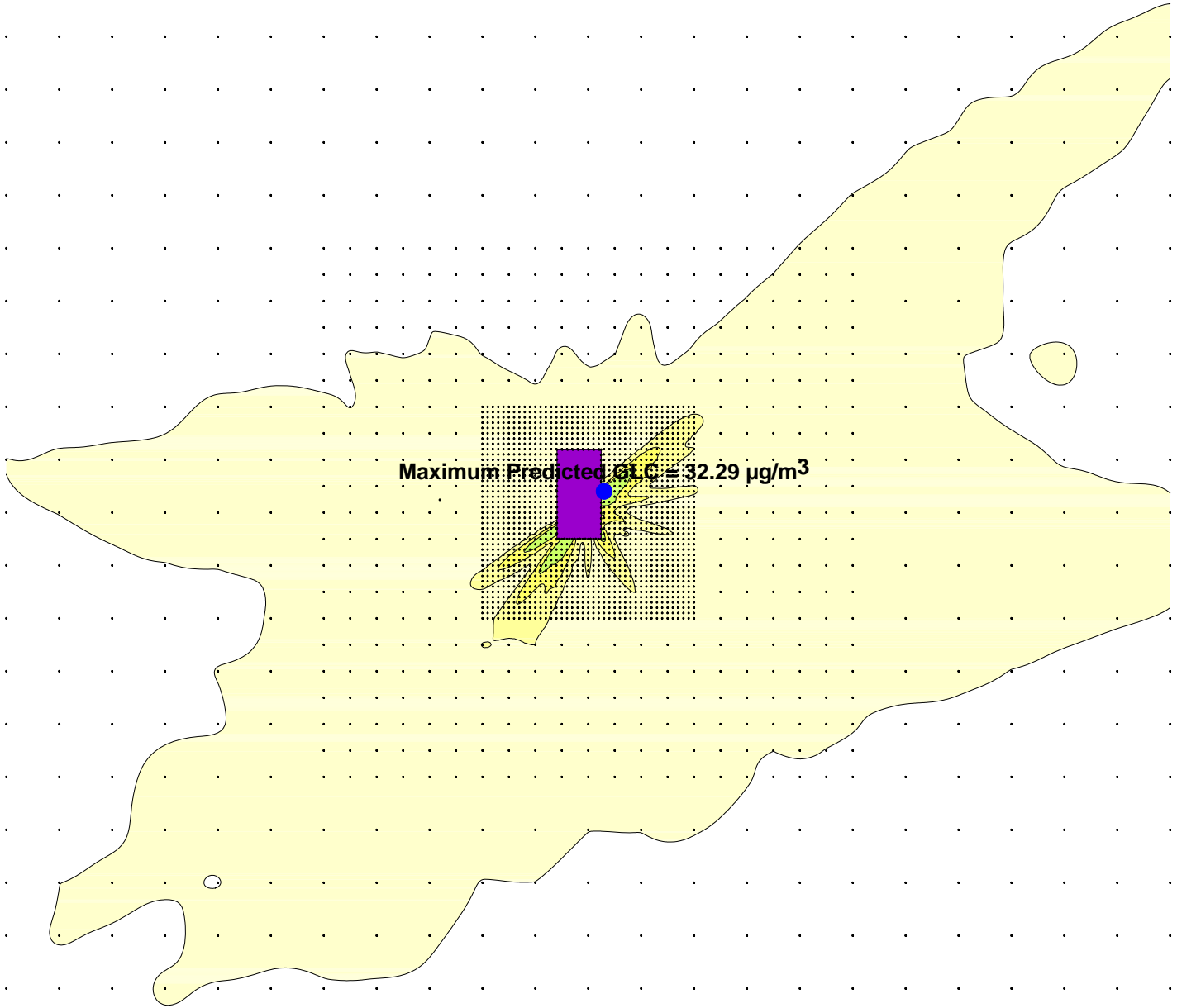
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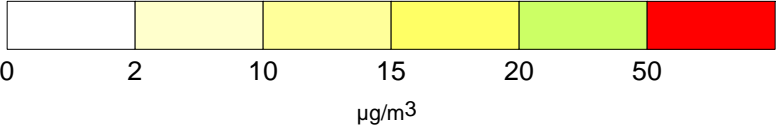
24-hr PM₁₀ Statistical Analysis



Percentile	Max. Value (µg/m ³)
99.9%	27.285
99%	24.245
98%	22.465
95%	17.029
90%	13.107
50%	2.185



PM10 24-hr Maximum Concentrations
 1" = 3,000 m

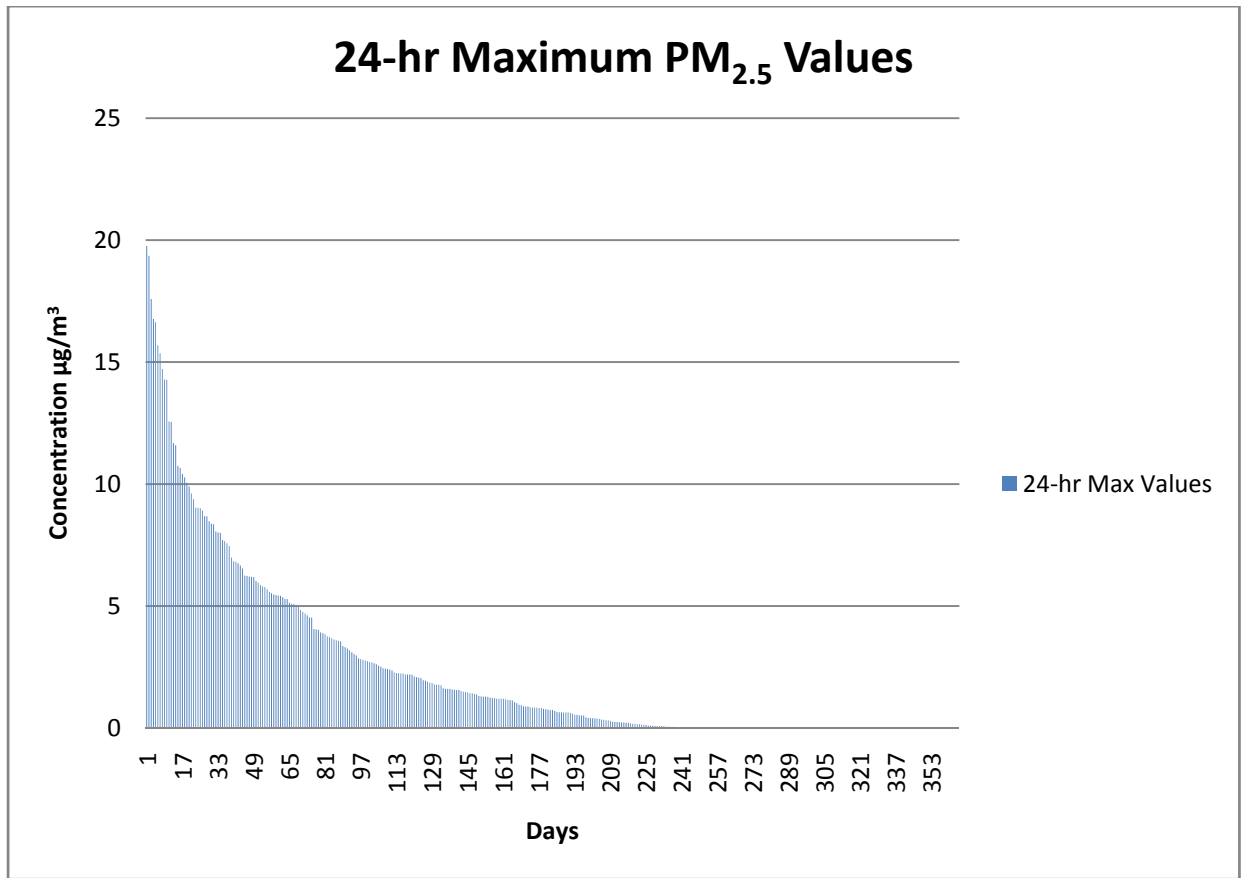


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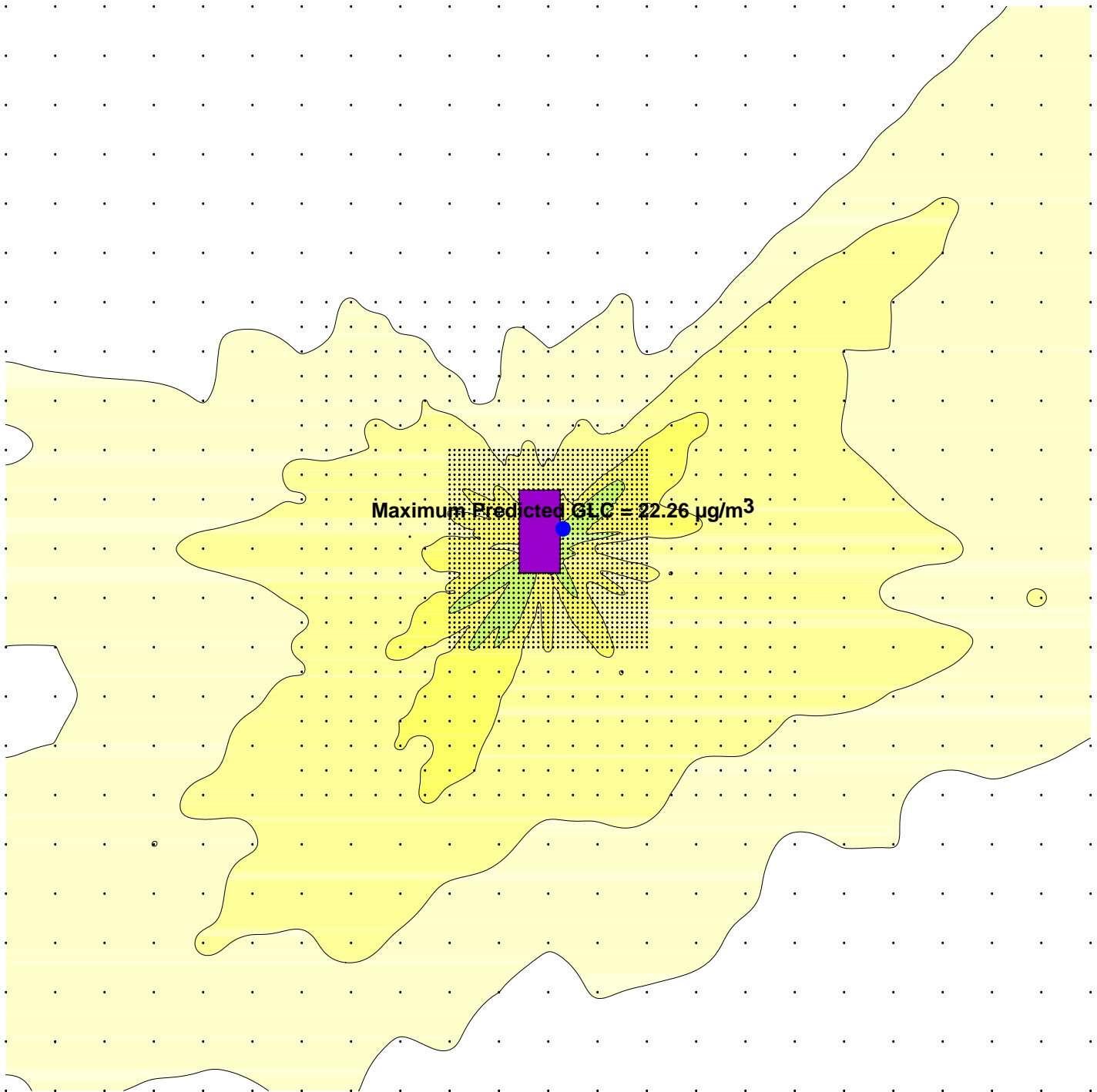
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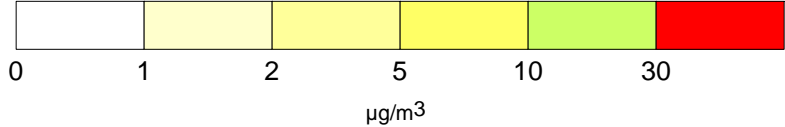
24-hr PM_{2.5} Statistical Analysis



Percentile	Max. Value ($\mu\text{g}/\text{m}^3$)
99.9%	19.616
99%	16.686
98%	14.596
95%	10.019
90%	7.521
50%	0.732



PM2.5 24-hr Maximum Concentrations
 1" = 3,000 m



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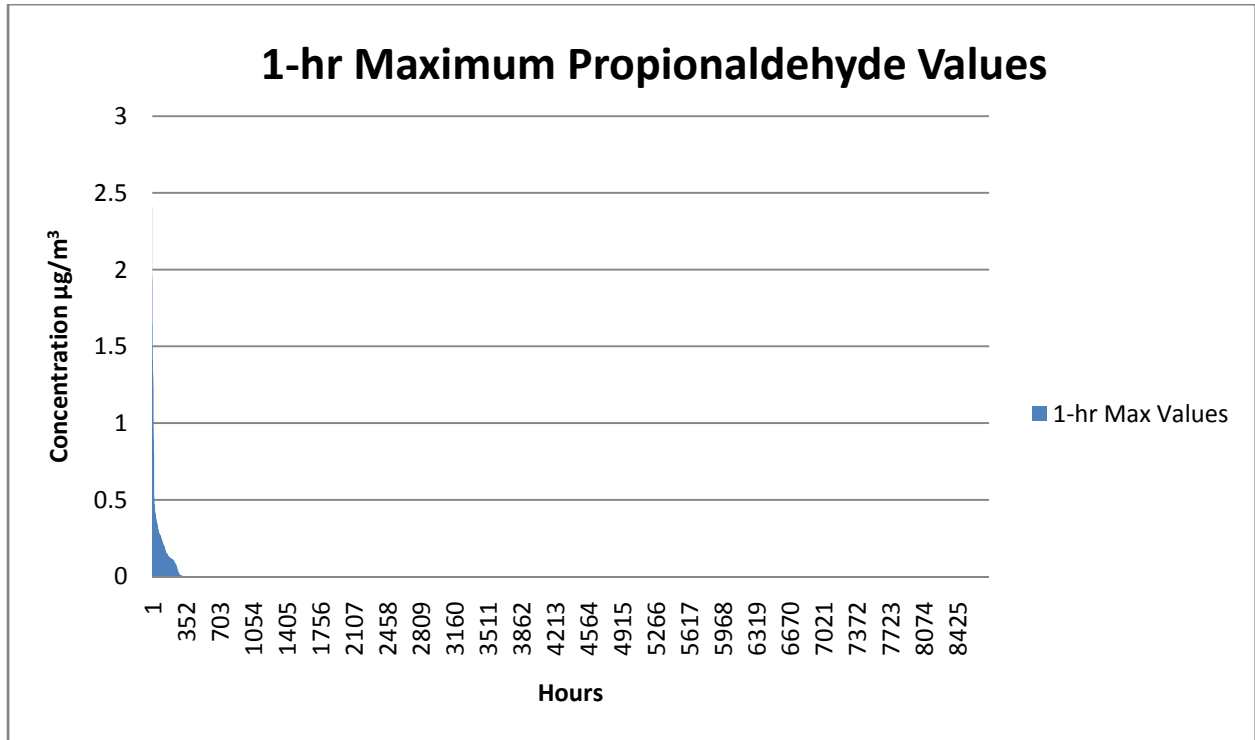
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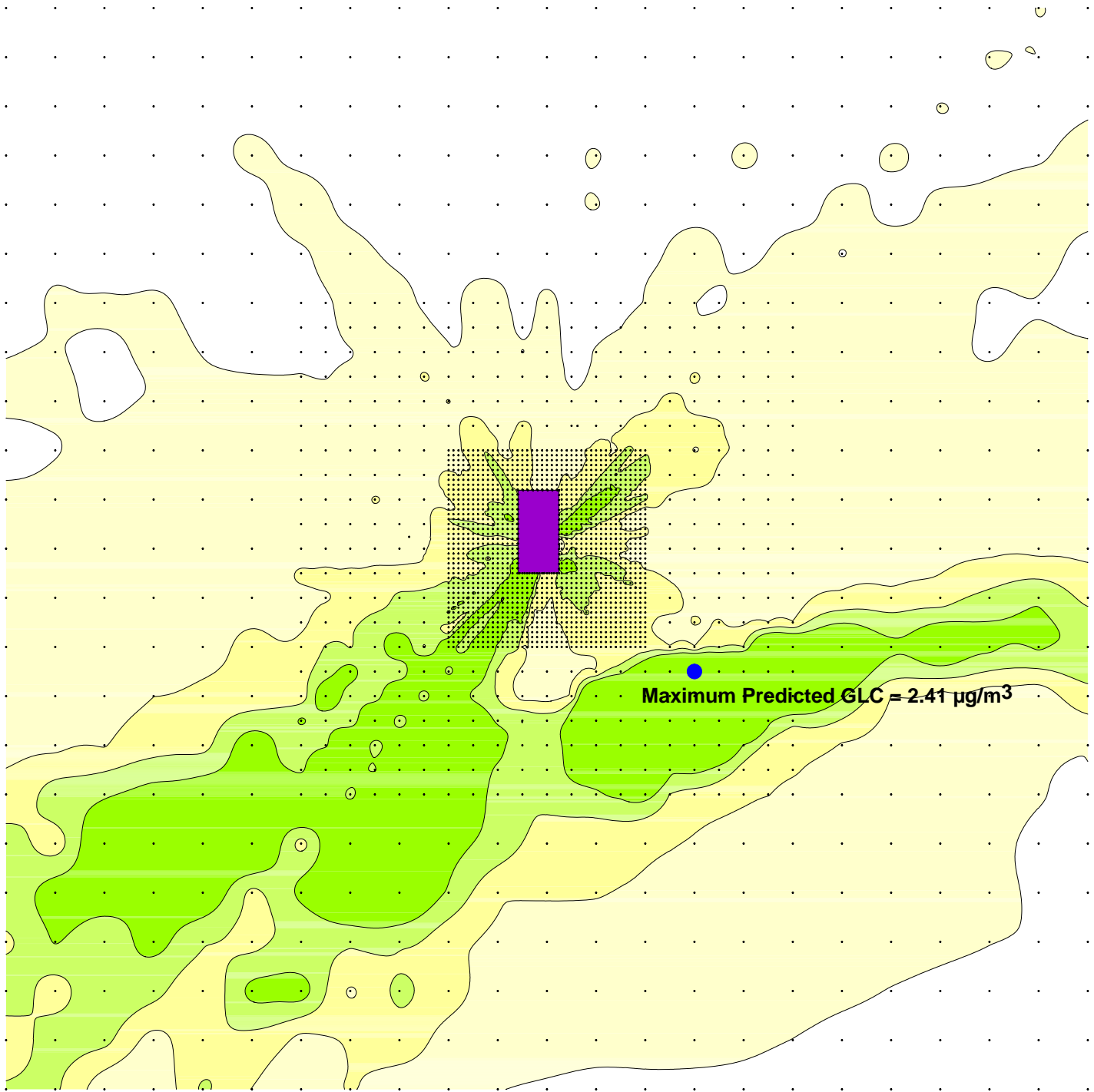
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11

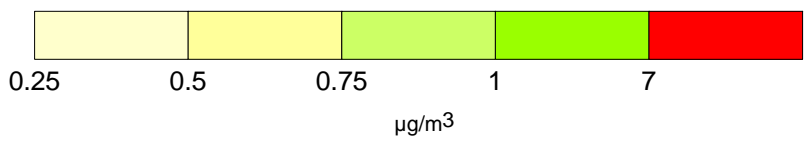
1-hr Propionaldehyde Statistical Analysis



Percentile	Max. Value ($\mu\text{g}/\text{m}^3$)
99.9%	1.247
99%	0.260
98%	0.129
95%	0.000
90%	0.000
50%	0.000



Propionaldehyde 1-hr Maximum Concentrations
 1" = 3,000 m



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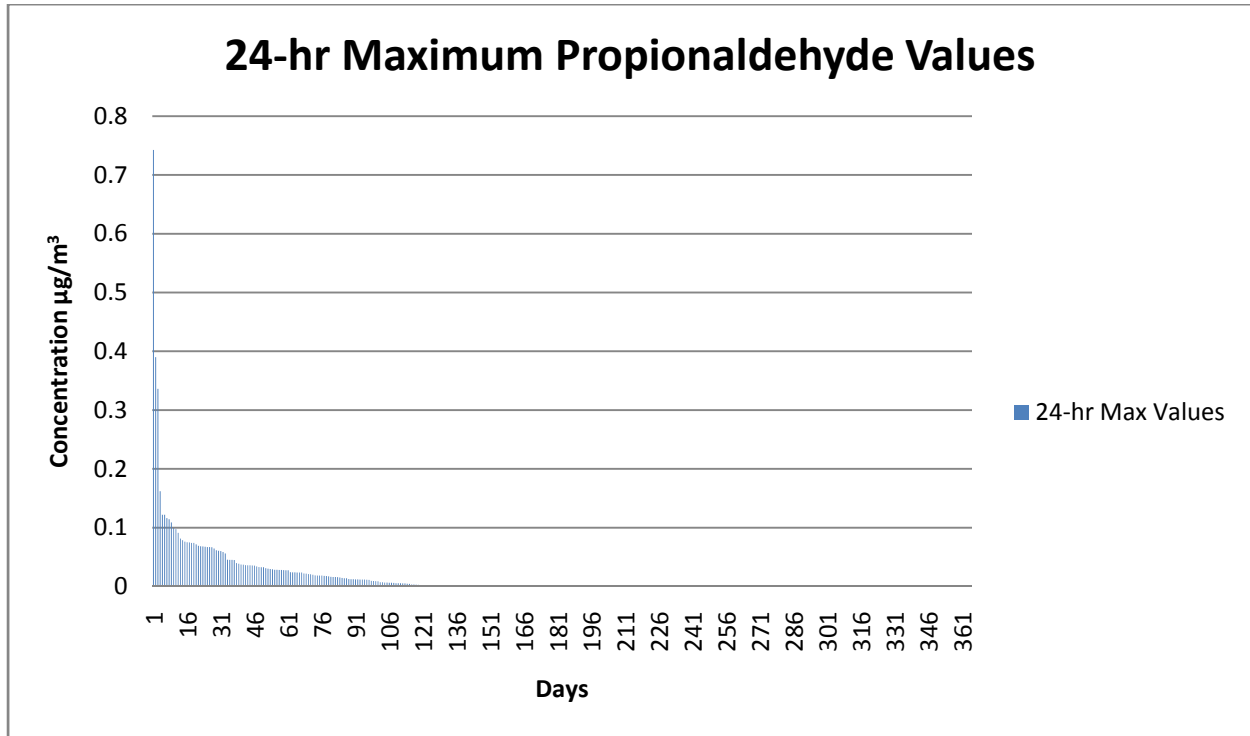
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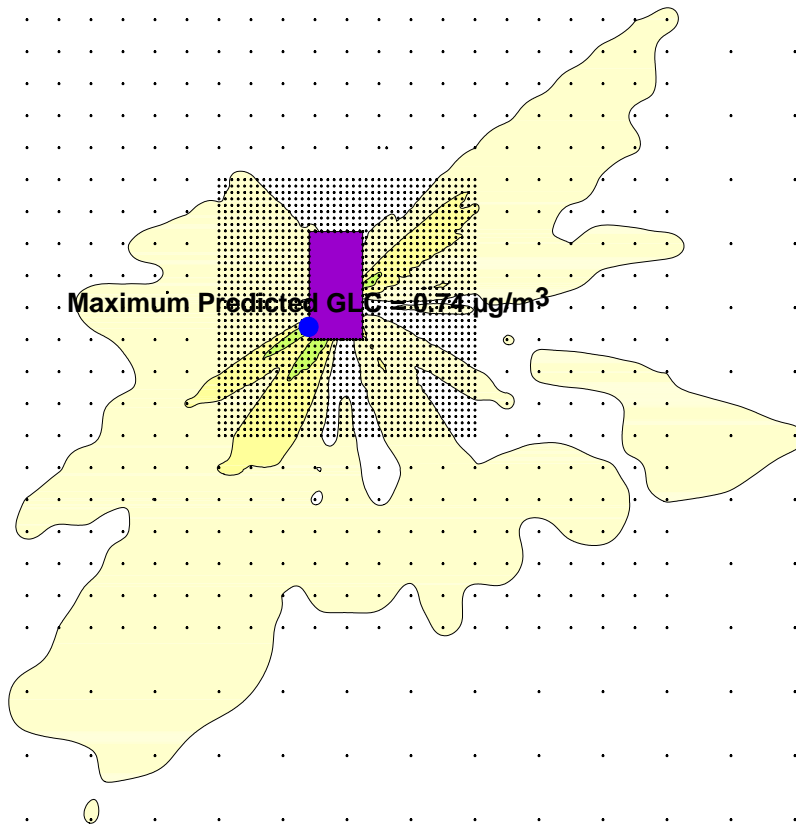
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12

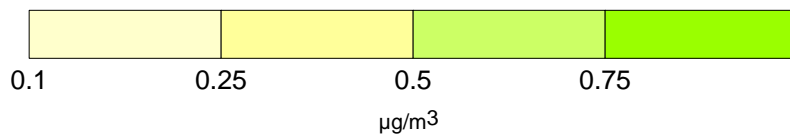
24-hr Propionaldehyde Statistical Analysis



Percentile	Max. Value ($\mu\text{g}/\text{m}^3$)
99.9%	0.614
99%	0.122
98%	0.099
95%	0.068
90%	0.037
50%	0.000



Propionaldehyde 24-hr Maximum Concentrations
 1" = 3,000 m



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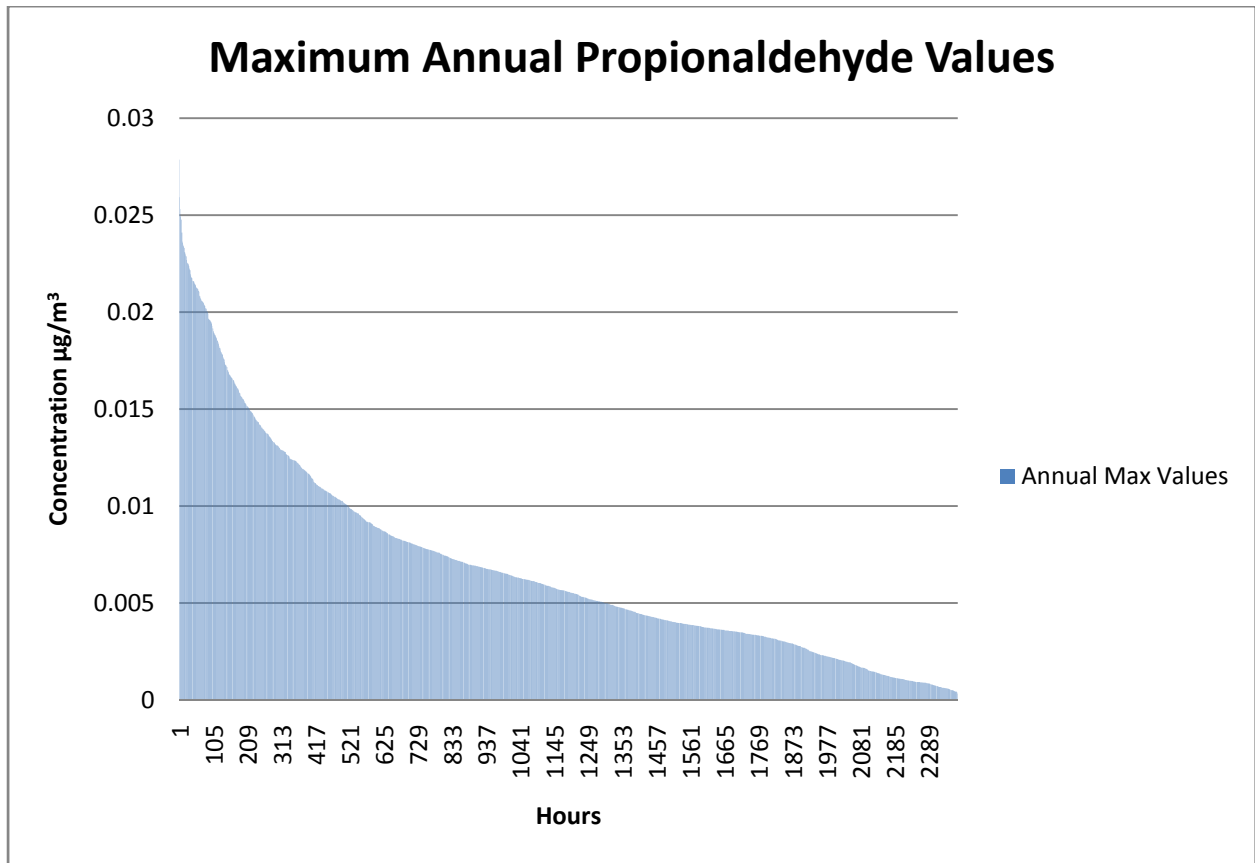
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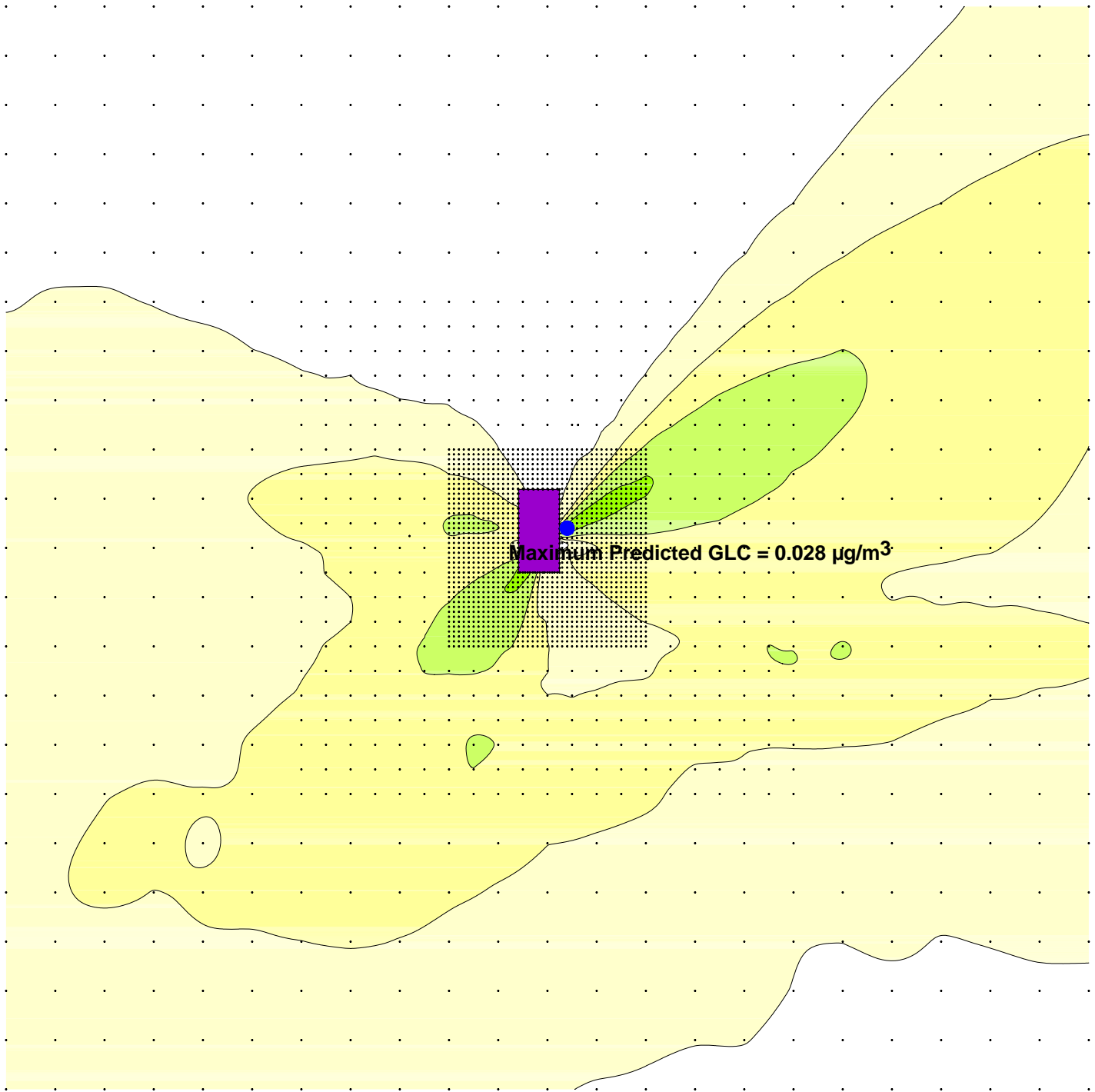
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13

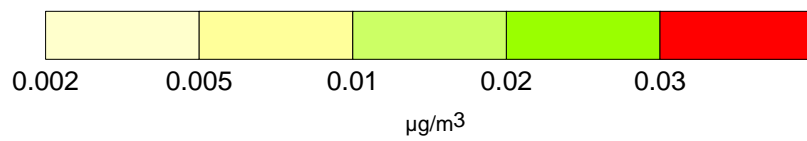
Annual Propionaldehyde Statistical Analysis



Percentile	Max. Value (µg/m ³)
99.9%	0.025
99%	0.023
98%	0.021
95%	0.018
90%	0.014
50%	0.006



Proponaldehyde Annual Maximum Concentrations
1" = 3,000 m



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