Nebraska Public Power District
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NLS2020020
April 15, 2020

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Subject: Annual Radioactive Effluent Release Report
Cooper Nuclear Station, Docket No. 50-298, DPR-46

Dear Sir or Madam:

The purpose of this letter is to transmit to the Nuclear Regulatory Commission (NRC) the Cooper Nuclear Station (CNS) Annual Radioactive Effluent Release Report for the period January 1, 2019, through December 31, 2019. This report is included as Enclosure 1. During the period from January 1, 2019, through December 31, 2019, there were no changes to the Offsite Dose Assessment Manual (ODAM) or the Process Control Program (PCP), and as such, copies of the ODAM and PCP are not being transmitted with this letter. This document is being submitted for NRC use per the requirements of Technical Specification 5.6.3 and CNS ODAM Section D 5.3.

This letter contains no regulatory commitments.

Should you have any questions or require additional information, please contact me at (402) 825-5416.

Sincerely,

for Linda Dewhirst

Linda Dewhirst
Regulatory Affairs and Compliance Manager

/tf

Enclosure 1 - Radioactive Effluent Release Report January 1, 2019 through December 31, 2019

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A009
NRR

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Senior Resident Inspector w/ enclosure
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Cooper Project Manager w/ enclosure
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NLS2020020
Enclosure 1

Enclosure 1

Radioactive Effluent Release Report
January 1, 2019 through December 31, 2019

NEBRASKA PUBLIC POWER DISTRICT

COOPER NUCLEAR STATION

RADIOACTIVE EFFLUENT RELEASE REPORT

January 1, 2019 through December 31, 2019

USNRC Docket 50-298

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INTRODUCTION

This report summarizes meteorological data and doses from radioactive effluents for the Cooper Nuclear Station for the period January through December, 2019. The data presented is consistent with guidance provided in Regulatory Guide 1.21 of the U.S. Nuclear Regulatory Commission (Revision 1, 1974) for reporting meteorological data and radioactive effluent data.

The report is organized into four parts. Appendix A presents the effluent and waste disposal source term data. Appendix B presents a summary of onsite meteorological data for the report period, including atmospheric diffusion estimates and a description of the atmospheric diffusion model. Appendix C presents the doses from liquid and gaseous radioactive effluents. Descriptions of the dose calculation models are also included. Appendix D presents the latest groundwater report.

APPENDIX A

SOURCE TERMS

EFFLUENT AND WASTE DISPOSAL REPORTS

SUPPLEMENTAL INFORMATION

EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT

January 1, 2019 through December 31, 2019

Cooper Nuclear Station effluent and waste disposal data are presented in the format prescribed by Regulatory Guide 1.21. Meteorological data required by Table 4A&B of Regulatory Guide 1.21 is included in the Meteorological Section of the Annual Radioactive Material Release Report - Radioactive Effluents.

Facility Cooper Nuclear Station License DPR-46.

A. Regulatory Limits

1. Gaseous Waste Effluents

a. The dose rates due to radioactive materials released in gaseous effluents offsite shall be limited to the following:

1. Noble Gases: Less than or equal to 500 mrem/yr to the total body and less than or equal to 3000 mrem/yr to the skin.

2. I-131, I-133, tritium, and all radionuclides in particulate form with half-lives greater than or equal to 8 days: Less than or equal to 1500 mrem/yr to any organ.

b. The air dose due to noble gases released in gaseous effluents offsite shall be limited to the following:

1. During any calendar quarter: Less than or equal to 5 mrad from gamma radiation and less than or equal to 10 mrad from beta radiation.

2. During any calendar year: Less than or equal to 10 mrad from gamma radiation and less than or equal to 20 mrad from beta radiation.

c. The dose to a member of the public due to I-131, I-133, and radioactive materials in particulate form with half-lives greater than 8 days in gaseous effluents offsite shall be limited to the following:

1. During any calendar quarter: Less than or equal to 7.5 mrem to any organ.

2. During any calendar year: Less than or equal to 15 mrem to any organ.

2. Liquid Waste Effluents

a. January 1, 2019 through December 31, 2019

The concentration of radioactive material in water offsite due to radioactive liquid effluents shall not exceed the concentration specified in 10 CFR 20 Part 20.1302 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall not exceed 2×10^{-4} uCi/ml total activity. (CNS Technical Specification Amendment 174 Implementation)

b. The dose to a member of the public due to radioactive material in liquid effluents offsite shall be limited to the following:

1. During any calendar quarter: Less than or equal to 1.5 mrem to the total body and less than or equal to 5 mrem to any organ.

2. During any calendar year: Less than or equal to 3 mrem to the total body and less than or equal to 10 mrem to any organ.

B. Maximum Permissible Concentrations

1. Water: Covered in Section A.2.

2. Air: Covered in Section A.1.

C. Average Energy

The average energy (E) of the radionuclide mixtures of fission and activation gases released is not applicable. This information is not utilized for dose or release calculations.

D. Measurements and Approximations of Total Radioactivity

The methods used to measure or approximate the total radioactivity in effluents and to determine radionuclide composition are as follows:

1. Gaseous Effluents

a. Fission and Activation Gases:

Radioactivity and radionuclide composition is determined by laboratory HPGe detector analysis in correlation with continuous gross radioactivity monitoring by a beta scintillation detector in the release pathway.

b. Iodines:

Charcoal cartridges provide continuous sample collection. These cartridges are analyzed for radioactivity and radionuclide composition in the laboratory by a HPGe detector gamma spectrometer.

c. Particulates:

Particulate filters provide continuous sample collection. These filters are analyzed for radioactivity and radionuclide composition in the laboratory by a HPGe detector gamma spectrometer. An aliquot of a filter composite from each release point was analyzed for Sr-89, Sr-90, and gross alpha by an offsite laboratory.

d. Tritium:

A portable sampling apparatus is utilized to collect a quarterly sample of each radioactive vent effluent. These samples are analyzed using a liquid scintillation counter.

e. Carbon-14:

Carbon-14 source term was estimated using 2019 plant operational data and applying the methodology outlined in EPRI Technical Report 1021106 (EPRI, 2010).

2. Liquid Effluents

a. Principal gamma emitters and dissolved and entrained gases:

Each batch of liquid effluent is analyzed for radioactivity and radionuclide composition in the laboratory by a HPGe detector gamma spectrometer. In addition, each batch is monitored for gross gamma radioactivity by a NaI detector in-line with the release pathway.

b. Tritium:

An aliquot of a monthly composite is analyzed using a liquid scintillation counter.

c. Sr-89 and Sr-90:

An aliquot from a quarterly composite is analyzed by an offsite laboratory.

d. Gross alpha:

An aliquot from a monthly composite is analyzed by an offsite laboratory.

e. Fe-55:

An aliquot from a quarterly composite is analyzed by an offsite laboratory.

E. Batch Releases

a. Liquid

1.	Number of batch releases	99	
2.	Total time period for batch releases	25,600	minutes
3.	Maximum time period for batch release	294	minutes
4.	Average time period for batch release	259	minutes
5.	Minimum time period for batch release	33	minutes
6.	Average stream flow during periods of release of effluent into a flowing stream	1.49E+08	liters/minute
7.	Total activity released	4.63E-03	Ci

b. Gaseous

1.	Number of batch releases	0	
2.	Total time period for batch releases	0	minutes
3.	Maximum time period for batch release	0	minutes
4.	Average time period for batch release	0	minutes
5.	Minimum time period for batch release	0	minutes

F. Abnormal Release

a. Liquid

1.	Number of releases:	0	
2.	Total activity released	0	Ci

b. Gaseous

1.	Number of releases:	0	
2.	Total activity released	0	Ci

TABLE 1A
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
GASEOUS EFFLUENTS-SUMMATION OF ALL RELEASES

		UNIT	1st QTR	2nd QTR	3rd QTR	4th QTR	EST. TOTAL ERROR %
A.	Fission and activation gases						
	1. Total release	Ci	7.38E+00	3.36E-01	3.09E-01	3.69E-01	2.0E+01
	2. Average release rate for period	µCi/sec	9.49E-01	4.27E-02	3.89E-02	4.64E-02	
B.	Iodines						
	1. Total iodine 131	Ci	9.93E-06	4.68E-06	1.22E-05	8.30E-06	3.0E+01
	2. Average release rate for period	µCi/sec	1.28E-06	5.95E-07	1.53E-06	1.04E-06	
C.	Particulates						
	1. Particulates with half-lives >8 days	Ci	1.12E-05	1.22E-05	2.76E-05	5.50E-06	5.0E+01
	2. Average release rate for period	µCi/sec	1.43E-06	1.55E-06	3.48E-06	6.92E-07	
	3. Gross alpha radioactivity	Ci	4.71E-07	2.05E-06	1.22E-06	1.55E-06	
D.	Tritium						
	1. Total release	Ci	1.80E+00	1.96E+00	3.37E+00	2.10E+00	3.0E+01
	2. Average release rate for period	µCi/sec	2.31E-01	2.49E-01	4.24E-01	2.64E-01	
E.	Carbon-14						
	1. Total release	Ci	3.01E+00	3.04E+00	3.08E+00	3.08E+00	NA
	2 Release Rate	µCi/sec	3.87E-01	3.87E-01	3.87E-01	3.87E-01	

TABLE 1B
EFFLUENT AND GASEOUS WASTE DISPOSAL ANNUAL REPORT
GASEOUS EFFLUENT-ELEVATED RELEASE
CONTINUOUS MODE *BATCH

	NUCLIDES RELEASED	UNIT	1st QTR	2nd QTR	3rd QTR	4th QTR
1.	Fission gases					
	argon-41	Ci	1.25E-01	2.69E-02	3.08E-03	3.45E-02
	krypton-83m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	krypton-85m	Ci	2.55E-01	0.00E+00	0.00E+00	0.00E+00
	krypton-85	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	krypton-87	Ci	1.21E+00	0.00E+00	0.00E+00	1.96E-02
	krypton-88	Ci	8.12E-01	0.00E+00	0.00E+00	0.00E+00
	krypton-89	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	xenon-131m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	xenon-133m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	xenon-133	Ci	8.83E-02	0.00E+00	0.00E+00	0.00E+00
	xenon-135m	Ci	8.27E-01	5.98E-02	8.68E-02	6.19E-02
	xenon-135	Ci	1.20E+00	1.28E-02	1.76E-02	1.59E-02
	xenon-137	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	xenon-138	Ci	2.83E+00	2.36E-01	2.02E-01	2.37E-01
	Total for period	Ci	7.35E+00	3.36E-01	3.09E-01	3.69E-01
2.	Iodines					
	iodine-131	Ci	9.24E-06	4.14E-06	6.44E-06	6.11E-06
	iodine-132	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	iodine-133	Ci	3.11E-05	1.41E-05	2.29E-05	2.23E-05
	iodine-134	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	iodine-135	Ci	3.10E-06	0.00E+00	0.00E+00	0.00E+00
	Total for period	Ci	4.34E-05	1.82E-05	2.93E-05	2.84E-05

* No batch discharges were made

TABLE 1B
EFFLUENT AND GASEOUS WASTE DISPOSAL ANNUAL REPORT
GASEOUS EFFLUENT-ELEVATED RELEASE (CONTINUED)
CONTINUOUS MODE *BATCH

	NUCLIDES RELEASED	UNIT	1st QTR	2nd QTR	3rd QTR	4th QTR
3.	Particulates					
	sodium-24	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	chromium-51	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	manganese-54	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	manganese-56	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	iron-59	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	cobalt-58	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	cobalt-60	Ci	0.00E+00	0.00E+00	0.00E+00	9.10E-08
	zinc-65	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	zinc-69	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	rubidium-88	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	rubidium-89	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	strontium-89	Ci	3.80E-07	1.27E-07	2.36E-07	2.28E-07
	strontium-90	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	strontium-91	Ci	3.59E-05	2.58E-06	5.72E-06	4.90E-06
	yttriuim-91m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	yttriuim-93	Ci	4.42E-06	0.00E+00	0.00E+00	0.00E+00
	niobium-95	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	ruthenium-103	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	silver-110m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	antimony-124	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	antimony-125	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	tellurium-132	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	cesium-137	Ci	1.04E-07	0.00E+00	3.94E-08	2.07E-08
	cesium-138	Ci	0.00E+00	1.83E-04	8.57E-05	0.00E+00
	barium-139	Ci	4.90E-04	7.04E-04	1.07E-03	6.41E-04
	barium-140	Ci	6.44E-06	8.83E-08	0.00E+00	1.70E-07
	lanthanum-140	Ci	5.03E-06	6.63E-08	2.67E-07	8.86E-08
	cerium-144	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	praesodymium-144	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total for period	Ci	5.42E-04	8.90E-04	1.16E-03	6.46E-04
	Total for period with >8d half life	Ci	6.92E-06	2.15E-07	2.75E-07	5.10E-07

* No batch discharges were made

TABLE 1C
EFFLUENT AND GASEOUS WASTE DISPOSAL ANNUAL REPORT
GASEOUS EFFLUENT-BUILDING VENT RELEASE
CONTINUOUS MODE *BATCH

	NUCLIDES RELEASED	UNIT	1st QTR	2nd QTR	3rd QTR	4th QTR
1.	Fission gases					
	krypton-83m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	krypton-85m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	krypton-85	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	krypton-87	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	krypton-88	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	krypton-89	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	xenon-131m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	xenon-133m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	xenon-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	xenon-135m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	xenon-135	Ci	2.93E-02	0.00E+00	0.00E+00	0.00E+00
	xenon-137	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	xenon-138	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total for period	Ci	2.93E-02	0.00E+00	0.00E+00	0.00E+00
2.	Iodines					
	iodine-131	Ci	6.90E-07	5.39E-07	5.76E-06	2.19E-06
	iodine-132	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	iodine-133	Ci	3.92E-06	6.27E-06	2.11E-05	9.14E-06
	iodine-134	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	iodine-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total for period	Ci	4.61E-06	6.81E-06	2.69E-05	1.13E-05

* No batch discharges were made.

TABLE 1C
EFFLUENT AND GASEOUS WASTE DISPOSAL ANNUAL REPORT
GASEOUS EFFLUENT-BUILDING VENT RELEASE (CONTINUED)
CONTINUOUS MODE *BATCH

	NUCLIDES RELEASED	UNIT	1st QTR	2nd QTR	3rd QTR	4th QTR
3.	Particulates					
	sodium-24	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	chromium-51	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	manganese-54	Ci	5.86E-08	2.55E-07	0.00E+00	0.00E+00
	manganese-56	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	cobalt-57	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	cobalt-58	Ci	2.02E-07	0.00E+00	0.00E+00	0.00E+00
	iron-59	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	cobalt-60	Ci	3.89E-06	1.11E-05	2.65E-05	4.36E-06
	zinc-65	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	rubidium-89	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	strontium-89	Ci	0.00E+00	0.00E+00	0.00E+00	4.49E-07
	strontium-90	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	strontium-91	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	strontium-92	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	yttrium-91m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	niobium-95	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	technetium-99m	Ci	7.20E-07	0.00E+00	0.00E+00	0.00E+00
	ruthenium-103	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	silver-110m	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	antimony-124	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	cesium-137	Ci	7.77E-08	5.89E-07	8.57E-07	1.78E-07
	cesium-138	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	barium-139	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	barium-140	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	lanthanum-140	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	cerium-141	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	cerium-144	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	praseodymium-144	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Total for period	Ci	4.95E-06	1.19E-05	2.74E-05	4.99E-06
	Total for period >8 day half life	Ci	4.23E-06	1.19E-05	2.74E-05	4.99E-06

* No batch discharges were made

TABLE 2A
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
LIQUID EFFLUENTS-SUMMATION OF ALL RELEASES

		UNIT	1st QTR	2nd QTR	3rd QTR	4th QTR	EST. TOTAL ERROR %
A.	Fission and activation products						
	1. Total release (not including tritium, gases or alpha)	Ci	1.98E-03	9.83E-04	7.07E-04	9.58E-04	2.0E+01
	2. Average diluted concentration during period	µCi/ml	5.87E-10	6.47E-11	4.53E-11	7.79E-11	
B.	Tritium						
	1. Total release	Ci	6.45E-01	1.45E+00	1.50E+00	1.62E+00	2.0E+01
	2. Average diluted concentration during period	µCi/ml	1.91E-07	9.54E-08	9.62E-08	1.32E-07	
C.	Dissolved and entrained gases						
	1. Total release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.0E+01
	2. Average diluted concentration during period	µCi/ml	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
D.	Gross alpha radioactivity						
	1. Total release	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.0E+01
E.	Volume of waste released (prior to dilution)	liters	6.79E+05	1.72E+06	1.51E+06	1.93E+06	1.0E+01
F.	Volume of dilution water used during period	liters	3.38E+09	1.52E+10	1.56E+10	1.23E+10	1.0E+01

TABLE 2B
EFFLUENT AND WASTE DISPOSAL ANNUAL REPORT
LIQUID EFFLUENTS (CONTINUED)
CONTINUOUS MODE *BATCH MODE

NUCLIDES RELEASED	UNIT	1st QTR	2nd QTR	3rd QTR	4th QTR
sodium-24	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
chromium-51	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
manganese-54	Ci	2.91E-04	1.17E-05	1.06E-05	2.50E-06
iron-55	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cobalt-57	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cobalt-58	Ci	1.65E-05	0.00E+00	0.00E+00	0.00E+00
iron-59	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cobalt-60	Ci	1.07E-03	4.97E-04	3.64E-04	5.64E-04
zinc-65	Ci	2.63E-04	0.00E+00	0.00E+00	0.00E+00
strontium-89	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
strontium-90	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
strontium-92	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
niobium-97	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
technetium-99m	Ci	9.54E-07	0.00E+00	0.00E+00	0.00E+00
antimony-124	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
iodine-131	Ci	0.00E+00	0.00E+00	0.00E+00	2.76E-05
iodine-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cesium-134	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
cesium-137	Ci	3.41E-04	4.74E-04	3.32E-04	3.64E-04
cerium-144	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total for period	Ci	1.98E-03	9.83E-04	7.07E-04	9.58E-04
xenon-133	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00
xenon-135	Ci	0.00E+00	0.00E+00	0.00E+00	0.00E+00

* No continuous mode discharges were made

TABLE 3

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS
PERIOD: January 1, 2019 through December 31, 2019

A. Solid Waste Shipped Offsite for Burial or Disposal (Not Irradiated Fuel)

1. Type of Waste

		Unit	12 Month Period	Est. Total Error %
a.	Spent resins, filter sludges, evaporator bottoms, etc.	m^3	38.92	N/A
		Ci	8.89E+02	15%
b.	Dry compressible waste, contaminated equip, etc.	m^3	81.30	N/A
		Ci	1.95E+00	25%
c.	Irradiated components, control rods, etc.	m^3	0.28	N/A
		Ci	4.63E+00	N/A
d.	Other	m^3	0.00	N/A
		Ci	0.00E+00	N/A

2. Estimate of Major Nuclide Composition (By Type of Waste), Percent %
   a. Resin

americium-241	1.12E-04	iron-59	2.21E-02
antimony-124	8.91E-03	lanthanum-140	6.88E-04
barium-140	6.57E-04	maganese-54	5.09E+00
carbon-14	1.80E-02	nickel-63	1.57E+00
cesuim-134	0.00E+00	niobium-95	0.00E-00
cesium-137	4.68E-02	plutonium-238	1.20E-04
chromium-51	9.42E-02	plutonium-239	1.48E-04
cobalt-57	1.73E-02	plutonium-241	1.07E-02
cobalt-58	1.00E+00	silver-110m	2.60E-01
cobalt-60	5.74E+01	strontium-89	5.25E-02
curium-242	7.18E-05	strontium-90	4.52E-03
curium-244	7.45E-05	technetium-99	8.31E-03
iodine-129	1.90E-04	tritium	5.30E-03
iodine-131	0.00E-00	zinc-65	5.72E+00
iron-55	2.87E+01		

TABLE 3

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS (continued)
PERIOD: January 1, 2019 through December 31, 2019

b. DAW

americium-241	7.51E-05	nickel-63	1.03E+00
antimony-124	3.33E-01	niobium-94	0.00E-00
carbon-14	3.76E-03	niobium-95	2.85E-01
cesium-137	4.69E-02	plutonium-238	8.07E-05
chromium-51	3.08E+01	plutonium-239	9.85E-05
cobalt-58	1.92E+00	plutonium-241	7.37E-03
cobalt-60	3.83E+01	silver-110m	8.55E-02
curium-242	4.94E-05	strontium-89	3.77E-03
curium-244	5.06E-05	strontium-90	3.64E-02
iodine-129	5.16E-04	technetium-99	5.53E-03
iron-55	1.92E+01	tritium	3.91E-03
iron-59	1.45E+00	zinc-65	2.46E+00
manganese-54	3.83E+00	zirconium-95	2.03E-01
nickel-59	0.00E-00		

c Other

americium-241	2.46E-05	nickel-63	4.86E+00
antimony-124	7.02E-02	niobium-94	7.17E-05
carbon-14	8.23E-03	niobium-95	0.00E-00
cesium-137	1.27E-06	plutonium-238	2.61E-05
chromium-51	1.46E+00	plutonium-239	3.20E-05
cobalt-58	4.27E-01	plutonium-241	2.31E-03
cobalt-60	5.70E+01	silver-110m	5.18E-02
curium-242	1.42E-05	strontium-89	8.46E-03
curium-244	4.25E-10	strontium-90	9.65E-04
iodine-129	1.30E-04	technetium-99	1.78E-03
iron-55	3.45E+01	tritium	4.71E-06
iron-59	5.83E-02	zinc-65	8.51E-01
manganese-54	5.48E-01	zirconium-95	0.00E-00
nickel-59	9.13E-02	tin-113	2.85E-03
curium-243	1.60E-05	antimony-125	1.66E-02

TABLE 3

SOLID WASTE AND IRRADIATED FUEL SHIPMENTS (continued)
PERIOD: January 1, 2019 through December 31, 2019

3. Solid Waste Disposition

Number of Shipments	Mode of Transportation	Destination
6	Exclusive Use	UT
8	Exclusive Use	TN

4. Solidification Agent

None

B. Irradiated Fuel Shipments (Disposition)

Number of Shipments	Mode of Transportation	Destination
None	NA	NA

GASEOUS RADIOACTIVE WASTES
CUMULATIVE DOSE DATA

			1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Annual
A.	Maximum gamma air dose						
	Site boundary*		ESE	NNE	N	N	N
	1. Total	mrad	2.55E-05	6.47E-07	2.32E-06	9.08E-07	5.91E-05
	Percent of Technical Specification						
	2. Limit		0.00%	0.00%	0.00%	0.00%	0.00%
	Most Exposed Resident*		NW	NW	NW	NW	NW
	1. Total	mrad	3.05E-04	2.77E-05	2.46E-05	1.18E-05	4.82E-04
	Percent of Technical Specification						
	2. Limit		0.00%	0.00%	0.00%	0.01%	0.01%
B.	Maximum beta air dose						
	Site boundary*		ESE	NNE	N	N	N
	1. Total	mrad	2.63E-05	3.14E-07	1.13E-06	4.84E-07	5.52E-05
	Percent of Technical Specification						
	2. Limit		0.00%	0.00%	0.00%	0.00%	0.00%
	Most Exposed Resident*		NW	NW	NW	NW	NW
	1. Total	mrad	1.95E-04	1.34E-05	1.19E-05	6.29E-06	2.98E-04
	Percent of Technical Specification						
	2. Limit		0.00%	0.00%	0.00%	0.00%	0.00%
C.	Maximum organ dose due to I-131, I-133, and particulates (>8 day half lives)						
	Site boundary*		ESE	NNE	N	N	N
	1. Total	mrem	4.59E-04	8.97E-04	7.90E-03	2.15E-03	9.03E-03
	Percent of Technical Specification						
	2. Limit		0.01%	0.01%	0.11%	0.03%	0.06%
	3. Organ		Thyroid	Thyroid	Thyroid	Thyroid	Thyroid
	4. Exposed Individual		Infant	Infant	Infant	Infant	Infant
	Most Exposed Resident*		NW	NW	NW	NW	NW
	1. Total	mrem	4.58E-04	6.00E-04	2.25E-03	5.71E-04	3.98E-03
	Percent of Technical Specification						
	2. Limit		0.01%	0.01%	0.03%	0.01%	0.03%
	3. Organ		Thyroid	Thyroid	Thyroid	Thyroid	Thyroid
	4. Exposed Individual		Infant	Infant	Infant	Infant	Infant

D. Maximum organ dose rate due to I-131, I-133, tritium, and particulates (>8 day half-lives) was 0.00903 mrem/year which was 0.06% of the Technical Specification Limit.

E. All radioactive noble gas effluent monitors were set to automatically alarm when the monitor alarm set point, determined as specified in the Offsite Dose Assessment Manual (ODAM), was exceeded. This is required to ensure that the 500 mrem/yr to the total body and the 3000 mrem/yr to the skin limits are not exceeded.

**Resident and Site Boundary Key: N is 0.67 miles North, NW residence is 0.90 miles Northwest, ESE is 0.54 miles East-Southeast, and NNE is 0.60 miles North-Northeast.*

GASEOUS RADIOACTIVE WASTES (Continued)
CUMULATIVE DOSE DATA

F. Maximum organ dose due to Carbon-14*		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Annual
1. Total	mrem	2.49E-01	1.93E-01	2.26E-01	1.78E-01	8.40E-01
2. Percent of Technical Specification Limit		2.49%	1.93%	2.26%	1.78%	4.20%
3. Organ	mrem	Bone	Bone	Bone	Bone	Bone
4. Exposed Individual		Child	Child	Child	Child	Child

*Maximum organ dose due to Carbon-14 is based on summation of organ dose pathways from the nearest garden, nearest meat animal, and nearest milk animal. Inhalation pathway was negligible.

LIQUID RADIOACTIVE WASTES
CUMULATIVE DOSE DATA

A. Maximum whole body dose		1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Annual
1. Total	mrem	8.49E-02	2.49E-02	1.76E-02	3.78E-02	1.65E-01
2. Percent of Technical Specification Limit		5.66%	1.66%	1.17%	2.52%	5.51%
B. Maximum Organ Dose						
1. Total	mrem	1.39E-01	3.89E-02	2.71E-02	3.63E-02	2.41E-01
2. Percent of Technical Specification Limit		2.78%	0.78%	0.54%	0.73%	2.41%

SUPPLEMENTAL INFORMATION

A. Unplanned Releases, Leaks, or Spills:

None

B. NPPD Initiated Changes to the Process Control Program:

None.

C. Changes to the Offsite Dose Assessment Manual:

None.

D. Reports Required by the Offsite Dose Assessment Manual:

1) The following is being reported per the requirements of ODAM Specification D3.3.1, Condition B, Required Action B.2.2 due to these conditions existing for a period of greater than 31 days during the January 1 - December 31, 2019 reporting period. During these occurrences, Service Water (SW) samples were manually collected and analyzed for gamma radioactivity every 24 hours.

a) Both SW radiation monitors were declared inoperable and their respective detectors preemptively removed on 03/13/2019 at 11:00 to protect them from impending water intrusion caused by Missouri River flooding. Once flooding conditions subsided, SW radiation monitor detectors were promptly reinstalled and declared operable on 04/22/2019 at 22:15. This occurrence lasted 40.47 days. (CR-2019-02255)

b) Both SW radiation monitors were declared inoperable and their respective detectors preemptively removed on 05/24/2019 at 19:30 to protect them from impending water intrusion caused by Missouri River flooding. Once flooding conditions subsided, SW radiation monitor detectors were promptly reinstalled and declared operable on 6/27/2019 at 23:10. This occurrence lasted 35.15 days. (CR-2019-03461)

c) Both SW radiation monitors were declared inoperable and their respective detectors preemptively removed on 09/18/2019 at 09:00 to protect them from impending water intrusion caused by Missouri River flooding. Once flooding conditions subsided, SW radiation monitor detectors were promptly reinstalled and declared operable on 11/06/2019 at 20:41. This occurrence lasted 49.49 days. (CR-2019-05466)

APPENDIX B

METEOROLOGY

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ATMOSPHERIC DIFFUSION MODEL	B324

METEOROLOGICAL DATA SUMMARIES

Meteorological data collected onsite for the period January 1, 2019 through December 31, 2019, were reduced, validated, summarized for analysis, and included in appropriate dose calculations. Hourly data summaries are provided for all pertinent parameters and for the joint frequency distributions (JFD's) of wind speed and wind direction by atmospheric stability class.

DATA RECOVERY

Data recovery statistics are provided in Table 1 for all pertinent meteorological parameters. Average data recovery for all parameters in 2019 was approximately 99.9%.

		Average Data Recovery
January 1 - March 31, 2019	(Q1)	99.9%
April 1 - June 30, 2019	(Q2)	99.9%
First Semiannual Period - January 1 - June 30, 2019	(SEM1)	99.9%
July 1 - September 30, 2019	(Q3)	99.9%
October 1 - December 31, 2019	(Q4)	99.2%
Second Semiannual Period - July 1 - December 31, 2019	(SEM2)	99.6%
Annual Period - January 1 - December 31, 2019	(ANN)	99.8%

WIND AT 100-METER LEVEL AND 10-METER LEVEL

	Predominant Wind Direction at 100m Level		Predominant Wind Direction at 10m Level	
Q1	Northwest	12.2%	North	13.7%
Q2	South	12.0%	South	11.3%
SEM1	North	10.7%	North	12.2%
Q3	South	20.0%	South	20.3%
Q4	South	13.3%	South	15.9%
SEM2	South	16.7%	South	18.1%
ANN	South	12.5%	South	13.5%

	Mean Wind Speed at 100m Level	Mean Wind Speed at 10m Level
Q1	14.1 MPH	9.1 MPH
Q2	13.8 MPH	9.2 MPH
SEM1	14.0 MPH	9.2 MPH
Q3	12.4 MPH	7.6 MPH
Q4	14.1 MPH	8.3 MPH
SEM2	13.2 MPH	8.0 MPH
ANN	13.6 MPH	8.5 MPH

	Maximum Hourly Average Wind Speed/(Date at 100m Level)	Maximum Hourly Average Wind Speed/(Date at 10m Level)
Q1	46.9 MPH/(19/03/30)	31.0 MPH/(19/01/19)
Q2	40.3 MPH/(19/06/15)	28.9 MPH/(19/04/21)
SEM1	46.9 MPH/(19/03/30)	31.0 MPH/(19/01/19)
Q3	49.5 MPH/(19/08/07)	20.7 MPH/(19/08/07)
Q4	36.8 MPH/(19/12/01)	28.1 MPH/(19/11/11)
SEM2	49.5 MPH/(19/08/07)	28.1 MPH/(19/11/11)
ANN	49.5 MPH/(19/08/07)	31.0 MPH/(19/01/19)

TEMPERATURE AT 10-METER LEVEL

	Mean Hourly Average Temperature	Average Daily Maximum	Average Daily Minimum
Q1	27.9 Degrees F	35.4 Degrees F	20.8 Degrees F
Q2	63.5 Degrees F	71.7 Degrees F	55.4 Degrees F
SEM1	45.8 Degrees F	53.7 Degrees F	38.2 Degrees F
Q3	75.6 Degrees F	82.9 Degrees F	68.9 Degrees F
Q4	40.9 Degrees F	49.8 Degrees F	33.2 Degrees F
SEM2	58.3 Degrees F	66.4 Degrees F	51.1 Degrees F
ANN	52.1 Degrees F	60.1 Degrees F	44.7 Degrees F

	Maximum Temperature (Date)	Minimum Temperature (Date)
Q1	71.7 Degrees F (19/03/27)	-12.2 Degrees F (19/01/30)
Q2	93.7 Degrees F (19/06/28)	30.6 Degrees F (19/04/13)
SEM1	93.7 Degrees F (19/06/28)	-12.2 Degrees F (19/01/30)
Q3	95.3 Degrees F (19/07/17)	53.2 Degrees F (19/09/28)
Q4	87.8 Degrees F (19/10/01)	6.2 Degrees F (19/11/12)
SEM2	95.3 Degrees F (19/07/17)	6.2 Degrees F (19/11/12)
ANN	95.3 Degrees F (19/07/17)	-12.2 Degrees F (19/01/30)

PRECIPITATION

	Total Precipitation	Maximum Daily Precipitation Total/(Date)	Maximum Hourly Precipitation Total/(Date)
Q1	5.75 Inches	0.88 Inches (19/03/13)	0.40 Inches (19/03/13)
Q2	16.62 Inches	1.73 Inches (19/05/23)	0.84 Inches (19/05/24)
SEM1	22.37 Inches	1.73 Inches (19/05/23)	0.84 Inches (19/05/24)
Q3	13.29 Inches	2.12 Inches (19/09/22)	1.02 Inches (19/07/16)
Q4	4.30 Inches	1.21 Inches (19/10/01)	0.53 Inches (19/10/10)
SEM2	17.59 Inches	2.12 Inches (19/09/22)	1.02 Inches (19/07/16)
ANN	39.96 Inches	2.12 Inches (19/09/22)	1.02 Inches (19/07/16)

ATMOSPHERIC STABILITY

Atmospheric stability is determined through classification of differential temperature data based on JFD of the 100-meter wind and the delta T (100m - 10m) stability data.

	Unstable Conditions Classes A-C	Neutral Conditions Class D	Stable Conditions Classes E-G
Q1	<1%	62%	38%
Q2	0%	66%	34%
SEM1	<1%	64%	36%
Q3	<1%	62%	38%
Q4	<1%	52%	48%
SEM2	<1%	57%	43%
ANN	<1%	60%	40%

TABLE 1. Meteorological Data Recovery

Data Recovery (% of total Observations)

	January-March 2019	April-June 2019	January-June 2019	July-Sept. 2019	October-Dec. 2019	July-Dec. 2019	January-Dec. 2019
100m wind speed	99.9	99.9	99.9	99.9	95.1	97.5	98.7
100m wind direction	99.9	99.9	99.9	99.9	95.1	97.5	98.7
100m ambient temperature	100.0	100.0	100.0	99.9	99.9	99.9	99.9
60m wind speed	100.0	100.0	100.0	99.9	100.0	99.9	99.9
60m wind direction	100.0	100.0	100.0	99.9	100.0	99.9	99.9
60m ambient temperature	100.0	100.0	100.0	99.9	99.9	99.9	99.9
10m wind speed	100.0	100.0	100.0	99.9	100.0	99.9	99.9
10m wind direction	100.0	100.0	100.0	99.9	100.0	99.9	99.9
10m ambient temperature	100.0	100.0	100.0	99.9	99.9	99.9	99.9
10m dew point	100.0	99.6	99.8	99.5	99.7	99.6	99.7
100m-10m delta T	100.0	100.0	100.0	99.9	99.9	99.9	99.9
100m-60m delta T	100.0	100.0	100.0	99.9	99.9	99.9	99.9
60m-10m delta T	100.0	100.0	100.0	99.9	99.9	99.9	99.9
Precipitation	100.0	100.0	100.0	99.9	100.0	99.9	99.9
100m JFD	100.0	100.0	100.0	99.9	99.9	99.9	99.9
10m JFD	100.0	100.0	100.0	99.9	99.9	99.9	99.9

JFD - Joint Frequency Distribution of wind speed, wind direction and atmospheric stability.

MONTHLY SUMMARY TABLES OF HOURLY METEOROLOGICAL DATA

The tables presented in this section provide a summary of hourly averages of measured meteorological parameters. The tables provide summaries by month for the annual period January through December, 2019. Summaries for the first quarter, second quarter, third quarter, fourth quarter, and semiannual periods are also provided. The parameters provided are listed below.

* 10 meter ambient temperature.

* Wind direction frequencies at 10 meters and 100 meters.

* Precipitation.

Any missing or non-measured data are indicated by a field of 9's.

10-Meter Ambient Temperature

and

10-Meter Dew Point Temperature

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY JAN-MAR 2019

MONTHLY HOUR AVERAGES FOR THE PERIOD

JANUARY

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	31	24.2	31	20.5	31	85.5	31	3.4	31	23.0
2	31	23.7	31	20.2	31	86.1	31	3.4	31	22.7
3	31	23.6	31	20.0	31	86.4	31	3.4	31	22.5
4	31	23.3	31	19.8	31	86.4	31	3.4	31	22.3
5	31	23.3	31	19.7	31	85.8	31	3.4	31	22.3
6	31	23.0	31	19.4	31	85.6	31	3.3	31	22.0
7	31	22.5	31	18.9	31	85.8	31	3.2	31	21.5
8	31	22.1	31	18.6	31	86.2	31	3.2	31	21.2
9	31	22.2	31	18.2	31	84.8	31	3.1	31	21.1
10	31	23.2	31	18.2	31	81.3	31	3.1	31	21.8
11	31	24.6	31	18.4	31	77.9	31	3.2	31	22.8
12	31	26.1	31	18.8	31	74.7	31	3.2	31	23.9
13	31	27.5	31	19.1	31	71.9	31	3.2	31	24.8
14	31	28.8	31	19.4	31	69.7	31	3.2	31	25.7
15	31	30.0	31	19.9	31	68.3	31	3.3	31	26.5
16	31	30.6	31	20.5	31	68.6	31	3.4	31	27.1
17	31	30.4	31	21.1	31	70.4	31	3.5	31	27.2
18	31	29.3	31	21.8	31	75.1	31	3.6	31	26.7
19	31	27.8	31	21.8	31	79.0	31	3.6	31	25.8
20	31	26.9	31	21.5	31	80.7	31	3.5	31	25.1
21	31	26.0	31	21.2	31	82.1	31	3.5	31	24.5
22	31	25.3	31	20.8	31	83.1	31	3.5	31	23.9
23	31	24.8	31	20.6	31	83.9	31	3.4	31	23.5
24	31	24.4	31	20.6	31	85.3	31	3.4	31	23.2
HOURLY MEAN		25.6		20.0		80.2		3.4		23.8
AVG DAILY MAX		33.7		27.2		92.4		4.3		30.7
AVG DAILY MIN		17.7		13.7		65.3		2.6		16.9
ABSOLUTE MAX		61.4		49.1		100.0		9.1		50.4
ABSOLUTE MIN		-12.2		-21.8		32.7		.4		-13.0
TOTAL OBS		744		744		744		744		744

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY JAN-MAR 2019

MONTHLY HOUR AVERAGES FOR THE PERIOD

FEBRUARY

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	28	20.8	28	17.9	28	87.9	28	3.2	28	20.1
2	28	20.5	28	17.6	28	88.0	28	3.1	28	19.8
3	28	19.5	28	16.5	28	87.9	28	3.0	28	18.7
4	28	18.9	28	16.1	28	88.6	28	2.9	28	18.2
5	28	18.2	28	15.7	28	89.0	28	2.9	28	17.6
6	28	17.7	28	15.3	28	89.4	28	2.9	28	17.2
7	28	17.4	28	14.8	28	89.0	28	2.8	28	16.8
8	28	17.0	28	14.3	28	88.2	28	2.8	28	16.4
9	28	17.3	28	13.7	28	85.2	28	2.7	28	16.5
10	28	18.3	28	13.6	28	81.2	28	2.7	28	17.2
11	28	19.6	28	13.6	28	77.5	28	2.7	28	18.2
12	28	21.1	28	14.2	28	74.6	28	2.8	28	19.3
13	28	22.5	28	14.8	28	72.5	28	2.8	28	20.5
14	28	23.7	28	15.4	28	70.9	28	2.9	28	21.5
15	28	24.8	28	16.1	28	70.2	28	3.0	28	22.4
16	28	25.5	28	17.0	28	70.7	28	3.1	28	23.1
17	28	25.8	28	17.8	28	72.2	28	3.2	28	23.5
18	28	25.3	28	18.8	28	76.5	28	3.2	28	23.4
19	28	24.4	28	19.7	28	82.4	28	3.4	28	23.1
20	28	23.7	28	19.7	28	84.5	28	3.4	28	22.6
21	28	23.0	28	19.1	28	85.0	28	3.3	28	22.0
22	28	22.5	28	18.9	28	86.0	28	3.3	28	21.5
23	28	21.9	28	18.6	28	87.0	28	3.2	28	21.1
24	28	21.4	28	18.2	28	87.2	28	3.2	28	20.6
HOURLY MEAN		21.3		16.6		82.2		3.0		20.1
AVG DAILY MAX		28.3		24.8		94.7		4.1		26.8
AVG DAILY MIN		14.3		9.8		67.2		2.3		13.5
ABSOLUTE MAX		60.2		54.8		100.0		11.0		57.2
ABSOLUTE MIN		.8		-9.9		41.4		.8		-.3
TOTAL OBS		672		672		672		672		672

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY JAN-MAR 2019

MONTHLY HOUR AVERAGES FOR THE PERIOD

MARCH

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	31	34.9	31	30.3	31	83.3	31	5.1	31	33.2
2	31	34.4	31	30.0	31	84.0	31	5.0	31	32.8
3	31	33.8	31	29.3	31	83.9	31	4.9	31	32.1
4	31	33.0	31	29.0	31	85.3	31	4.9	31	31.6
5	31	32.3	31	28.8	31	86.7	31	4.8	31	31.1
6	31	31.7	31	28.4	31	87.6	31	4.8	31	30.6
7	31	31.3	31	28.2	31	88.1	31	4.8	31	30.2
8	31	31.2	31	27.8	31	86.7	31	4.7	31	30.1
9	31	32.1	31	27.7	31	83.4	31	4.7	31	30.7
10	31	33.3	31	27.6	31	79.9	31	4.7	31	31.4
11	31	34.7	31	28.0	31	76.8	31	4.7	31	32.4
12	31	36.4	31	28.7	31	74.4	31	4.9	31	33.7
13	31	38.1	31	29.2	31	71.3	31	5.0	31	34.9
14	31	39.6	31	29.1	31	67.7	31	5.0	31	35.7
15	31	40.6	31	29.1	31	65.6	31	4.9	31	36.2
16	31	41.2	31	29.1	31	64.5	31	4.9	31	36.5
17	31	41.6	31	29.6	31	64.8	31	5.0	31	36.9
18	31	41.5	31	30.5	31	67.3	31	5.1	31	37.1
19	31	40.6	31	31.7	31	72.0	31	5.3	31	37.0
20	31	39.3	31	32.3	31	76.5	31	5.4	31	36.5
21	31	38.5	31	32.1	31	78.1	31	5.4	31	35.9
22	31	37.9	31	31.6	31	78.4	31	5.3	31	35.4
23	31	37.1	31	31.4	31	80.0	31	5.3	31	34.9
24	31	36.4	31	31.1	31	81.3	31	5.2	31	34.4
HOURLY MEAN		36.3		29.6		77.8		5.0		33.8
AVG DAILY MAX		43.6		35.6		93.5		6.1		39.3
AVG DAILY MIN		29.9		24.5		57.9		4.1		28.6
ABSOLUTE MAX		71.7		56.6		100.0		11.8		62.2
ABSOLUTE MIN		-5.2		-12.3		32.1		.7		-5.9
TOTAL OBS		744		744		744		744		744

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY JAN-MAR 2019

JAN-MAR HOUR AVERAGES FOR THE PERIOD

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	90	26.8	90	23.1	90	85.5	90	3.9	90	25.6
2	90	26.4	90	22.7	90	85.9	90	3.9	90	25.2
3	90	25.8	90	22.1	90	86.0	90	3.8	90	24.7
4	90	25.3	90	21.8	90	86.7	90	3.8	90	24.2
5	90	24.8	90	21.6	90	87.1	90	3.7	90	23.9
6	90	24.4	90	21.2	90	87.5	90	3.7	90	23.4
7	90	23.9	90	20.8	90	87.6	90	3.6	90	23.0
8	90	23.7	90	20.4	90	87.0	90	3.6	90	22.8
9	90	24.1	90	20.1	90	84.4	90	3.5	90	23.0
10	90	25.1	90	20.0	90	80.8	90	3.5	90	23.7
11	90	26.5	90	20.2	90	77.4	90	3.6	90	24.7
12	90	28.1	90	20.8	90	74.6	90	3.6	90	25.8
13	90	29.6	90	21.2	90	71.9	90	3.7	90	26.9
14	90	30.9	90	21.5	90	69.4	90	3.7	90	27.8
15	90	32.0	90	21.9	90	68.0	90	3.8	90	28.6
16	90	32.7	90	22.4	90	67.8	90	3.8	90	29.1
17	90	32.8	90	23.0	90	69.1	90	3.9	90	29.4
18	90	32.2	90	23.9	90	72.9	90	4.0	90	29.3
19	90	31.1	90	24.6	90	77.6	90	4.1	90	28.8
20	90	30.2	90	24.7	90	80.4	90	4.1	90	28.3
21	90	29.4	90	24.3	90	81.6	90	4.1	90	27.6
22	90	28.7	90	23.9	90	82.4	90	4.0	90	27.1
23	90	28.2	90	23.7	90	83.5	90	4.0	90	26.7
24	90	27.6	90	23.5	90	84.5	90	4.0	90	26.2
HOURLY MEAN		27.9		22.2		80.0		3.8		26.1
AVG DAILY MAX		35.4		29.3		93.5		4.9		32.4
AVG DAILY MIN		20.8		16.2		63.3		3.0		19.9
ABSOLUTE MAX		71.7		56.6		100.0		11.8		62.2
ABSOLUTE MIN		-12.2		-21.8		32.1		.4		-13.0
TOTAL OBS		2160		2160		2160		2160		2160

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY APR-JUN 2019

MONTHLY HOUR AVERAGES FOR THE PERIOD

APRIL

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	30	52.2	30	43.7	30	73.9	30	7.7	30	48.0
2	30	51.1	30	43.6	30	76.5	30	7.7	30	47.5
3	30	50.3	30	43.6	30	78.7	30	7.8	30	47.1
4	30	49.3	30	43.7	30	81.4	30	7.8	30	46.7
5	30	48.7	30	43.5	30	82.5	30	7.7	30	46.3
6	30	48.3	30	43.7	30	84.0	30	7.8	30	46.2
7	30	48.0	30	43.2	30	83.4	30	7.6	30	45.7
8	30	49.3	29	42.6	29	78.2	29	7.4	29	46.1
9	30	51.2	29	43.0	29	74.8	29	7.6	29	47.2
10	30	53.3	29	43.3	29	70.6	29	7.7	29	48.4
11	30	55.3	29	43.6	29	66.7	29	7.7	29	49.5
12	30	57.2	29	43.7	29	63.0	29	7.7	29	50.4
13	30	58.8	29	43.7	29	59.9	29	7.7	29	51.1
14	30	60.1	29	43.3	29	56.9	29	7.6	29	51.5
15	30	61.3	29	43.2	29	54.4	29	7.5	29	52.0
16	30	62.2	29	43.1	29	52.8	29	7.5	29	52.3
17	30	62.7	30	43.5	30	52.1	30	7.5	30	52.8
18	30	62.4	30	43.9	30	53.4	30	7.6	30	52.8
19	30	61.2	30	44.8	30	57.0	30	7.9	30	52.7
20	30	59.0	30	45.1	30	62.0	30	8.0	30	51.8
21	30	57.2	30	45.1	30	65.7	30	8.0	30	51.0
22	30	55.7	30	44.7	30	67.9	30	7.9	30	50.2
23	30	54.4	30	44.5	30	70.3	30	7.9	30	49.5
24	30	53.4	30	44.3	30	72.5	30	7.9	30	48.9
HOURLY MEAN		55.1		43.8		68.3		7.7		49.4
AVG DAILY MAX		64.9		49.6		87.6		9.4		55.0
AVG DAILY MIN		45.7		38.4		47.6		6.3		43.5
ABSOLUTE MAX		83.5		60.8		100.0		13.3		66.1
ABSOLUTE MIN		30.6		21.6		28.9		3.1		28.3
TOTAL OBS		720		711		711		711		711

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY APR-JUN 2019

MONTHLY HOUR AVERAGES FOR THE PERIOD

MAY

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	31	58.9	31	55.6	31	88.7	31	11.7	31	57.0
2	31	58.1	31	55.2	31	90.0	31	11.6	31	56.5
3	31	57.5	31	54.7	31	90.3	31	11.4	31	55.9
4	31	56.7	31	54.5	31	91.8	31	11.3	31	55.5
5	31	56.1	31	54.1	31	92.5	31	11.2	31	55.0
6	31	55.6	31	53.6	31	92.5	31	11.0	31	54.5
7	31	55.6	31	53.1	31	90.9	31	10.8	31	54.3
8	31	56.5	31	53.2	31	88.8	31	10.8	31	54.7
9	31	57.9	31	53.3	31	84.9	31	10.8	31	55.4
10	31	59.8	31	53.7	31	81.0	31	11.0	31	56.4
11	31	61.6	31	54.0	31	77.4	31	11.1	31	57.3
12	31	63.1	31	54.3	31	74.4	31	11.2	31	58.0
13	31	64.7	31	54.2	31	70.5	31	11.1	31	58.7
14	31	65.9	31	54.2	31	68.1	31	11.1	31	59.2
15	31	66.6	31	54.4	31	67.1	31	11.1	31	59.5
16	31	67.0	31	54.8	31	67.3	31	11.3	31	59.9
17	31	67.1	31	55.3	31	68.7	31	11.5	31	60.2
18	31	67.1	31	55.7	31	69.2	31	11.7	31	60.5
19	31	66.6	31	56.1	31	71.0	31	11.8	31	60.5
20	31	64.7	31	56.9	31	77.3	31	12.2	31	60.2
21	31	63.2	31	57.0	31	81.0	31	12.3	31	59.6
22	31	62.2	31	56.9	31	83.4	31	12.2	31	59.2
23	31	61.2	31	56.7	31	85.7	31	12.2	31	58.6
24	31	60.2	31	56.3	31	87.2	31	12.0	31	58.0
HOURLY MEAN		61.4		54.9		80.8		11.4		57.7
AVG DAILY MAX		68.7		59.7		97.1		13.4		62.0
AVG DAILY MIN		54.2		50.8		62.2		9.9		53.1
ABSOLUTE MAX		92.1		72.3		100.0		19.8		73.3
ABSOLUTE MIN		40.9		34.8		37.0		5.2		38.8
TOTAL OBS		744		744		744		744		744

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY APR-JUN 2019

MONTHLY HOUR AVERAGES FOR THE PERIOD

JUNE

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	30	70.7	30	65.0	30	82.8	30	16.0	30	67.2
2	30	69.9	30	64.8	30	84.2	30	15.9	30	66.8
3	30	69.3	30	64.7	30	85.9	30	15.8	30	66.5
4	30	68.4	30	64.3	30	86.9	30	15.6	30	65.9
5	30	67.5	30	64.0	30	88.7	30	15.5	30	65.4
6	30	67.3	30	63.7	30	88.6	30	15.3	30	65.2
7	30	67.7	30	63.1	30	85.5	30	15.0	30	65.0
8	30	69.0	30	63.2	30	82.3	30	15.0	30	65.5
9	30	70.8	30	63.1	30	77.6	30	14.9	30	66.1
10	30	72.3	30	63.3	30	74.5	30	15.0	30	66.8
11	30	74.2	30	63.0	30	69.7	30	14.9	30	67.3
12	30	76.0	30	62.5	30	64.4	30	14.6	30	67.7
13	30	77.7	30	62.2	30	60.2	30	14.4	30	68.0
14	30	78.7	30	62.1	30	58.0	30	14.3	30	68.3
15	30	79.5	30	62.1	30	56.6	30	14.3	30	68.6
16	30	80.2	30	62.0	30	55.5	30	14.3	30	68.8
17	30	80.6	30	62.3	30	55.6	30	14.5	30	69.1
18	30	80.6	30	63.7	30	58.1	30	15.1	30	69.8
19	30	80.0	30	64.3	30	60.6	30	15.4	30	70.0
20	30	77.9	30	65.3	30	66.8	30	16.0	30	69.9
21	30	75.4	30	65.9	30	73.5	30	16.3	30	69.4
22	30	74.5	30	65.8	30	75.1	30	16.2	30	69.0
23	30	73.5	30	65.4	30	76.7	30	16.1	30	68.4
24	30	72.2	30	65.6	30	80.5	30	16.2	30	68.1
HOURLY MEAN		73.9		63.8		72.8		15.3		67.6
AVG DAILY MAX		81.7		68.5		93.9		17.7		71.2
AVG DAILY MIN		66.4		59.2		51.9		13.1		63.9
ABSOLUTE MAX		93.7		79.1		100.0		24.2		82.3
ABSOLUTE MIN		54.2		42.1		32.4		6.7		51.3
TOTAL OBS		720		720		720		720		720

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY APR-JUN 2019

APR-JUN HOUR AVERAGES FOR THE PERIOD

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	91	60.6	91	54.8	91	81.9	91	11.8	91	57.4
2	91	59.7	91	54.6	91	83.6	91	11.7	91	56.9
3	91	59.0	91	54.4	91	85.0	91	11.7	91	56.5
4	91	58.2	91	54.2	91	86.8	91	11.6	91	56.0
5	91	57.4	91	53.9	91	87.9	91	11.5	91	55.6
6	91	57.1	91	53.7	91	88.4	91	11.4	91	55.3
7	91	57.1	91	53.1	91	86.6	91	11.1	91	55.0
8	91	58.2	90	53.1	90	83.2	90	11.1	90	55.5
9	91	59.9	90	53.3	90	79.2	90	11.2	90	56.3
10	91	61.8	90	53.5	90	75.5	90	11.3	90	57.3
11	91	63.7	90	53.7	90	71.4	90	11.3	90	58.1
12	91	65.4	90	53.6	90	67.4	90	11.2	90	58.8
13	91	67.0	90	53.5	90	63.7	90	11.1	90	59.4
14	91	68.2	90	53.4	90	61.1	90	11.0	90	59.8
15	91	69.1	90	53.3	90	59.5	90	11.0	90	60.1
16	91	69.8	90	53.4	90	58.7	90	11.0	90	60.4
17	91	70.1	91	53.7	91	58.9	91	11.2	91	60.7
18	91	70.0	91	54.4	91	60.3	91	11.5	91	61.0
19	91	69.3	91	55.1	91	63.0	91	11.7	91	61.1
20	91	67.1	91	55.8	91	68.8	91	12.1	91	60.6
21	91	65.2	91	56.0	91	73.5	91	12.2	91	60.0
22	91	64.1	91	55.8	91	75.6	91	12.1	91	59.4
23	91	63.0	91	55.5	91	77.6	91	12.1	91	58.8
24	91	61.9	91	55.4	91	80.2	91	12.0	91	58.3
HOURLY MEAN		63.5		54.2		74.1		11.5		58.3
AVG DAILY MAX		71.7		59.3		92.9		13.5		62.7
AVG DAILY MIN		55.4		49.5		54.0		9.7		53.5
ABSOLUTE MAX		93.7		79.1		100.0		24.2		82.3
ABSOLUTE MIN		30.6		21.6		28.9		3.1		28.3
TOTAL OBS		2184		2175		2175		2175		2175

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY JAN-JUN 2019

JAN-JUN HOUR AVERAGES FOR THE PERIOD

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	181	43.8	181	39.0	181	83.7	181	7.9	181	41.6
2	181	43.1	181	38.7	181	84.8	181	7.8	181	41.2
3	181	42.5	181	38.3	181	85.5	181	7.7	181	40.7
4	181	41.8	181	38.1	181	86.7	181	7.7	181	40.2
5	181	41.2	181	37.8	181	87.5	181	7.6	181	39.8
6	181	40.8	181	37.5	181	87.9	181	7.5	181	39.5
7	181	40.6	181	37.1	181	87.1	181	7.4	181	39.1
8	181	41.0	180	36.8	180	85.1	180	7.3	180	39.1
9	181	42.1	180	36.7	180	81.8	180	7.3	180	39.6
10	181	43.6	180	36.8	180	78.2	180	7.4	180	40.5
11	181	45.2	180	36.9	180	74.4	180	7.4	180	41.4
12	181	46.8	180	37.2	180	71.0	180	7.4	180	42.3
13	181	48.4	180	37.4	180	67.8	180	7.4	180	43.1
14	181	49.7	180	37.4	180	65.2	180	7.4	180	43.8
15	181	50.7	180	37.6	180	63.7	180	7.4	180	44.4
16	181	51.3	180	37.9	180	63.3	180	7.4	180	44.8
17	181	51.5	181	38.4	181	64.0	181	7.6	181	45.1
18	181	51.2	181	39.2	181	66.6	181	7.8	181	45.2
19	181	50.3	181	39.9	181	70.3	181	7.9	181	45.0
20	181	48.8	181	40.3	181	74.6	181	8.1	181	44.5
21	181	47.4	181	40.2	181	77.5	181	8.2	181	43.9
22	181	46.5	181	40.0	181	79.0	181	8.1	181	43.4
23	181	45.7	181	39.7	181	80.6	181	8.1	181	42.8
24	181	44.8	181	39.5	181	82.3	181	8.0	181	42.4
HOURLY MEAN		45.8		38.3		77.0		7.7		42.2
AVG DAILY MAX		53.7		44.4		93.2		9.2		47.7
AVG DAILY MIN		38.2		33.0		58.6		6.4		36.8
ABSOLUTE MAX		93.7		79.1		100.0		24.2		82.3
ABSOLUTE MIN		-12.2		-21.8		28.9		.4		-13.0
TOTAL OBS		4344		4335		4335		4335		4335

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY JUL-SEP 2019

MONTHLY HOUR AVERAGES FOR THE PERIOD

JULY

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	31	76.7	31	70.5	31	81.5	31	18.7	31	72.6
2	31	75.6	31	70.0	31	83.0	31	18.4	31	71.9
3	31	74.7	31	69.8	31	85.2	31	18.3	31	71.4
4	31	74.1	31	69.6	31	86.2	31	18.2	31	71.1
5	31	73.3	31	69.3	31	87.6	31	18.1	31	70.7
6	31	72.6	31	68.9	31	88.4	31	17.9	31	70.2
7	31	72.3	31	68.2	31	87.2	31	17.4	31	69.7
8	31	72.6	31	68.0	31	85.7	31	17.3	31	69.6
9	31	73.6	31	67.8	31	82.4	31	17.1	31	69.8
10	31	75.3	31	67.7	31	77.7	31	17.1	31	70.4
11	31	77.1	31	67.8	31	73.8	31	17.1	31	71.0
12	31	79.0	31	68.0	31	69.9	31	17.1	31	71.7
13	31	80.6	31	67.8	31	65.9	31	17.0	31	72.1
14	31	82.1	31	67.5	31	62.2	31	16.8	31	72.4
15	31	83.2	31	67.5	31	60.1	31	16.8	31	72.7
16	31	84.2	31	67.4	31	58.0	31	16.7	31	73.0
17	31	84.7	31	67.6	31	57.6	31	16.8	31	73.3
18	31	85.0	31	68.2	31	58.0	31	17.1	31	73.7
19	31	84.8	31	68.8	31	59.6	31	17.5	31	74.0
20	31	83.7	31	69.8	31	63.7	31	18.1	31	74.3
21	30	82.1	30	70.9	30	69.7	30	18.9	30	74.5
22	30	80.0	30	71.4	30	75.5	30	19.3	30	74.2
23	31	78.5	31	71.3	31	79.1	31	19.2	31	73.7
24	31	77.5	31	70.8	31	80.1	31	18.9	31	73.0
HOURLY MEAN		78.5		68.9		74.1		17.7		72.1
AVG DAILY MAX		85.6		72.9		91.7		20.2		75.3
AVG DAILY MIN		71.5		65.6		55.0		15.8		68.8
ABSOLUTE MAX		95.3		81.6		100.0		26.2		83.7
ABSOLUTE MIN		60.6		53.7		42.3		10.3		59.8
TOTAL OBS		742		742		742		742		742

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY JUL-SEP 2019

MONTHLY HOUR AVERAGES FOR THE PERIOD

AUGUST

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	31	73.9	31	70.4	31	89.0	31	18.8	31	71.6
2	31	72.9	31	70.1	31	90.8	31	18.6	31	71.1
3	31	72.2	31	69.7	31	91.8	31	18.4	31	70.6
4	31	71.7	31	69.3	31	91.9	31	18.2	31	70.1
5	31	70.6	31	68.3	31	92.2	31	17.6	31	69.2
6	31	69.8	31	68.0	31	93.0	31	17.4	31	68.7
7	31	69.5	31	67.8	31	93.2	31	17.3	31	68.4
8	31	69.2	31	67.6	31	93.7	31	17.2	31	68.2
9	31	69.3	31	67.0	31	92.2	31	16.9	31	67.9
10	31	70.3	31	66.9	31	89.1	31	16.8	31	68.1
11	31	71.7	31	67.0	31	85.4	31	16.8	31	68.7
12	31	73.2	31	67.4	31	82.4	31	17.0	31	69.5
13	31	75.1	31	67.6	31	78.1	31	17.0	31	70.2
14	31	76.8	31	67.6	31	74.3	31	17.0	31	70.8
15	31	77.9	31	67.9	31	72.6	31	17.2	31	71.3
16	31	78.8	31	67.6	31	69.7	31	16.9	31	71.4
17	31	79.6	31	67.7	31	68.3	31	17.0	31	71.7
18	31	80.0	31	67.7	31	67.4	31	17.0	31	71.9
19	31	80.3	31	68.0	31	67.4	31	17.2	31	72.2
20	31	80.0	31	68.9	31	69.8	31	17.7	31	72.6
21	31	78.9	31	70.2	31	75.2	31	18.5	31	73.0
22	31	76.7	31	71.0	31	83.0	31	19.1	31	72.9
23	31	75.3	31	71.0	31	86.4	31	19.1	31	72.4
24	31	74.4	31	70.6	31	88.1	31	18.9	31	71.9
HOURLY MEAN		74.5		68.6		82.7		17.6		70.6
AVG DAILY MAX		81.2		73.2		96.5		20.5		74.4
AVG DAILY MIN		68.5		64.7		64.1		15.5		67.0
ABSOLUTE MAX		89.2		81.1		100.0		26.0		82.2
ABSOLUTE MIN		57.3		54.5		43.5		10.6		57.9
TOTAL OBS		744		744		744		744		744

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY JUL-SEP 2019

MONTHLY HOUR AVERAGES FOR THE PERIOD

SEPTEMBER

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	30	72.2	30	67.6	30	85.8	30	17.2	30	69.3
2	30	71.3	30	67.4	30	87.7	30	17.1	30	68.8
3	30	70.6	30	67.1	30	88.9	30	16.9	30	68.4
4	30	70.1	30	66.9	30	89.5	30	16.8	30	68.1
5	30	69.4	30	66.5	30	90.3	30	16.6	30	67.6
6	30	68.8	30	66.2	30	90.9	30	16.5	30	67.2
7	30	68.2	30	65.9	30	91.4	30	16.3	30	66.7
8	30	67.8	29	65.9	29	92.0	29	16.4	29	66.7
9	30	67.5	29	65.5	29	91.5	29	16.1	29	66.4
10	30	68.6	29	65.3	29	88.2	29	16.0	29	66.6
11	30	70.7	29	65.6	29	83.4	29	16.1	29	67.5
12	30	73.2	29	65.9	29	78.2	29	16.2	29	68.6
13	30	75.7	29	66.3	29	73.2	29	16.4	29	69.7
14	30	77.6	29	66.7	29	70.0	29	16.5	29	70.5
15	30	79.0	29	67.0	29	67.8	29	16.7	29	71.2
16	30	80.0	29	67.1	29	66.2	29	16.7	29	71.5
17	30	80.6	29	67.0	29	64.9	29	16.7	29	71.7
18	30	80.7	30	66.9	30	64.5	30	16.6	30	71.7
19	30	80.7	30	67.1	30	64.5	30	16.7	30	71.8
20	30	79.4	30	67.5	30	68.2	30	17.0	30	71.6
21	30	77.0	30	68.5	30	76.0	30	17.6	30	71.4
22	30	75.3	30	68.8	30	80.9	30	17.8	30	71.1
23	30	74.4	30	68.7	30	82.9	30	17.8	30	70.7
24	30	73.6	30	68.3	30	84.0	30	17.6	30	70.2
HOURLY MEAN		73.8		66.9		80.1		16.8		69.4
AVG DAILY MAX		82.0		71.4		94.8		19.3		73.6
AVG DAILY MIN		66.8		62.7		59.8		14.6		64.8
ABSOLUTE MAX		91.5		75.6		100.0		21.8		78.4
ABSOLUTE MIN		53.2		48.5		40.3		8.6		51.3
TOTAL OBS		720		710		710		710		710

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY JUL-SEP 2019

JUL-SEP HOUR AVERAGES FOR THE PERIOD

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	92	74.3	92	69.5	92	85.5	92	18.3	92	71.2
2	92	73.3	92	69.2	92	87.2	92	18.1	92	70.6
3	92	72.5	92	68.9	92	88.6	92	17.9	92	70.2
4	92	72.0	92	68.6	92	89.2	92	17.7	92	69.8
5	92	71.1	92	68.1	92	90.0	92	17.4	92	69.1
6	92	70.4	92	67.7	92	90.8	92	17.3	92	68.7
7	92	70.0	92	67.3	92	90.6	92	17.0	92	68.3
8	92	69.9	91	67.2	91	90.4	91	17.0	91	68.2
9	92	70.2	91	66.8	91	88.6	91	16.7	91	68.1
10	92	71.4	91	66.7	91	84.9	91	16.6	91	68.4
11	92	73.2	91	66.8	91	80.8	91	16.7	91	69.1
12	92	75.1	91	67.1	91	76.8	91	16.8	91	70.0
13	92	77.2	91	67.3	91	72.4	91	16.8	91	70.7
14	92	78.9	91	67.3	91	68.8	91	16.8	91	71.3
15	92	80.0	91	67.5	91	66.8	91	16.9	91	71.8
16	92	81.0	91	67.4	91	64.6	91	16.8	91	72.0
17	92	81.6	91	67.4	91	63.6	91	16.8	91	72.2
18	92	81.9	92	67.6	92	63.3	92	16.9	92	72.4
19	92	81.9	92	68.0	92	63.8	92	17.1	92	72.7
20	92	81.1	92	68.7	92	67.2	92	17.6	92	72.8
21	91	79.3	91	69.8	91	73.6	91	18.3	91	73.0
22	91	77.3	91	70.4	91	79.9	91	18.7	91	72.7
23	92	76.1	92	70.4	92	82.8	92	18.7	92	72.3
24	92	75.2	92	69.9	92	84.1	92	18.5	92	71.7
HOURLY MEAN		75.6		68.2		78.9		17.4		70.7
AVG DAILY MAX		82.9		72.5		94.3		20.0		74.4
AVG DAILY MIN		68.9		64.4		59.6		15.3		66.9
ABSOLUTE MAX		95.3		81.6		100.0		26.2		83.7
ABSOLUTE MIN		53.2		48.5		40.3		8.6		51.3
TOTAL OBS		2206		2196		2196		2196		2196

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY OCT-DEC 2019

MONTHLY HOUR AVERAGES FOR THE PERIOD

OCTOBER

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	31	49.0	31	43.1	31	81.0	31	7.8	31	46.2
2	31	48.2	31	42.9	31	82.3	31	7.8	31	45.8
3	31	47.6	31	42.6	31	83.3	31	7.7	31	45.3
4	31	47.0	31	42.2	31	83.5	31	7.6	31	44.8
5	31	46.2	31	41.8	31	84.7	31	7.5	31	44.3
6	31	45.8	31	41.6	31	85.1	31	7.5	31	43.9
7	31	45.3	31	41.2	31	85.4	31	7.4	31	43.5
8	31	45.0	31	40.9	31	85.6	31	7.3	31	43.2
9	31	44.5	31	40.5	31	86.0	31	7.2	31	42.8
10	31	45.0	31	40.2	31	83.6	31	7.2	31	43.0
11	31	47.0	30	40.5	30	78.1	30	7.3	30	44.2
12	31	49.3	30	40.5	30	72.1	30	7.3	30	45.4
13	31	51.7	30	40.7	30	67.2	30	7.3	30	46.6
14	30	53.4	30	40.3	30	62.8	30	7.2	30	47.3
15	30	54.6	30	39.7	30	59.2	30	7.0	30	47.6
16	30	55.4	30	39.3	30	57.1	30	6.8	30	47.8
17	31	56.5	31	39.4	31	55.6	31	6.8	31	48.3
18	31	56.6	31	39.5	31	55.7	31	6.8	31	48.5
19	31	55.9	31	39.9	31	58.1	31	6.9	31	48.3
20	31	54.1	31	41.3	31	64.1	31	7.2	31	48.0
21	31	51.8	31	42.5	31	71.7	31	7.6	31	47.4
22	31	50.5	31	42.6	31	75.2	31	7.6	31	46.8
23	31	49.5	31	42.7	31	78.4	31	7.6	31	46.3
24	31	48.4	31	42.0	31	79.5	31	7.4	31	45.5
HOURLY MEAN		49.9		41.2		74.0		7.3		45.9
AVG DAILY MAX		58.4		47.2		92.9		9.1		51.3
AVG DAILY MIN		42.6		36.1		52.6		5.9		40.8
ABSOLUTE MAX		87.8		74.2		100.0		20.9		77.5
ABSOLUTE MIN		22.5		14.9		26.5		2.3		20.8
TOTAL OBS		741		738		738		738		738

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY OCT-DEC 2019

MONTHLY HOUR AVERAGES FOR THE PERIOD

NOVEMBER

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	30	36.9	30	30.4	30	77.9	30	4.8	30	34.4
2	30	36.1	30	29.9	30	78.8	30	4.7	30	33.7
3	30	35.3	30	29.4	30	79.4	30	4.5	30	33.0
4	30	34.7	30	29.2	30	80.6	30	4.5	30	32.6
5	30	33.8	30	29.0	30	82.6	30	4.5	30	32.0
6	30	33.3	30	28.7	30	83.6	30	4.5	30	31.6
7	30	32.9	30	28.4	30	83.8	30	4.4	30	31.2
8	30	32.8	30	28.0	30	82.6	30	4.3	30	31.0
9	30	34.0	30	28.2	30	79.3	30	4.3	30	31.8
10	30	36.0	30	28.4	30	74.2	30	4.4	30	33.1
11	30	38.4	30	28.9	30	69.2	30	4.5	30	34.7
12	30	40.7	30	29.0	30	64.1	30	4.5	30	36.0
13	30	42.8	30	29.1	30	59.5	30	4.4	30	37.2
14	30	44.6	30	29.2	30	56.4	30	4.4	30	38.2
15	30	45.5	30	29.3	30	55.3	30	4.5	30	38.8
16	30	45.7	30	29.8	30	56.0	30	4.6	30	39.0
17	30	45.1	30	30.4	30	58.6	30	4.7	30	38.9
18	30	43.7	30	31.0	30	62.9	30	4.8	30	38.4
19	30	42.4	30	31.1	30	66.2	30	4.9	30	37.7
20	30	41.0	30	31.5	30	70.3	30	5.0	30	37.1
21	30	39.9	30	31.5	30	73.2	30	5.0	30	36.4
22	30	38.9	30	31.6	30	75.8	30	5.0	30	35.9
23	30	38.2	30	31.4	30	77.4	30	5.0	30	35.5
24	30	37.7	30	31.1	30	78.1	30	4.9	30	35.1
HOURLY MEAN		38.8		29.8		71.9		4.6		35.1
AVG DAILY MAX		48.0		36.4		90.7		6.0		41.6
AVG DAILY MIN		30.5		24.5		52.7		3.7		29.0
ABSOLUTE MAX		68.0		60.1		100.0		13.3		60.3
ABSOLUTE MIN		6.2		2.6		33.1		1.4		5.6
TOTAL OBS		720		720		720		720		720

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY OCT-DEC 2019

MONTHLY HOUR AVERAGES FOR THE PERIOD

DECEMBER

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	31	32.3	31	28.2	31	85.2	31	4.4	31	30.8
2	31	31.8	31	27.8	31	85.4	31	4.3	31	30.3
3	31	31.4	31	27.4	31	85.5	31	4.2	31	29.9
4	31	30.9	31	27.2	31	86.1	31	4.1	31	29.6
5	31	30.6	31	27.0	31	86.9	31	4.1	31	29.3
6	31	30.3	31	26.8	31	87.1	31	4.1	31	29.0
7	31	29.8	31	26.4	31	87.7	31	4.0	31	28.5
8	31	29.0	31	25.8	31	87.9	31	3.9	31	27.8
9	31	29.1	31	25.3	31	85.7	31	3.8	31	27.7
10	31	30.7	31	25.8	31	82.4	31	3.9	31	28.9
11	31	32.9	31	26.7	31	78.2	31	4.1	31	30.6
12	31	35.2	31	27.2	31	73.0	31	4.2	31	32.1
13	31	37.5	31	27.5	31	67.9	31	4.2	31	33.6
14	31	39.4	31	27.8	31	64.4	31	4.3	31	34.8
15	31	40.6	31	28.2	31	62.9	31	4.3	31	35.6
16	31	41.0	31	29.0	31	63.6	31	4.5	31	36.1
17	31	40.1	31	29.4	31	66.8	31	4.6	31	35.8
18	31	38.3	31	29.9	31	72.4	31	4.6	31	34.9
19	31	37.0	31	29.7	31	75.1	31	4.6	31	34.1
20	31	35.6	31	29.5	31	78.7	31	4.6	31	33.2
21	31	34.5	31	29.1	31	81.1	31	4.5	31	32.4
22	31	33.5	31	28.8	31	83.0	31	4.5	31	31.7
23	31	32.8	31	28.3	31	83.6	31	4.4	31	31.2
24	31	32.4	31	28.1	31	84.3	31	4.4	31	30.9
HOURLY MEAN		34.0		27.8		79.0		4.3		31.6
AVG DAILY MAX		42.9		33.9		94.7		5.4		38.4
AVG DAILY MIN		26.4		22.5		60.4		3.4		25.4
ABSOLUTE MAX		59.6		53.1		100.0		10.5		52.4
ABSOLUTE MIN		14.1		10.7		39.2		2.0		13.8
TOTAL OBS		744		744		744		744		744

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY OCT-DEC 2019

OCT-DEC HOUR AVERAGES FOR THE PERIOD

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	92	39.4	92	34.0	92	81.4	92	5.7	92	37.2
2	92	38.7	92	33.6	92	82.2	92	5.6	92	36.6
3	92	38.1	92	33.2	92	82.8	92	5.5	92	36.1
4	92	37.6	92	32.9	92	83.4	92	5.4	92	35.7
5	92	36.9	92	32.6	92	84.8	92	5.4	92	35.2
6	92	36.5	92	32.4	92	85.3	92	5.3	92	34.9
7	92	36.0	92	32.0	92	85.6	92	5.3	92	34.4
8	92	35.6	92	31.6	92	85.4	92	5.2	92	34.1
9	92	35.9	92	31.3	92	83.7	92	5.2	92	34.1
10	92	37.2	92	31.5	92	80.1	92	5.2	92	35.0
11	92	39.4	91	32.0	91	75.2	91	5.3	91	36.4
12	92	41.7	91	32.2	91	69.8	91	5.3	91	37.8
13	92	44.0	91	32.3	91	64.9	91	5.3	91	39.1
14	91	45.7	91	32.4	91	61.2	91	5.3	91	40.0
15	91	46.8	91	32.4	91	59.1	91	5.3	91	40.6
16	91	47.3	91	32.6	91	59.0	91	5.3	91	40.9
17	92	47.3	92	33.1	92	60.3	92	5.4	92	41.0
18	92	46.2	92	33.5	92	63.7	92	5.4	92	40.6
19	92	45.1	92	33.6	92	66.5	92	5.5	92	40.1
20	92	43.6	92	34.1	92	71.0	92	5.6	92	39.5
21	92	42.1	92	34.4	92	75.4	92	5.7	92	38.8
22	92	41.0	92	34.3	92	78.0	92	5.7	92	38.2
23	92	40.2	92	34.2	92	79.8	92	5.7	92	37.7
24	92	39.5	92	33.8	92	80.6	92	5.6	92	37.2
HOURLY MEAN		40.9		32.9		75.0		5.4		37.5
AVG DAILY MAX		49.8		39.2		92.8		6.8		43.8
AVG DAILY MIN		33.2		27.8		55.3		4.4		31.7
ABSOLUTE MAX		87.8		74.2		100.0		20.9		77.5
ABSOLUTE MIN		6.2		2.6		26.5		1.4		5.6
TOTAL OBS		2205		2202		2202		2202		2202

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY JUL-DEC 2019

JUL-DEC HOUR AVERAGES FOR THE PERIOD

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	184	56.9	184	51.8	184	83.4	184	12.0	184	54.2
2	184	56.0	184	51.4	184	84.7	184	11.8	184	53.6
3	184	55.3	184	51.0	184	85.7	184	11.7	184	53.1
4	184	54.8	184	50.7	184	86.3	184	11.6	184	52.7
5	184	54.0	184	50.4	184	87.4	184	11.4	184	52.2
6	184	53.5	184	50.1	184	88.0	184	11.3	184	51.8
7	184	53.0	184	49.7	184	88.1	184	11.2	184	51.4
8	184	52.7	183	49.3	183	87.9	183	11.0	183	51.0
9	184	53.0	183	49.0	183	86.2	183	10.9	183	51.0
10	184	54.3	183	49.0	183	82.5	183	10.9	183	51.6
11	184	56.3	182	49.4	182	78.0	182	11.0	182	52.8
12	184	58.4	182	49.7	182	73.3	182	11.0	182	53.9
13	184	60.6	182	49.8	182	68.6	182	11.1	182	54.9
14	183	62.4	182	49.8	182	65.0	182	11.0	182	55.7
15	183	63.5	182	49.9	182	63.0	182	11.1	182	56.2
16	183	64.3	182	50.0	182	61.8	182	11.0	182	56.5
17	184	64.4	183	50.2	183	61.9	183	11.1	183	56.6
18	184	64.1	184	50.6	184	63.5	184	11.2	184	56.5
19	184	63.5	184	50.8	184	65.2	184	11.3	184	56.4
20	184	62.3	184	51.4	184	69.1	184	11.6	184	56.1
21	183	60.6	183	52.0	183	74.5	183	12.0	183	55.8
22	183	59.1	183	52.3	183	78.9	183	12.2	183	55.3
23	184	58.1	184	52.3	184	81.3	184	12.2	184	55.0
24	184	57.4	184	51.9	184	82.4	184	12.0	184	54.4
HOURLY MEAN		58.3		50.5		77.0		11.4		54.1
AVG DAILY MAX		66.4		55.9		93.6		13.4		59.1
AVG DAILY MIN		51.1		46.1		57.4		9.8		49.3
ABSOLUTE MAX		95.3		81.6		100.0		26.2		83.7
ABSOLUTE MIN		6.2		2.6		26.5		1.4		5.6
TOTAL OBS		4411		4398		4398		4398		4398

PROGRAM: WETTEMP
VERSION: PC-1.0

NPPD-COOPER NUCLEAR STATION 10-M TEMPERATURE SUMMARY JAN-DEC 2019

JAN-DEC HOUR AVERAGES FOR THE PERIOD

10.0 METER LEVEL

	TEMPERATURE		DEW POINT		RELATIVE HUM		ABSOLUTE HUM		WET BULB	
HOUR	NUMBER OBS	(DEG F)	NUMBER OBS	(DEG F)	NUMBER OBS	(%)	NUMBER OBS	(GM/M3)	NUMBER OBS	(DEG F)
1	365	50.4	365	45.4	365	83.5	365	9.9	365	48.0
2	365	49.6	365	45.1	365	84.7	365	9.8	365	47.5
3	365	49.0	365	44.7	365	85.6	365	9.7	365	47.0
4	365	48.4	365	44.5	365	86.5	365	9.6	365	46.5
5	365	47.7	365	44.1	365	87.5	365	9.5	365	46.0
6	365	47.2	365	43.8	365	88.0	365	9.4	365	45.7
7	365	46.9	365	43.4	365	87.6	365	9.3	365	45.3
8	365	46.9	363	43.1	363	86.5	363	9.2	363	45.1
9	365	47.6	363	42.9	363	84.0	363	9.1	363	45.4
10	365	49.0	363	42.9	363	80.3	363	9.1	363	46.1
11	365	50.8	362	43.2	362	76.2	362	9.2	362	47.1
12	365	52.7	362	43.5	362	72.1	362	9.2	362	48.1
13	365	54.5	362	43.6	362	68.2	362	9.2	362	49.0
14	364	56.1	362	43.7	362	65.1	362	9.2	362	49.8
15	364	57.1	362	43.8	362	63.4	362	9.2	362	50.3
16	364	57.8	362	44.0	362	62.5	362	9.2	362	50.6
17	365	58.0	364	44.3	364	62.9	364	9.3	364	50.9
18	365	57.7	365	44.9	365	65.0	365	9.5	365	50.9
19	365	57.0	365	45.4	365	67.7	365	9.6	365	50.7
20	365	55.6	365	45.9	365	71.8	365	9.9	365	50.4
21	364	54.0	364	46.2	364	76.0	364	10.1	364	49.9
22	364	52.8	364	46.1	364	79.0	364	10.2	364	49.4
23	365	52.0	365	46.0	365	80.9	365	10.1	365	49.0
24	365	51.2	365	45.7	365	82.3	365	10.0	365	48.5
HOURLY MEAN		52.1		44.4		77.0		9.5		48.2
AVG DAILY MAX		60.1		50.2		93.4		11.3		53.4
AVG DAILY MIN		44.7		39.6		58.0		8.1		43.1
ABSOLUTE MAX		95.3		81.6		100.0		26.2		83.7
ABSOLUTE MIN		-12.2		-21.8		26.5		.4		-13.0
TOTAL OBS		8755		8733		8733		8733		8733

Wind Direction Frequencies

10-Meter Level

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

JANUARY

	WIND DIRECTION																	
HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	12.9	9.7	3.2	00.0	3.2	12.9	3.2	9.7	3.2	3.2	6.5	9.7	00.0	00.0	12.9	9.7	00.0	100.
2	22.6	9.7	00.0	00.0	6.5	9.7	3.2	00.0	6.5	3.2	12.9	00.0	6.5	3.2	6.5	9.7	00.0	100.
3	16.1	6.5	6.5	00.0	00.0	12.9	6.5	6.5	9.7	6.5	3.2	00.0	00.0	9.7	3.2	12.9	00.0	100.
4	12.9	6.5	6.5	3.2	3.2	12.9	6.5	00.0	9.7	9.7	6.5	00.0	00.0	6.5	12.9	3.2	00.0	100.
5	16.1	00.0	6.5	3.2	3.2	16.1	9.7	3.2	3.2	9.7	3.2	3.2	3.2	00.0	9.7	9.7	00.0	100.
6	6.5	9.7	00.0	3.2	6.5	12.9	9.7	3.2	6.5	3.2	9.7	3.2	00.0	3.2	9.7	12.9	00.0	100.
7	3.2	9.7	00.0	00.0	00.0	12.9	19.4	00.0	9.7	6.5	6.5	00.0	3.2	6.5	9.7	12.9	00.0	100.
8	6.5	9.7	3.2	00.0	3.2	12.9	9.7	9.7	6.5	6.5	6.5	00.0	6.5	00.0	9.7	9.7	00.0	100.
9	6.5	6.5	00.0	00.0	00.0	9.7	12.9	3.2	9.7	3.2	12.9	9.7	00.0	3.2	3.2	19.4	00.0	100.
10	6.5	6.5	00.0	00.0	00.0	12.9	12.9	6.5	3.2	9.7	6.5	3.2	3.2	6.5	3.2	19.4	00.0	100.
11	9.7	3.2	3.2	00.0	00.0	9.7	16.1	00.0	6.5	9.7	6.5	3.2	3.2	6.5	3.2	19.4	00.0	100.
12	6.5	9.7	00.0	00.0	3.2	3.2	16.1	3.2	3.2	6.5	9.7	9.7	6.5	3.2	3.2	16.1	00.0	100.
13	6.5	6.5	00.0	3.2	3.2	3.2	9.7	9.7	00.0	3.2	9.7	9.7	6.5	6.5	6.5	16.1	00.0	100.
14	9.7	6.5	3.2	00.0	3.2	3.2	12.9	3.2	00.0	3.2	6.5	16.1	6.5	6.5	9.7	9.7	00.0	100.
15	9.7	9.7	3.2	3.2	00.0	3.2	9.7	3.2	3.2	3.2	12.9	9.7	6.5	6.5	6.5	9.7	00.0	100.
16	12.9	3.2	3.2	00.0	3.2	6.5	3.2	12.9	3.2	3.2	12.9	3.2	00.0	6.5	16.1	9.7	00.0	100.
17	9.7	6.5	3.2	3.2	6.5	3.2	3.2	6.5	6.5	6.5	16.1	00.0	00.0	3.2	9.7	16.1	00.0	100.
18	16.1	3.2	3.2	3.2	6.5	00.0	6.5	9.7	00.0	9.7	16.1	3.2	00.0	3.2	9.7	9.7	00.0	100.
19	6.5	9.7	3.2	6.5	6.5	00.0	00.0	6.5	9.7	00.0	16.1	3.2	3.2	3.2	12.9	12.9	00.0	100.
20	19.4	3.2	00.0	6.5	3.2	3.2	3.2	12.9	3.2	6.5	6.5	3.2	6.5	3.2	6.5	12.9	00.0	100.
21	16.1	6.5	3.2	6.5	6.5	00.0	6.5	9.7	3.2	3.2	6.5	3.2	00.0	9.7	9.7	9.7	00.0	100.
22	16.1	3.2	3.2	00.0	3.2	6.5	6.5	12.9	00.0	3.2	12.9	6.5	3.2	3.2	12.9	6.5	00.0	100.
23	9.7	6.5	3.2	00.0	00.0	12.9	9.7	6.5	9.7	00.0	12.9	3.2	00.0	9.7	6.5	9.7	00.0	100.
24	9.7	9.7	3.2	00.0	3.2	6.5	12.9	6.5	3.2	00.0	12.9	6.5	3.2	9.7	3.2	6.5	3.2	100.
ALL	11.2	6.7	2.6	1.7	3.1	7.8	8.7	6.0	5.0	5.0	9.7	4.6	2.8	5.0	8.2	11.8	.1	100.

NUMBER OF OBS = 744

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

FEBRUARY

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	14.3	10.7	3.6	00.0	3.6	3.6	10.7	00.0	3.6	3.6	3.6	3.6	3.6	3.6	10.7	21.4	00.0	100.
2	14.3	14.3	00.0	00.0	00.0	10.7	3.6	7.1	3.6	3.6	00.0	00.0	00.0	7.1	10.7	25.0	00.0	100.
3	17.9	17.9	7.1	00.0	3.6	00.0	10.7	3.6	10.7	3.6	00.0	00.0	00.0	00.0	14.3	10.7	00.0	100.
4	3.6	21.4	3.6	3.6	00.0	7.1	00.0	3.6	7.1	7.1	00.0	00.0	3.6	00.0	17.9	21.4	00.0	100.
5	7.1	21.4	3.6	7.1	00.0	7.1	00.0	00.0	14.3	3.6	3.6	00.0	00.0	3.6	10.7	17.9	00.0	100.
6	14.3	17.9	00.0	7.1	00.0	7.1	00.0	00.0	14.3	3.6	3.6	00.0	00.0	3.6	10.7	14.3	3.6	100.
7	7.1	14.3	7.1	7.1	00.0	7.1	3.6	00.0	14.3	3.6	00.0	00.0	00.0	7.1	14.3	14.3	00.0	100.
8	14.3	10.7	7.1	3.6	3.6	00.0	10.7	00.0	14.3	00.0	00.0	00.0	3.6	3.6	17.9	10.7	00.0	100.
9	14.3	14.3	00.0	7.1	3.6	3.6	7.1	7.1	10.7	3.6	00.0	3.6	00.0	3.6	14.3	7.1	00.0	100.
10	17.9	3.6	7.1	3.6	7.1	00.0	10.7	3.6	10.7	00.0	3.6	00.0	00.0	7.1	14.3	10.7	00.0	100.
11	14.3	7.1	7.1	14.3	3.6	7.1	10.7	00.0	7.1	00.0	3.6	00.0	00.0	7.1	10.7	7.1	00.0	100.
12	14.3	10.7	3.6	10.7	7.1	3.6	7.1	3.6	7.1	00.0	00.0	3.6	3.6	00.0	17.9	7.1	00.0	100.
13	14.3	14.3	7.1	7.1	3.6	7.1	10.7	3.6	3.6	00.0	00.0	3.6	3.6	00.0	14.3	7.1	00.0	100.
14	10.7	14.3	3.6	14.3	00.0	10.7	3.6	3.6	7.1	00.0	00.0	3.6	00.0	10.7	10.7	7.1	00.0	100.
15	10.7	17.9	3.6	14.3	7.1	00.0	10.7	00.0	7.1	00.0	00.0	3.6	00.0	7.1	10.7	7.1	00.0	100.
16	14.3	17.9	00.0	10.7	3.6	3.6	10.7	7.1	3.6	00.0	00.0	3.6	00.0	00.0	17.9	7.1	00.0	100.
17	14.3	21.4	3.6	14.3	3.6	3.6	3.6	7.1	3.6	00.0	3.6	00.0	00.0	7.1	7.1	7.1	00.0	100.
18	25.0	10.7	00.0	10.7	3.6	7.1	3.6	7.1	3.6	00.0	3.6	00.0	00.0	00.0	10.7	14.3	00.0	100.
19	32.1	00.0	3.6	7.1	00.0	3.6	7.1	7.1	7.1	3.6	00.0	00.0	00.0	3.6	7.1	17.9	00.0	100.
20	21.4	14.3	00.0	00.0	10.7	3.6	3.6	10.7	3.6	3.6	00.0	00.0	00.0	3.6	14.3	10.7	00.0	100.
21	21.4	10.7	3.6	3.6	3.6	3.6	3.6	7.1	7.1	00.0	3.6	00.0	00.0	7.1	17.9	7.1	00.0	100.
22	21.4	14.3	3.6	3.6	3.6	3.6	7.1	3.6	7.1	00.0	00.0	00.0	3.6	3.6	10.7	14.3	00.0	100.
23	14.3	14.3	3.6	3.6	3.6	7.1	3.6	00.0	10.7	3.6	00.0	00.0	3.6	00.0	10.7	21.4	00.0	100.
24	17.9	17.9	3.6	00.0	00.0	7.1	3.6	3.6	10.7	3.6	00.0	00.0	3.6	3.6	14.3	10.7	00.0	100.
ALL	15.5	13.8	3.6	6.4	3.1	4.9	6.1	3.7	8.0	1.9	1.2	1.0	1.2	3.9	12.9	12.5	.1	100.

NUMBER OF OBS = 672

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

MARCH

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	19.4	3.2	3.2	00.0	9.7	3.2	3.2	12.9	3.2	3.2	3.2	6.5	9.7	00.0	9.7	9.7	00.0	100.
2	16.1	00.0	6.5	00.0	6.5	6.5	6.5	12.9	9.7	3.2	00.0	00.0	6.5	3.2	9.7	12.9	00.0	100.
3	12.9	6.5	6.5	6.5	3.2	6.5	9.7	00.0	9.7	9.7	00.0	00.0	00.0	6.5	16.1	6.5	00.0	100.
4	19.4	3.2	6.5	00.0	3.2	3.2	12.9	12.9	3.2	3.2	00.0	3.2	00.0	12.9	12.9	3.2	00.0	100.
5	16.1	9.7	00.0	3.2	00.0	9.7	9.7	6.5	12.9	3.2	00.0	00.0	6.5	9.7	9.7	3.2	00.0	100.
6	12.9	6.5	00.0	3.2	00.0	12.9	3.2	6.5	9.7	3.2	00.0	00.0	00.0	6.5	22.6	6.5	6.5	100.
7	19.4	6.5	00.0	00.0	3.2	16.1	6.5	3.2	6.5	00.0	3.2	6.5	00.0	6.5	9.7	9.7	3.2	100.
8	22.6	3.2	00.0	3.2	3.2	6.5	9.7	9.7	9.7	00.0	00.0	3.2	9.7	9.7	6.5	3.2	00.0	100.
9	16.1	6.5	6.5	3.2	3.2	12.9	6.5	3.2	6.5	3.2	00.0	00.0	6.5	19.4	3.2	3.2	00.0	100.
10	9.7	9.7	6.5	3.2	9.7	3.2	9.7	3.2	9.7	3.2	3.2	3.2	3.2	9.7	6.5	6.5	00.0	100.
11	9.7	6.5	9.7	00.0	3.2	12.9	12.9	00.0	6.5	3.2	3.2	3.2	6.5	9.7	6.5	6.5	00.0	100.
12	16.1	3.2	00.0	3.2	12.9	12.9	3.2	3.2	3.2	3.2	3.2	9.7	00.0	9.7	12.9	3.2	00.0	100.
13	12.9	00.0	00.0	00.0	16.1	9.7	12.9	00.0	3.2	6.5	3.2	3.2	6.5	3.2	12.9	9.7	00.0	100.
14	12.9	3.2	00.0	12.9	16.1	6.5	00.0	3.2	6.5	6.5	00.0	00.0	6.5	3.2	9.7	12.9	00.0	100.
15	9.7	12.9	00.0	3.2	9.7	9.7	3.2	6.5	6.5	3.2	3.2	00.0	3.2	6.5	16.1	6.5	00.0	100.
16	9.7	12.9	00.0	3.2	6.5	6.5	6.5	3.2	6.5	3.2	3.2	3.2	3.2	9.7	16.1	6.5	00.0	100.
17	9.7	9.7	6.5	3.2	6.5	6.5	6.5	3.2	3.2	3.2	3.2	3.2	6.5	3.2	19.4	6.5	00.0	100.
18	9.7	9.7	6.5	00.0	3.2	9.7	6.5	3.2	3.2	3.2	3.2	3.2	3.2	3.2	19.4	12.9	00.0	100.
19	12.9	16.1	3.2	00.0	3.2	6.5	6.5	3.2	3.2	6.5	00.0	3.2	00.0	6.5	12.9	12.9	3.2	100.
20	19.4	9.7	00.0	00.0	6.5	6.5	3.2	3.2	3.2	6.5	00.0	3.2	6.5	3.2	12.9	12.9	3.2	100.
21	19.4	6.5	00.0	00.0	6.5	3.2	6.5	6.5	00.0	6.5	3.2	3.2	00.0	9.7	12.9	12.9	3.2	100.
22	12.9	9.7	3.2	00.0	3.2	6.5	6.5	3.2	6.5	6.5	00.0	3.2	3.2	6.5	12.9	6.5	9.7	100.
23	16.1	3.2	00.0	6.5	00.0	3.2	6.5	6.5	6.5	3.2	00.0	6.5	00.0	9.7	19.4	9.7	3.2	100.
24	16.1	3.2	00.0	3.2	3.2	6.5	3.2	6.5	12.9	00.0	3.2	3.2	3.2	9.7	6.5	16.1	3.2	100.
ALL	14.7	6.7	2.7	2.4	5.8	7.8	6.7	5.1	6.3	3.9	1.6	3.0	3.8	7.4	12.4	8.3	1.5	100.

NUMBER OF OBS = 744

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

JAN-MAR

	WIND DIRECTION																	
HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	15.6	7.8	3.3	00.0	5.6	6.7	5.6	7.8	3.3	3.3	4.4	6.7	4.4	1.1	11.1	13.3	00.0	100.
2	17.8	7.8	2.2	00.0	4.4	8.9	4.4	6.7	6.7	3.3	4.4	00.0	4.4	4.4	8.9	15.6	00.0	100.
3	15.6	10.0	6.7	2.2	2.2	6.7	8.9	3.3	10.0	6.7	1.1	00.0	00.0	5.6	11.1	10.0	00.0	100.
4	12.2	10.0	5.6	2.2	2.2	7.8	6.7	5.6	6.7	6.7	2.2	1.1	1.1	6.7	14.4	8.9	00.0	100.
5	13.3	10.0	3.3	4.4	1.1	11.1	6.7	3.3	10.0	5.6	2.2	1.1	3.3	4.4	10.0	10.0	00.0	100.
6	11.1	11.1	00.0	4.4	2.2	11.1	4.4	3.3	10.0	3.3	4.4	1.1	00.0	4.4	14.4	11.1	3.3	100.
7	10.0	10.0	2.2	2.2	1.1	12.2	10.0	1.1	10.0	3.3	3.3	2.2	1.1	6.7	11.1	12.2	1.1	100.
8	14.4	7.8	3.3	2.2	3.3	6.7	10.0	6.7	10.0	2.2	2.2	1.1	6.7	4.4	11.1	7.8	00.0	100.
9	12.2	8.9	2.2	3.3	2.2	8.9	8.9	4.4	8.9	3.3	4.4	4.4	2.2	8.9	6.7	10.0	00.0	100.
10	11.1	6.7	4.4	2.2	5.6	5.6	11.1	4.4	7.8	4.4	4.4	2.2	2.2	7.8	7.8	12.2	00.0	100.
11	11.1	5.6	6.7	4.4	2.2	10.0	13.3	00.0	6.7	4.4	4.4	2.2	3.3	7.8	6.7	11.1	00.0	100.
12	12.2	7.8	1.1	4.4	7.8	6.7	8.9	3.3	4.4	3.3	4.4	7.8	3.3	4.4	11.1	8.9	00.0	100.
13	11.1	6.7	2.2	3.3	7.8	6.7	11.1	4.4	2.2	3.3	4.4	5.6	5.6	3.3	11.1	11.1	00.0	100.
14	11.1	7.8	2.2	8.9	6.7	6.7	5.6	3.3	4.4	3.3	2.2	6.7	4.4	6.7	10.0	10.0	00.0	100.
15	10.0	13.3	2.2	6.7	5.6	4.4	7.8	3.3	5.6	2.2	5.6	4.4	3.3	6.7	11.1	7.8	00.0	100.
16	12.2	11.1	1.1	4.4	4.4	5.6	6.7	7.8	4.4	2.2	5.6	3.3	1.1	5.6	16.7	7.8	00.0	100.
17	11.1	12.2	4.4	6.7	5.6	4.4	4.4	5.6	4.4	3.3	7.8	1.1	2.2	4.4	12.2	10.0	00.0	100.
18	16.7	7.8	3.3	4.4	4.4	5.6	5.6	6.7	2.2	4.4	7.8	2.2	1.1	2.2	13.3	12.2	00.0	100.
19	16.7	8.9	3.3	4.4	3.3	3.3	4.4	5.6	6.7	3.3	5.6	2.2	1.1	4.4	11.1	14.4	1.1	100.
20	20.0	8.9	00.0	2.2	6.7	4.4	3.3	8.9	3.3	5.6	2.2	2.2	4.4	3.3	11.1	12.2	1.1	100.
21	18.9	7.8	2.2	3.3	5.6	2.2	5.6	7.8	3.3	3.3	4.4	2.2	00.0	8.9	13.3	10.0	1.1	100.
22	16.7	8.9	3.3	1.1	3.3	5.6	6.7	6.7	4.4	3.3	4.4	3.3	3.3	4.4	12.2	8.9	3.3	100.
23	13.3	7.8	2.2	3.3	1.1	7.8	6.7	4.4	8.9	2.2	4.4	3.3	1.1	6.7	12.2	13.3	1.1	100.
24	14.4	10.0	2.2	1.1	2.2	6.7	6.7	5.6	8.9	1.1	5.6	3.3	3.3	7.8	7.8	11.1	2.2	100.
ALL	13.7	8.9	2.9	3.4	4.0	6.9	7.2	5.0	6.4	3.7	4.3	2.9	2.6	5.5	11.1	10.8	.6	100.

NUMBER OF OBS = 2160

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

APRIL

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	3.3	10.0	00.0	3.3	6.7	3.3	10.0	3.3	20.0	13.3	3.3	00.0	3.3	00.0	10.0	6.7	3.3	100.
2	10.0	3.3	3.3	6.7	13.3	00.0	6.7	10.0	6.7	10.0	6.7	3.3	3.3	3.3	6.7	3.3	3.3	100.
3	13.3	00.0	00.0	10.0	10.0	00.0	3.3	10.0	13.3	13.3	00.0	6.7	00.0	6.7	3.3	6.7	3.3	100.
4	20.0	3.3	00.0	00.0	16.7	00.0	3.3	10.0	10.0	13.3	6.7	6.7	00.0	3.3	3.3	3.3	00.0	100.
5	26.7	3.3	00.0	00.0	6.7	10.0	3.3	16.7	10.0	3.3	00.0	00.0	10.0	00.0	3.3	6.7	00.0	100.
6	6.7	6.7	00.0	00.0	6.7	10.0	3.3	16.7	10.0	6.7	6.7	00.0	3.3	6.7	3.3	13.3	00.0	100.
7	10.0	6.7	3.3	00.0	10.0	3.3	00.0	16.7	13.3	10.0	3.3	00.0	6.7	6.7	00.0	10.0	00.0	100.
8	10.0	10.0	00.0	00.0	00.0	10.0	6.7	20.0	13.3	3.3	6.7	00.0	3.3	00.0	3.3	13.3	00.0	100.
9	10.0	13.3	00.0	00.0	00.0	13.3	3.3	13.3	13.3	10.0	3.3	00.0	3.3	3.3	3.3	10.0	00.0	100.
10	26.7	3.3	00.0	00.0	6.7	10.0	6.7	3.3	13.3	13.3	00.0	00.0	3.3	10.0	3.3	00.0	00.0	100.
11	20.0	10.0	00.0	00.0	10.0	3.3	13.3	3.3	13.3	6.7	6.7	00.0	3.3	3.3	3.3	3.3	00.0	100.
12	10.0	10.0	10.0	00.0	00.0	16.7	10.0	00.0	6.7	20.0	00.0	00.0	3.3	00.0	6.7	6.7	00.0	100.
13	20.0	6.7	6.7	00.0	00.0	6.7	20.0	00.0	10.0	10.0	6.7	00.0	3.3	00.0	6.7	3.3	00.0	100.
14	16.7	6.7	00.0	3.3	00.0	13.3	13.3	3.3	10.0	6.7	3.3	6.7	00.0	3.3	6.7	6.7	00.0	100.
15	16.7	3.3	00.0	3.3	00.0	16.7	13.3	3.3	10.0	6.7	3.3	00.0	3.3	3.3	6.7	10.0	00.0	100.
16	13.3	3.3	3.3	00.0	6.7	6.7	20.0	3.3	10.0	6.7	3.3	00.0	00.0	6.7	3.3	13.3	00.0	100.
17	16.7	00.0	6.7	6.7	10.0	10.0	10.0	3.3	6.7	6.7	00.0	3.3	00.0	3.3	6.7	10.0	00.0	100.
18	10.0	3.3	6.7	6.7	6.7	10.0	13.3	3.3	6.7	3.3	00.0	3.3	00.0	3.3	00.0	23.3	00.0	100.
19	10.0	6.7	6.7	6.7	3.3	13.3	13.3	00.0	10.0	3.3	00.0	3.3	00.0	3.3	6.7	13.3	00.0	100.
20	6.7	3.3	3.3	00.0	6.7	6.7	13.3	20.0	3.3	00.0	00.0	6.7	00.0	6.7	10.0	13.3	00.0	100.
21	13.3	6.7	3.3	00.0	10.0	6.7	3.3	20.0	10.0	3.3	3.3	00.0	3.3	6.7	6.7	3.3	00.0	100.
22	13.3	3.3	3.3	10.0	00.0	6.7	3.3	13.3	16.7	3.3	6.7	3.3	00.0	6.7	6.7	3.3	00.0	100.
23	13.3	3.3	3.3	10.0	00.0	6.7	3.3	16.7	13.3	6.7	00.0	3.3	00.0	6.7	6.7	3.3	3.3	100.
24	13.3	3.3	3.3	6.7	6.7	3.3	6.7	3.3	26.7	3.3	3.3	3.3	3.3	00.0	6.7	6.7	00.0	100.
ALL	13.8	5.4	2.6	3.1	5.7	7.8	8.5	8.9	11.5	7.6	3.1	2.1	2.4	3.9	5.1	8.1	.6	100.

NUMBER OF OBS = 720

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

MAY

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	3.2	00.0	9.7	3.2	3.2	00.0	9.7	6.5	16.1	12.9	3.2	00.0	3.2	6.5	12.9	9.7	00.0	100.
2	12.9	00.0	9.7	3.2	6.5	6.5	00.0	6.5	19.4	6.5	6.5	00.0	6.5	3.2	3.2	9.7	00.0	100.
3	9.7	3.2	3.2	3.2	12.9	00.0	3.2	9.7	16.1	12.9	00.0	00.0	9.7	00.0	9.7	6.5	00.0	100.
4	12.9	3.2	6.5	6.5	9.7	00.0	00.0	3.2	12.9	12.9	6.5	3.2	3.2	3.2	6.5	9.7	00.0	100.
5	6.5	9.7	3.2	6.5	6.5	3.2	00.0	3.2	9.7	12.9	12.9	3.2	3.2	3.2	3.2	12.9	00.0	100.
6	12.9	3.2	3.2	3.2	3.2	00.0	3.2	00.0	16.1	19.4	6.5	6.5	6.5	3.2	3.2	9.7	00.0	100.
7	6.5	9.7	6.5	00.0	6.5	3.2	3.2	9.7	12.9	16.1	6.5	00.0	3.2	6.5	3.2	6.5	00.0	100.
8	12.9	9.7	00.0	6.5	3.2	9.7	6.5	12.9	3.2	9.7	9.7	3.2	00.0	6.5	3.2	3.2	00.0	100.
9	9.7	12.9	3.2	00.0	12.9	12.9	3.2	6.5	6.5	6.5	9.7	00.0	3.2	3.2	9.7	00.0	00.0	100.
10	12.9	3.2	3.2	3.2	9.7	6.5	3.2	16.1	9.7	6.5	9.7	00.0	00.0	6.5	6.5	3.2	00.0	100.
11	9.7	3.2	6.5	3.2	6.5	12.9	3.2	3.2	9.7	16.1	3.2	6.5	00.0	9.7	3.2	3.2	00.0	100.
12	12.9	3.2	3.2	9.7	3.2	9.7	6.5	3.2	12.9	9.7	6.5	3.2	3.2	9.7	00.0	3.2	00.0	100.
13	9.7	3.2	00.0	9.7	9.7	19.4	00.0	00.0	9.7	9.7	3.2	6.5	3.2	3.2	9.7	3.2	00.0	100.
14	9.7	3.2	00.0	6.5	9.7	16.1	6.5	00.0	6.5	3.2	19.4	00.0	3.2	6.5	00.0	9.7	00.0	100.
15	12.9	6.5	00.0	3.2	6.5	16.1	3.2	3.2	3.2	12.9	12.9	00.0	6.5	6.5	3.2	3.2	00.0	100.
16	16.1	9.7	3.2	3.2	3.2	9.7	9.7	3.2	6.5	3.2	16.1	3.2	00.0	3.2	6.5	3.2	00.0	100.
17	16.1	12.9	00.0	3.2	6.5	3.2	19.4	3.2	6.5	6.5	9.7	00.0	3.2	3.2	6.5	00.0	00.0	100.
18	16.1	9.7	6.5	3.2	6.5	3.2	22.6	00.0	12.9	3.2	3.2	3.2	3.2	00.0	00.0	6.5	00.0	100.
19	6.5	9.7	00.0	9.7	12.9	3.2	19.4	00.0	9.7	9.7	00.0	3.2	3.2	00.0	3.2	9.7	00.0	100.
20	3.2	3.2	6.5	6.5	6.5	3.2	6.5	16.1	9.7	3.2	3.2	00.0	3.2	3.2	6.5	19.4	00.0	100.
21	3.2	3.2	3.2	6.5	9.7	00.0	3.2	12.9	9.7	9.7	3.2	00.0	00.0	9.7	9.7	16.1	00.0	100.
22	6.5	6.5	3.2	3.2	6.5	3.2	3.2	12.9	3.2	22.6	00.0	00.0	3.2	12.9	3.2	9.7	00.0	100.
23	6.5	6.5	6.5	3.2	3.2	3.2	3.2	9.7	19.4	9.7	3.2	00.0	3.2	3.2	3.2	16.1	00.0	100.
24	3.2	9.7	3.2	3.2	3.2	3.2	3.2	3.2	25.8	9.7	00.0	3.2	12.9	3.2	3.2	9.7	00.0	100.
ALL	9.7	6.0	3.8	4.6	7.0	6.2	5.9	6.0	11.2	10.2	6.5	1.9	3.6	4.8	5.0	7.7	00.0	100.

NUMBER OF OBS = 744

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

JUNE

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	6.7	00.0	3.3	3.3	00.0	3.3	6.7	16.7	6.7	20.0	6.7	3.3	00.0	6.7	13.3	3.3	00.0	100.
2	00.0	3.3	6.7	00.0	00.0	6.7	6.7	16.7	10.0	10.0	6.7	6.7	00.0	6.7	10.0	10.0	00.0	100.
3	3.3	00.0	3.3	00.0	6.7	3.3	3.3	16.7	10.0	10.0	16.7	00.0	3.3	00.0	20.0	3.3	00.0	100.
4	6.7	00.0	3.3	00.0	6.7	00.0	00.0	13.3	20.0	6.7	3.3	6.7	6.7	13.3	6.7	3.3	3.3	100.
5	3.3	3.3	3.3	3.3	00.0	00.0	6.7	10.0	10.0	10.0	10.0	3.3	3.3	3.3	10.0	13.3	6.7	100.
6	10.0	3.3	3.3	00.0	3.3	3.3	3.3	10.0	20.0	6.7	3.3	6.7	3.3	10.0	6.7	6.7	00.0	100.
7	3.3	3.3	00.0	00.0	6.7	3.3	3.3	6.7	23.3	3.3	13.3	3.3	10.0	00.0	6.7	13.3	00.0	100.
8	3.3	3.3	00.0	3.3	00.0	6.7	00.0	6.7	13.3	16.7	10.0	6.7	00.0	3.3	6.7	20.0	00.0	100.
9	3.3	6.7	00.0	00.0	3.3	13.3	10.0	00.0	6.7	20.0	6.7	3.3	3.3	3.3	3.3	16.7	00.0	100.
10	13.3	3.3	00.0	00.0	6.7	10.0	6.7	3.3	13.3	10.0	3.3	3.3	6.7	00.0	3.3	16.7	00.0	100.
11	6.7	10.0	00.0	00.0	10.0	13.3	3.3	3.3	13.3	10.0	3.3	00.0	10.0	00.0	00.0	16.7	00.0	100.
12	16.7	3.3	3.3	6.7	3.3	20.0	00.0	3.3	16.7	6.7	3.3	00.0	10.0	00.0	00.0	6.7	00.0	100.
13	16.7	3.3	6.7	00.0	6.7	16.7	6.7	3.3	6.7	20.0	3.3	00.0	3.3	3.3	00.0	3.3	00.0	100.
14	16.7	00.0	3.3	6.7	10.0	13.3	6.7	6.7	3.3	20.0	00.0	00.0	3.3	00.0	3.3	6.7	00.0	100.
15	13.3	3.3	00.0	3.3	3.3	23.3	10.0	6.7	3.3	10.0	6.7	00.0	3.3	3.3	00.0	10.0	00.0	100.
16	16.7	00.0	3.3	3.3	6.7	16.7	10.0	6.7	3.3	16.7	3.3	00.0	6.7	00.0	00.0	6.7	00.0	100.
17	10.0	6.7	00.0	00.0	6.7	13.3	16.7	3.3	3.3	23.3	3.3	3.3	00.0	00.0	00.0	10.0	00.0	100.
18	10.0	00.0	6.7	00.0	6.7	6.7	16.7	10.0	3.3	20.0	3.3	3.3	3.3	00.0	00.0	10.0	00.0	100.
19	10.0	3.3	3.3	00.0	6.7	3.3	10.0	13.3	10.0	13.3	3.3	3.3	00.0	3.3	3.3	13.3	00.0	100.
20	10.0	3.3	00.0	00.0	3.3	10.0	10.0	6.7	16.7	6.7	6.7	6.7	00.0	6.7	3.3	10.0	00.0	100.
21	6.7	3.3	6.7	00.0	3.3	10.0	3.3	6.7	20.0	10.0	00.0	3.3	3.3	6.7	6.7	10.0	00.0	100.
22	3.3	00.0	3.3	3.3	6.7	10.0	16.7	10.0	10.0	6.7	3.3	00.0	3.3	00.0	13.3	10.0	00.0	100.
23	3.3	3.3	3.3	6.7	3.3	3.3	20.0	6.7	10.0	13.3	00.0	00.0	00.0	13.3	6.7	6.7	00.0	100.
24	10.0	00.0	00.0	6.7	00.0	6.7	10.0	6.7	13.3	16.7	00.0	00.0	3.3	6.7	13.3	6.7	00.0	100.
ALL	8.5	2.8	2.6	1.9	4.6	9.0	7.8	8.1	11.1	12.8	5.0	2.6	3.6	3.8	5.7	9.7	.4	100.

NUMBER OF OBS = 720

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

APR-JUN

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	4.4	3.3	4.4	3.3	3.3	2.2	8.8	8.8	14.3	15.4	4.4	1.1	2.2	4.4	12.1	6.6	1.1	100.
2	7.7	2.2	6.6	3.3	6.6	4.4	4.4	11.0	12.1	8.8	6.6	3.3	3.3	4.4	6.6	7.7	1.1	100.
3	8.8	1.1	2.2	4.4	9.9	1.1	3.3	12.1	13.2	12.1	5.5	2.2	4.4	2.2	11.0	5.5	1.1	100.
4	13.2	2.2	3.3	2.2	11.0	00.0	1.1	8.8	14.3	11.0	5.5	5.5	3.3	6.6	5.5	5.5	1.1	100.
5	12.1	5.5	2.2	3.3	4.4	4.4	3.3	9.9	9.9	8.8	7.7	2.2	5.5	2.2	5.5	11.0	2.2	100.
6	9.9	4.4	2.2	1.1	4.4	4.4	3.3	8.8	15.4	11.0	5.5	4.4	4.4	6.6	4.4	9.9	00.0	100.
7	6.6	6.6	3.3	00.0	7.7	3.3	2.2	11.0	16.5	9.9	7.7	1.1	6.6	4.4	3.3	9.9	00.0	100.
8	8.8	7.7	00.0	3.3	1.1	8.8	4.4	13.2	9.9	9.9	8.8	3.3	1.1	3.3	4.4	12.1	00.0	100.
9	7.7	11.0	1.1	00.0	5.5	13.2	5.5	6.6	8.8	12.1	6.6	1.1	3.3	3.3	5.5	8.8	00.0	100.
10	17.6	3.3	1.1	1.1	7.7	8.8	5.5	7.7	12.1	9.9	4.4	1.1	3.3	5.5	4.4	6.6	00.0	100.
11	12.1	7.7	2.2	1.1	8.8	9.9	6.6	3.3	12.1	11.0	4.4	2.2	4.4	4.4	2.2	7.7	00.0	100.
12	13.2	5.5	5.5	5.5	2.2	15.4	5.5	2.2	12.1	12.1	3.3	1.1	5.5	3.3	2.2	5.5	00.0	100.
13	15.4	4.4	4.4	3.3	5.5	14.3	8.8	1.1	8.8	13.2	4.4	2.2	3.3	2.2	5.5	3.3	00.0	100.
14	14.3	3.3	1.1	5.5	6.6	14.3	8.8	3.3	6.6	9.9	7.7	2.2	2.2	3.3	3.3	7.7	00.0	100.
15	14.3	4.4	00.0	3.3	3.3	18.7	8.8	4.4	5.5	9.9	7.7	00.0	4.4	4.4	3.3	7.7	00.0	100.
16	15.4	4.4	3.3	2.2	5.5	11.0	13.2	4.4	6.6	8.8	7.7	1.1	2.2	3.3	3.3	7.7	00.0	100.
17	14.3	6.6	2.2	3.3	7.7	8.8	15.4	3.3	5.5	12.1	4.4	2.2	1.1	2.2	4.4	6.6	00.0	100.
18	12.1	4.4	6.6	3.3	6.6	6.6	17.6	4.4	7.7	8.8	2.2	3.3	2.2	1.1	00.0	13.2	00.0	100.
19	8.8	6.6	3.3	5.5	7.7	6.6	14.3	4.4	9.9	8.8	1.1	3.3	1.1	2.2	4.4	12.1	00.0	100.
20	6.6	3.3	3.3	2.2	5.5	6.6	9.9	14.3	9.9	3.3	3.3	4.4	1.1	5.5	6.6	14.3	00.0	100.
21	7.7	4.4	4.4	2.2	7.7	5.5	3.3	13.2	13.2	7.7	2.2	1.1	2.2	7.7	7.7	9.9	00.0	100.
22	7.7	3.3	3.3	5.5	4.4	6.6	7.7	12.1	9.9	11.0	3.3	1.1	2.2	6.6	7.7	7.7	00.0	100.
23	7.7	4.4	4.4	6.6	2.2	4.4	8.8	11.0	14.3	9.9	1.1	1.1	1.1	7.7	5.5	8.8	1.1	100.
24	8.8	4.4	2.2	5.5	3.3	4.4	6.6	4.4	22.0	9.9	1.1	2.2	6.6	3.3	7.7	7.7	00.0	100.
ALL	10.6	4.8	3.0	3.2	5.8	7.6	7.4	7.6	11.3	10.2	4.9	2.2	3.2	4.2	5.3	8.5	.3	100.

NUMBER OF OBS = 2184

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

JAN-JUN

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	9.9	5.5	3.9	1.7	4.4	4.4	7.2	8.3	8.8	9.4	4.4	3.9	3.3	2.8	11.6	9.9	.6	100.
2	12.7	5.0	4.4	1.7	5.5	6.6	4.4	8.8	9.4	6.1	5.5	1.7	3.9	4.4	7.7	11.6	.6	100.
3	12.2	5.5	4.4	3.3	6.1	3.9	6.1	7.7	11.6	9.4	3.3	1.1	2.2	3.9	11.0	7.7	.6	100.
4	12.7	6.1	4.4	2.2	6.6	3.9	3.9	7.2	10.5	8.8	3.9	3.3	2.2	6.6	9.9	7.2	.6	100.
5	12.7	7.7	2.8	3.9	2.8	7.7	5.0	6.6	9.9	7.2	5.0	1.7	4.4	3.3	7.7	10.5	1.1	100.
6	10.5	7.7	1.1	2.8	3.3	7.7	3.9	6.1	12.7	7.2	5.0	2.8	2.2	5.5	9.4	10.5	1.7	100.
7	8.3	8.3	2.8	1.1	4.4	7.7	6.1	6.1	13.3	6.6	5.5	1.7	3.9	5.5	7.2	11.0	.6	100.
8	11.6	7.7	1.7	2.8	2.2	7.7	7.2	9.9	9.9	6.1	5.5	2.2	3.9	3.9	7.7	9.9	00.0	100.
9	9.9	9.9	1.7	1.7	3.9	11.0	7.2	5.5	8.8	7.7	5.5	2.8	2.8	6.1	6.1	9.4	00.0	100.
10	14.4	5.0	2.8	1.7	6.6	7.2	8.3	6.1	9.9	7.2	4.4	1.7	2.8	6.6	6.1	9.4	00.0	100.
11	11.6	6.6	4.4	2.8	5.5	9.9	9.9	1.7	9.4	7.7	4.4	2.2	3.9	6.1	4.4	9.4	00.0	100.
12	12.7	6.6	3.3	5.0	5.0	11.0	7.2	2.8	8.3	7.7	3.9	4.4	4.4	3.9	6.6	7.2	00.0	100.
13	13.3	5.5	3.3	3.3	6.6	10.5	9.9	2.8	5.5	8.3	4.4	3.9	4.4	2.8	8.3	7.2	00.0	100.
14	12.7	5.5	1.7	7.2	6.6	10.5	7.2	3.3	5.5	6.6	5.0	4.4	3.3	5.0	6.6	8.8	00.0	100.
15	12.2	8.8	1.1	5.0	4.4	11.6	8.3	3.9	5.5	6.1	6.6	2.2	3.9	5.5	7.2	7.7	00.0	100.
16	13.8	7.7	2.2	3.3	5.0	8.3	9.9	6.1	5.5	5.5	6.6	2.2	1.7	4.4	9.9	7.7	00.0	100.
17	12.7	9.4	3.3	5.0	6.6	6.6	9.9	4.4	5.0	7.7	6.1	1.7	1.7	3.3	8.3	8.3	00.0	100.
18	14.4	6.1	5.0	3.9	5.5	6.1	11.6	5.5	5.0	6.6	5.0	2.8	1.7	1.7	6.6	12.7	00.0	100.
19	12.7	7.7	3.3	5.0	5.5	5.0	9.4	5.0	8.3	6.1	3.3	2.8	1.1	3.3	7.7	13.3	.6	100.
20	13.3	6.1	1.7	2.2	6.1	5.5	6.6	11.6	6.6	4.4	2.8	3.3	2.8	4.4	8.8	13.3	.6	100.
21	13.3	6.1	3.3	2.8	6.6	3.9	4.4	10.5	8.3	5.5	3.3	1.7	1.1	8.3	10.5	9.9	.6	100.
22	12.2	6.1	3.3	3.3	3.9	6.1	7.2	9.4	7.2	7.2	3.9	2.2	2.8	5.5	9.9	8.3	1.7	100.
23	10.5	6.1	3.3	5.0	1.7	6.1	7.7	7.7	11.6	6.1	2.8	2.2	1.1	7.2	8.8	11.0	1.1	100.
24	11.6	7.2	2.2	3.3	2.8	5.5	6.6	5.0	15.5	5.5	3.3	2.8	5.0	5.5	7.7	9.4	1.1	100.
ALL	12.2	6.8	3.0	3.3	4.9	7.3	7.3	6.3	8.8	7.0	4.6	2.6	2.9	4.8	8.2	9.6	.5	100.

NUMBER OF OBS = 4344

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

JULY

	WIND DIRECTION																
HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	6.5	3.2	3.2	3.2	3.2	3.2	6.5	3.2	29.0	16.1	3.2	00.0	3.2	6.5	00.0	3.2	6.5	100.
2	3.2	6.5	6.5	00.0	00.0	6.5	3.2	3.2	29.0	22.6	6.5	00.0	00.0	9.7	00.0	3.2	00.0	100.
3	6.5	00.0	6.5	00.0	3.2	3.2	00.0	3.2	22.6	29.0	00.0	6.5	3.2	00.0	6.5	6.5	3.2	100.
4	3.2	00.0	00.0	9.7	00.0	6.5	3.2	3.2	22.6	22.6	3.2	3.2	6.5	00.0	6.5	6.5	3.2	100.
5	3.2	00.0	6.5	00.0	3.2	3.2	3.2	00.0	25.8	22.6	6.5	9.7	3.2	00.0	3.2	9.7	00.0	100.
6	3.2	3.2	00.0	00.0	3.2	6.5	00.0	12.9	9.7	22.6	3.2	6.5	00.0	00.0	12.9	12.9	3.2	100.
7	6.5	00.0	3.2	00.0	00.0	3.2	6.5	16.1	12.9	25.8	3.2	00.0	00.0	6.5	6.5	9.7	00.0	100.
8	3.2	00.0	00.0	3.2	3.2	3.2	3.2	16.1	19.4	12.9	6.5	6.5	6.5	00.0	3.2	12.9	00.0	100.
9	9.7	6.5	00.0	3.2	00.0	6.5	00.0	16.1	25.8	6.5	12.9	3.2	00.0	00.0	6.5	3.2	00.0	100.
10	9.7	3.2	00.0	3.2	3.2	6.5	3.2	12.9	22.6	12.9	6.5	3.2	3.2	00.0	3.2	6.5	00.0	100.
11	16.1	00.0	00.0	00.0	9.7	3.2	9.7	12.9	12.9	19.4	3.2	3.2	00.0	3.2	3.2	3.2	00.0	100.
12	12.9	00.0	3.2	00.0	3.2	6.5	9.7	12.9	25.8	9.7	3.2	3.2	00.0	00.0	6.5	3.2	00.0	100.
13	16.1	6.5	00.0	3.2	00.0	00.0	19.4	6.5	25.8	12.9	6.5	00.0	00.0	00.0	3.2	00.0	00.0	100.
14	16.1	3.2	3.2	00.0	00.0	3.2	16.1	9.7	25.8	16.1	3.2	00.0	00.0	00.0	3.2	00.0	00.0	100.
15	16.1	3.2	00.0	00.0	6.5	00.0	19.4	9.7	29.0	9.7	3.2	00.0	00.0	00.0	3.2	00.0	00.0	100.
16	19.4	00.0	3.2	3.2	00.0	3.2	22.6	9.7	19.4	9.7	3.2	00.0	00.0	00.0	3.2	3.2	00.0	100.
17	12.9	3.2	3.2	3.2	00.0	3.2	12.9	19.4	16.1	9.7	3.2	00.0	00.0	00.0	00.0	12.9	00.0	100.
18	9.7	9.7	00.0	3.2	00.0	3.2	9.7	19.4	22.6	6.5	3.2	00.0	00.0	00.0	00.0	12.9	00.0	100.
19	9.7	3.2	00.0	00.0	3.2	3.2	12.9	16.1	16.1	12.9	3.2	00.0	00.0	00.0	00.0	19.4	00.0	100.
20	12.9	00.0	00.0	00.0	6.5	3.2	6.5	22.6	12.9	12.9	3.2	00.0	00.0	00.0	3.2	16.1	00.0	100.
21	3.3	3.3	00.0	00.0	3.3	6.7	6.7	13.3	20.0	10.0	00.0	00.0	3.3	6.7	13.3	10.0	00.0	100.
22	3.3	10.0	00.0	00.0	6.7	3.3	3.3	13.3	16.7	6.7	6.7	3.3	3.3	6.7	3.3	13.3	00.0	100.
23	9.7	00.0	3.2	00.0	6.5	6.5	3.2	12.9	22.6	6.5	00.0	3.2	6.5	6.5	6.5	6.5	00.0	100.
24	9.7	3.2	3.2	6.5	00.0	3.2	9.7	3.2	19.4	16.1	6.5	3.2	00.0	6.5	3.2	00.0	6.5	100.
ALL	9.3	2.8	1.9	1.8	2.7	4.0	8.0	11.2	21.0	14.7	4.2	2.3	1.6	2.2	4.2	7.3	.9	100.

NUMBER OF OBS = 742

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

AUGUST

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	00.0	3.2	00.0	12.9	3.2	22.6	12.9	00.0	9.7	00.0	6.5	00.0	3.2	9.7	9.7	3.2	3.2	100.
2	00.0	3.2	3.2	9.7	3.2	22.6	6.5	6.5	6.5	3.2	6.5	3.2	9.7	6.5	6.5	3.2	00.0	100.
3	00.0	00.0	3.2	9.7	6.5	22.6	6.5	3.2	6.5	6.5	3.2	00.0	3.2	6.5	12.9	3.2	6.5	100.
4	3.2	00.0	3.2	3.2	6.5	16.1	9.7	9.7	6.5	6.5	6.5	3.2	3.2	6.5	12.9	3.2	00.0	100.
5	3.2	00.0	00.0	3.2	3.2	22.6	3.2	3.2	19.4	9.7	6.5	6.5	3.2	6.5	6.5	3.2	00.0	100.
6	3.2	00.0	00.0	6.5	3.2	12.9	12.9	3.2	3.2	12.9	6.5	3.2	3.2	16.1	6.5	3.2	3.2	100.
7	6.5	00.0	3.2	00.0	12.9	12.9	6.5	3.2	9.7	12.9	9.7	3.2	9.7	3.2	6.5	00.0	00.0	100.
8	00.0	00.0	6.5	6.5	9.7	9.7	6.5	3.2	12.9	6.5	12.9	00.0	00.0	3.2	9.7	6.5	6.5	100.
9	3.2	3.2	6.5	3.2	9.7	3.2	6.5	6.5	3.2	6.5	19.4	3.2	3.2	3.2	6.5	9.7	3.2	100.
10	6.5	3.2	3.2	9.7	12.9	12.9	6.5	6.5	3.2	6.5	6.5	3.2	3.2	00.0	16.1	00.0	00.0	100.
11	9.7	00.0	3.2	6.5	6.5	19.4	6.5	9.7	12.9	6.5	3.2	00.0	3.2	3.2	6.5	3.2	00.0	100.
12	3.2	6.5	00.0	6.5	12.9	16.1	9.7	6.5	9.7	3.2	6.5	3.2	6.5	00.0	6.5	3.2	00.0	100.
13	3.2	3.2	6.5	3.2	6.5	19.4	12.9	6.5	19.4	00.0	3.2	6.5	00.0	00.0	00.0	9.7	00.0	100.
14	6.5	3.2	00.0	3.2	9.7	12.9	12.9	12.9	12.9	9.7	3.2	6.5	00.0	00.0	3.2	3.2	00.0	100.
15	3.2	6.5	00.0	3.2	9.7	6.5	19.4	9.7	19.4	3.2	00.0	9.7	00.0	3.2	00.0	6.5	00.0	100.
16	6.5	3.2	6.5	9.7	3.2	9.7	16.1	12.9	9.7	3.2	00.0	6.5	3.2	3.2	3.2	3.2	00.0	100.
17	6.5	6.5	9.7	3.2	6.5	9.7	22.6	00.0	9.7	3.2	6.5	3.2	6.5	00.0	6.5	00.0	00.0	100.
18	9.7	12.9	00.0	3.2	6.5	12.9	16.1	3.2	12.9	3.2	6.5	00.0	6.5	3.2	3.2	00.0	00.0	100.
19	3.2	6.5	00.0	3.2	16.1	16.1	9.7	3.2	6.5	9.7	3.2	00.0	3.2	3.2	6.5	9.7	00.0	100.
20	6.5	3.2	6.5	3.2	22.6	16.1	3.2	00.0	6.5	6.5	6.5	00.0	3.2	3.2	6.5	6.5	00.0	100.
21	9.7	00.0	00.0	9.7	12.9	19.4	6.5	3.2	6.5	3.2	3.2	00.0	6.5	12.9	00.0	6.5	00.0	100.
22	6.5	00.0	3.2	3.2	16.1	19.4	6.5	3.2	00.0	3.2	00.0	9.7	6.5	6.5	9.7	6.5	00.0	100.
23	3.2	3.2	3.2	3.2	12.9	16.1	9.7	3.2	00.0	6.5	00.0	6.5	3.2	6.5	16.1	3.2	3.2	100.
24	00.0	3.2	00.0	6.5	9.7	12.9	16.1	3.2	00.0	9.7	3.2	3.2	3.2	6.5	6.5	12.9	3.2	100.
ALL	4.3	3.0	2.8	5.5	9.3	15.2	10.2	5.1	8.6	5.9	5.4	3.4	3.9	4.7	7.0	4.6	1.2	100.

NUMBER OF OBS = 744

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

SEPTEMBER

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	10.0	3.3	3.3	00.0	3.3	6.7	3.3	3.3	33.3	10.0	3.3	6.7	6.7	3.3	00.0	00.0	3.3	100.
2	3.3	6.7	00.0	00.0	00.0	13.3	3.3	00.0	36.7	16.7	00.0	00.0	3.3	3.3	6.7	3.3	3.3	100.
3	13.3	3.3	00.0	00.0	00.0	10.0	6.7	3.3	40.0	10.0	10.0	00.0	00.0	3.3	00.0	00.0	00.0	100.
4	10.0	6.7	00.0	00.0	6.7	00.0	10.0	13.3	30.0	16.7	00.0	3.3	00.0	3.3	00.0	00.0	00.0	100.
5	00.0	10.0	00.0	00.0	00.0	6.7	10.0	3.3	40.0	16.7	00.0	00.0	3.3	3.3	3.3	3.3	00.0	100.
6	3.3	3.3	00.0	00.0	6.7	00.0	10.0	6.7	33.3	16.7	3.3	3.3	00.0	6.7	3.3	3.3	00.0	100.
7	00.0	6.7	00.0	3.3	00.0	10.0	3.3	16.7	23.3	13.3	6.7	00.0	6.7	3.3	3.3	3.3	00.0	100.
8	3.3	10.0	3.3	00.0	00.0	6.7	00.0	16.7	26.7	13.3	3.3	6.7	00.0	6.7	00.0	00.0	3.3	100.
9	00.0	10.0	3.3	3.3	6.7	3.3	6.7	10.0	33.3	00.0	6.7	3.3	3.3	3.3	3.3	00.0	3.3	100.
10	3.3	6.7	6.7	00.0	3.3	6.7	6.7	16.7	30.0	3.3	00.0	3.3	6.7	00.0	00.0	6.7	00.0	100.
11	6.7	10.0	00.0	3.3	6.7	3.3	6.7	13.3	23.3	13.3	3.3	3.3	00.0	6.7	00.0	00.0	00.0	100.
12	10.0	00.0	3.3	3.3	6.7	6.7	3.3	10.0	30.0	13.3	00.0	3.3	3.3	00.0	3.3	3.3	00.0	100.
13	10.0	00.0	3.3	3.3	10.0	6.7	6.7	6.7	26.7	13.3	00.0	3.3	3.3	6.7	00.0	00.0	00.0	100.
14	10.0	3.3	00.0	6.7	3.3	6.7	13.3	00.0	30.0	16.7	00.0	00.0	3.3	6.7	00.0	00.0	00.0	100.
15	6.7	00.0	3.3	3.3	00.0	6.7	16.7	3.3	33.3	13.3	3.3	00.0	00.0	3.3	00.0	6.7	00.0	100.
16	10.0	00.0	00.0	6.7	3.3	6.7	10.0	3.3	33.3	13.3	3.3	00.0	00.0	3.3	00.0	6.7	00.0	100.
17	10.0	00.0	3.3	3.3	6.7	3.3	10.0	6.7	33.3	10.0	00.0	3.3	3.3	00.0	00.0	6.7	00.0	100.
18	16.7	00.0	3.3	6.7	00.0	6.7	10.0	00.0	40.0	10.0	00.0	3.3	3.3	00.0	00.0	00.0	00.0	100.
19	10.0	3.3	3.3	00.0	00.0	6.7	10.0	10.0	36.7	10.0	3.3	00.0	3.3	00.0	00.0	3.3	00.0	100.
20	10.0	3.3	3.3	00.0	00.0	6.7	10.0	13.3	33.3	6.7	3.3	00.0	3.3	3.3	00.0	3.3	00.0	100.
21	10.0	00.0	3.3	00.0	00.0	6.7	3.3	26.7	33.3	3.3	3.3	00.0	00.0	3.3	3.3	3.3	00.0	100.
22	6.7	3.3	3.3	3.3	3.3	3.3	00.0	26.7	26.7	6.7	3.3	00.0	00.0	6.7	00.0	6.7	00.0	100.
23	6.7	6.7	00.0	00.0	10.0	3.3	00.0	23.3	26.7	6.7	00.0	10.0	3.3	3.3	00.0	00.0	00.0	100.
24	3.3	10.0	00.0	00.0	6.7	00.0	6.7	13.3	26.7	10.0	13.3	6.7	00.0	00.0	00.0	00.0	3.3	100.
ALL	7.2	4.4	1.9	1.9	3.5	5.7	6.9	10.3	31.7	11.0	2.9	2.5	2.4	3.3	1.1	2.5	.7	100.

NUMBER OF OBS = 720

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

JUL-SEP

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	5.4	3.3	2.2	5.4	3.3	10.9	7.6	2.2	23.9	8.7	4.3	2.2	4.3	6.5	3.3	2.2	4.3	100.
2	2.2	5.4	3.3	3.3	1.1	14.1	4.3	3.3	23.9	14.1	4.3	1.1	4.3	6.5	4.3	3.3	1.1	100.
3	6.5	1.1	3.3	3.3	3.3	12.0	4.3	3.3	22.8	15.2	4.3	2.2	2.2	3.3	6.5	3.3	3.3	100.
4	5.4	2.2	1.1	4.3	4.3	7.6	7.6	8.7	19.6	15.2	3.3	3.3	3.3	3.3	6.5	3.3	1.1	100.
5	2.2	3.3	2.2	1.1	2.2	10.9	5.4	2.2	28.3	16.3	4.3	5.4	3.3	3.3	4.3	5.4	00.0	100.
6	3.3	2.2	00.0	2.2	4.3	6.5	7.6	7.6	15.2	17.4	4.3	4.3	1.1	7.6	7.6	6.5	2.2	100.
7	4.3	2.2	2.2	1.1	4.3	8.7	5.4	12.0	15.2	17.4	6.5	1.1	5.4	4.3	5.4	4.3	00.0	100.
8	2.2	3.3	3.3	3.3	4.3	6.5	3.3	12.0	19.6	10.9	7.6	4.3	2.2	3.3	4.3	6.5	3.3	100.
9	4.3	6.5	3.3	3.3	5.4	4.3	4.3	10.9	20.7	4.3	13.0	3.3	2.2	2.2	5.4	4.3	2.2	100.
10	6.5	4.3	3.3	4.3	6.5	8.7	5.4	12.0	18.5	7.6	4.3	3.3	4.3	00.0	6.5	4.3	00.0	100.
11	10.9	3.3	1.1	3.3	7.6	8.7	7.6	12.0	16.3	13.0	3.3	2.2	1.1	4.3	3.3	2.2	00.0	100.
12	8.7	2.2	2.2	3.3	7.6	9.8	7.6	9.8	21.7	8.7	3.3	3.3	3.3	00.0	5.4	3.3	00.0	100.
13	9.8	3.3	3.3	3.3	5.4	8.7	13.0	6.5	23.9	8.7	3.3	3.3	1.1	2.2	1.1	3.3	00.0	100.
14	10.9	3.3	1.1	3.3	4.3	7.6	14.1	7.6	22.8	14.1	2.2	2.2	1.1	2.2	2.2	1.1	00.0	100.
15	8.7	3.3	1.1	2.2	5.4	4.3	18.5	7.6	27.2	8.7	2.2	3.3	00.0	2.2	1.1	4.3	00.0	100.
16	12.0	1.1	3.3	6.5	2.2	6.5	16.3	8.7	20.7	8.7	2.2	2.2	1.1	2.2	2.2	4.3	00.0	100.
17	9.8	3.3	5.4	3.3	4.3	5.4	15.2	8.7	19.6	7.6	3.3	2.2	3.3	00.0	2.2	6.5	00.0	100.
18	12.0	7.6	1.1	4.3	2.2	7.6	12.0	7.6	25.0	6.5	3.3	1.1	3.3	1.1	1.1	4.3	00.0	100.
19	7.6	4.3	1.1	1.1	6.5	8.7	10.9	9.8	19.6	10.9	3.3	00.0	2.2	1.1	2.2	10.9	00.0	100.
20	9.8	2.2	3.3	1.1	9.8	8.7	6.5	12.0	17.4	8.7	4.3	00.0	2.2	2.2	3.3	8.7	00.0	100.
21	7.7	1.1	1.1	3.3	5.5	11.0	5.5	14.3	19.8	5.5	2.2	00.0	3.3	7.7	5.5	6.6	00.0	100.
22	5.5	4.4	2.2	2.2	8.8	8.8	3.3	14.3	14.3	5.5	3.3	4.4	3.3	6.6	4.4	8.8	00.0	100.
23	6.5	3.3	2.2	1.1	9.8	8.7	4.3	13.0	16.3	6.5	00.0	6.5	4.3	5.4	7.6	3.3	1.1	100.
24	4.3	5.4	1.1	4.3	5.4	5.4	10.9	6.5	15.2	12.0	7.6	4.3	1.1	4.3	3.3	4.3	4.3	100.
ALL	6.9	3.4	2.2	3.1	5.2	8.3	8.4	8.8	20.3	10.5	4.2	2.7	2.6	3.4	4.1	4.8	1.0	100.

NUMBER OF OBS = 2206

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

OCTOBER

	WIND DIRECTION																	
HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	3.2	6.5	3.2	00.0	3.2	00.0	3.2	3.2	25.8	00.0	3.2	6.5	3.2	9.7	16.1	9.7	3.2	100.
2	6.5	00.0	3.2	00.0	3.2	00.0	9.7	3.2	12.9	6.5	3.2	9.7	00.0	12.9	16.1	9.7	3.2	100.
3	6.5	00.0	3.2	00.0	3.2	00.0	00.0	9.7	16.1	9.7	3.2	6.5	6.5	6.5	12.9	12.9	3.2	100.
4	3.2	00.0	3.2	00.0	00.0	3.2	00.0	16.1	6.5	12.9	6.5	9.7	00.0	16.1	12.9	9.7	00.0	100.
5	3.2	00.0	3.2	3.2	00.0	3.2	00.0	12.9	9.7	12.9	00.0	9.7	6.5	6.5	19.4	9.7	00.0	100.
6	3.2	00.0	00.0	9.7	00.0	00.0	00.0	9.7	12.9	3.2	12.9	3.2	00.0	6.5	12.9	19.4	6.5	100.
7	6.5	00.0	3.2	00.0	6.5	00.0	00.0	12.9	9.7	6.5	6.5	3.2	9.7	9.7	16.1	9.7	00.0	100.
8	6.5	3.2	00.0	6.5	00.0	00.0	3.2	16.1	3.2	9.7	12.9	3.2	00.0	3.2	16.1	12.9	3.2	100.
9	6.5	3.2	00.0	3.2	3.2	3.2	00.0	9.7	12.9	6.5	6.5	6.5	6.5	9.7	6.5	16.1	00.0	100.
10	6.5	3.2	00.0	00.0	3.2	6.5	00.0	9.7	12.9	9.7	00.0	6.5	9.7	9.7	00.0	19.4	3.2	100.
11	6.5	3.2	00.0	00.0	00.0	6.5	3.2	3.2	19.4	6.5	3.2	9.7	6.5	12.9	00.0	19.4	00.0	100.
12	16.1	3.2	00.0	00.0	00.0	9.7	6.5	6.5	16.1	9.7	00.0	6.5	3.2	12.9	00.0	9.7	00.0	100.
13	19.4	3.2	00.0	00.0	00.0	6.5	16.1	3.2	9.7	3.2	9.7	3.2	3.2	12.9	00.0	9.7	00.0	100.
14	16.1	9.7	3.2	00.0	3.2	9.7	9.7	6.5	9.7	3.2	00.0	00.0	9.7	12.9	3.2	3.2	00.0	100.
15	25.8	6.5	00.0	00.0	3.2	9.7	12.9	00.0	6.5	00.0	00.0	00.0	6.5	22.6	00.0	6.5	00.0	100.
16	25.8	6.5	00.0	00.0	00.0	12.9	9.7	3.2	6.5	3.2	00.0	00.0	9.7	6.5	12.9	3.2	00.0	100.
17	9.7	3.2	3.2	00.0	00.0	3.2	19.4	00.0	6.5	6.5	00.0	00.0	9.7	9.7	9.7	19.4	00.0	100.
18	3.2	6.5	00.0	00.0	3.2	6.5	16.1	00.0	6.5	3.2	00.0	00.0	9.7	6.5	16.1	22.6	00.0	100.
19	6.5	00.0	00.0	3.2	3.2	6.5	16.1	3.2	3.2	3.2	00.0	6.5	3.2	12.9	3.2	29.0	00.0	100.
20	12.9	3.2	00.0	00.0	00.0	00.0	16.1	6.5	6.5	6.5	3.2	3.2	3.2	9.7	16.1	12.9	00.0	100.
21	9.7	3.2	3.2	00.0	00.0	00.0	9.7	6.5	9.7	3.2	6.5	6.5	6.5	9.7	16.1	6.5	3.2	100.
22	16.1	00.0	00.0	00.0	00.0	00.0	12.9	3.2	6.5	9.7	6.5	6.5	9.7	3.2	16.1	3.2	6.5	100.
23	9.7	00.0	00.0	00.0	00.0	3.2	3.2	9.7	6.5	16.1	6.5	3.2	3.2	9.7	16.1	6.5	6.5	100.
24	6.5	3.2	00.0	00.0	00.0	3.2	6.5	6.5	9.7	9.7	00.0	6.5	3.2	6.5	16.1	12.9	9.7	100.
ALL	9.8	2.8	1.2	1.1	1.5	3.9	7.3	6.7	10.2	6.7	3.8	4.8	5.4	9.9	10.6	12.2	2.0	100.

NUMBER OF OBS = 744

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

NOVEMBER

	WIND DIRECTION																	
HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	16.7	3.3	00.0	00.0	00.0	3.3	3.3	3.3	30.0	6.7	6.7	3.3	00.0	3.3	13.3	3.3	3.3	100.
2	16.7	00.0	3.3	00.0	00.0	3.3	3.3	10.0	16.7	6.7	10.0	3.3	6.7	3.3	10.0	6.7	00.0	100.
3	16.7	00.0	3.3	00.0	00.0	3.3	10.0	00.0	13.3	16.7	10.0	00.0	3.3	13.3	6.7	3.3	00.0	100.
4	6.7	10.0	3.3	00.0	00.0	3.3	6.7	3.3	20.0	6.7	10.0	3.3	00.0	10.0	16.7	00.0	00.0	100.
5	13.3	3.3	3.3	00.0	00.0	6.7	3.3	3.3	26.7	3.3	3.3	3.3	00.0	10.0	10.0	6.7	3.3	100.
6	13.3	00.0	3.3	3.3	00.0	6.7	6.7	3.3	13.3	10.0	3.3	6.7	00.0	13.3	16.7	00.0	00.0	100.
7	6.7	6.7	6.7	00.0	00.0	3.3	10.0	3.3	10.0	10.0	00.0	3.3	13.3	13.3	13.3	00.0	00.0	100.
8	13.3	3.3	3.3	00.0	3.3	3.3	10.0	6.7	13.3	6.7	3.3	3.3	3.3	6.7	13.3	6.7	00.0	100.
9	10.0	3.3	00.0	3.3	3.3	3.3	13.3	6.7	13.3	6.7	3.3	00.0	00.0	13.3	10.0	10.0	00.0	100.
10	3.3	3.3	6.7	3.3	3.3	6.7	6.7	13.3	6.7	6.7	3.3	3.3	3.3	3.3	10.0	16.7	00.0	100.
11	6.7	6.7	6.7	00.0	6.7	10.0	6.7	00.0	13.3	6.7	00.0	6.7	3.3	3.3	6.7	16.7	00.0	100.
12	23.3	6.7	3.3	3.3	6.7	13.3	3.3	3.3	6.7	6.7	3.3	6.7	3.3	3.3	00.0	6.7	00.0	100.
13	10.0	13.3	3.3	00.0	6.7	6.7	6.7	3.3	10.0	6.7	3.3	6.7	3.3	3.3	3.3	13.3	00.0	100.
14	10.0	10.0	6.7	00.0	00.0	16.7	3.3	3.3	13.3	3.3	00.0	10.0	3.3	3.3	00.0	16.7	00.0	100.
15	6.7	6.7	6.7	00.0	00.0	6.7	6.7	6.7	13.3	00.0	6.7	3.3	6.7	6.7	6.7	16.7	00.0	100.
16	10.0	10.0	3.3	3.3	6.7	10.0	00.0	6.7	13.3	00.0	3.3	10.0	3.3	3.3	3.3	13.3	00.0	100.
17	6.7	10.0	3.3	00.0	00.0	6.7	10.0	10.0	6.7	10.0	6.7	3.3	3.3	10.0	6.7	6.7	00.0	100.
18	3.3	6.7	3.3	00.0	3.3	3.3	00.0	13.3	6.7	10.0	3.3	16.7	00.0	3.3	16.7	10.0	00.0	100.
19	16.7	10.0	00.0	00.0	00.0	6.7	00.0	6.7	13.3	10.0	6.7	6.7	3.3	3.3	10.0	3.3	3.3	100.
20	13.3	6.7	00.0	00.0	00.0	6.7	00.0	3.3	13.3	3.3	6.7	13.3	00.0	3.3	10.0	16.7	3.3	100.
21	10.0	6.7	00.0	00.0	00.0	6.7	00.0	10.0	13.3	6.7	10.0	6.7	3.3	6.7	10.0	6.7	3.3	100.
22	10.0	6.7	00.0	00.0	00.0	6.7	3.3	00.0	30.0	00.0	6.7	6.7	3.3	6.7	10.0	10.0	00.0	100.
23	6.7	10.0	00.0	00.0	00.0	6.7	00.0	6.7	16.7	13.3	6.7	3.3	6.7	10.0	13.3	00.0	00.0	100.
24	6.7	6.7	00.0	00.0	00.0	3.3	3.3	3.3	26.7	3.3	6.7	3.3	10.0	3.3	13.3	3.3	6.7	100.
ALL	10.7	6.3	2.9	.7	1.7	6.4	4.9	5.4	15.0	6.7	5.1	5.6	3.5	6.7	9.6	8.1	1.0	100.

NUMBER OF OBS = 720

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

DECEMBER

	WIND DIRECTION																	
HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	9.7	9.7	00.0	00.0	00.0	00.0	3.2	9.7	22.6	6.5	6.5	00.0	3.2	12.9	9.7	6.5	00.0	100.
2	9.7	3.2	3.2	00.0	00.0	00.0	3.2	6.5	25.8	3.2	9.7	3.2	3.2	9.7	12.9	6.5	00.0	100.
3	6.5	6.5	00.0	00.0	00.0	00.0	3.2	9.7	16.1	9.7	6.5	00.0	9.7	9.7	6.5	12.9	3.2	100.
4	3.2	3.2	3.2	00.0	00.0	00.0	3.2	6.5	16.1	9.7	16.1	6.5	00.0	12.9	3.2	12.9	3.2	100.
5	9.7	3.2	00.0	3.2	00.0	00.0	3.2	3.2	22.6	9.7	9.7	00.0	9.7	6.5	12.9	6.5	00.0	100.
6	3.2	3.2	00.0	3.2	00.0	6.5	00.0	6.5	25.8	3.2	3.2	9.7	00.0	9.7	12.9	12.9	00.0	100.
7	3.2	3.2	3.2	00.0	3.2	00.0	3.2	3.2	22.6	9.7	6.5	00.0	9.7	3.2	12.9	12.9	3.2	100.
8	9.7	00.0	3.2	00.0	3.2	3.2	00.0	00.0	35.5	9.7	6.5	6.5	00.0	3.2	9.7	9.7	00.0	100.
9	9.7	3.2	3.2	00.0	00.0	3.2	00.0	6.5	35.5	6.5	00.0	6.5	00.0	9.7	6.5	9.7	00.0	100.
10	9.7	3.2	00.0	3.2	00.0	00.0	6.5	12.9	22.6	3.2	00.0	9.7	3.2	3.2	9.7	12.9	00.0	100.
11	3.2	3.2	00.0	6.5	00.0	3.2	12.9	6.5	19.4	00.0	3.2	9.7	00.0	6.5	9.7	16.1	00.0	100.
12	3.2	00.0	6.5	3.2	00.0	3.2	9.7	9.7	22.6	00.0	3.2	6.5	00.0	6.5	12.9	12.9	00.0	100.
13	6.5	00.0	3.2	00.0	3.2	6.5	9.7	3.2	29.0	00.0	3.2	6.5	00.0	9.7	9.7	9.7	00.0	100.
14	3.2	6.5	00.0	6.5	3.2	3.2	9.7	6.5	12.9	9.7	3.2	6.5	00.0	3.2	16.1	9.7	00.0	100.
15	3.2	12.9	00.0	00.0	6.5	3.2	9.7	6.5	12.9	9.7	3.2	3.2	00.0	6.5	12.9	9.7	00.0	100.
16	12.9	9.7	3.2	3.2	00.0	00.0	9.7	9.7	12.9	6.5	3.2	3.2	3.2	00.0	19.4	3.2	00.0	100.
17	6.5	3.2	00.0	3.2	00.0	00.0	9.7	6.5	19.4	3.2	3.2	3.2	3.2	3.2	16.1	19.4	00.0	100.
18	6.5	00.0	3.2	3.2	00.0	00.0	3.2	12.9	16.1	3.2	3.2	6.5	6.5	3.2	16.1	12.9	3.2	100.
19	9.7	00.0	00.0	3.2	3.2	00.0	3.2	9.7	19.4	00.0	3.2	6.5	3.2	6.5	16.1	12.9	3.2	100.
20	12.9	3.2	00.0	00.0	3.2	00.0	3.2	9.7	25.8	6.5	00.0	3.2	3.2	16.1	00.0	12.9	00.0	100.
21	6.5	6.5	00.0	00.0	00.0	3.2	3.2	00.0	29.0	3.2	6.5	3.2	6.5	12.9	3.2	12.9	3.2	100.
22	12.9	6.5	00.0	00.0	00.0	00.0	3.2	3.2	25.8	12.9	3.2	3.2	3.2	12.9	00.0	12.9	00.0	100.
23	6.5	6.5	00.0	00.0	00.0	3.2	00.0	12.9	22.6	6.5	6.5	3.2	3.2	6.5	12.9	9.7	00.0	100.
24	6.5	6.5	00.0	00.0	00.0	3.2	00.0	6.5	25.8	12.9	6.5	3.2	3.2	9.7	9.7	6.5	00.0	100.
ALL	7.3	4.3	1.3	1.6	1.1	1.7	4.7	7.0	22.4	6.0	4.8	4.6	3.1	7.7	10.5	11.0	.8	100.

NUMBER OF OBS = 744

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

OCT-DEC

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	9.8	6.5	1.1	00.0	1.1	1.1	3.3	5.4	26.1	4.3	5.4	3.3	2.2	8.7	13.0	6.5	2.2	100.
2	10.9	1.1	3.3	00.0	1.1	1.1	5.4	6.5	18.5	5.4	7.6	5.4	3.3	8.7	13.0	7.6	1.1	100.
3	9.8	2.2	2.2	00.0	1.1	1.1	4.3	6.5	15.2	12.0	6.5	2.2	6.5	9.8	8.7	9.8	2.2	100.
4	4.3	4.3	3.3	00.0	00.0	2.2	3.3	8.7	14.1	9.8	10.9	6.5	00.0	13.0	10.9	7.6	1.1	100.
5	8.7	2.2	2.2	2.2	00.0	3.3	2.2	6.5	19.6	8.7	4.3	4.3	5.4	7.6	14.1	7.6	1.1	100.
6	6.5	1.1	1.1	5.4	00.0	4.3	2.2	6.5	17.4	5.4	6.5	6.5	00.0	9.8	14.1	10.9	2.2	100.
7	5.4	3.3	4.3	00.0	3.3	1.1	4.3	6.5	14.1	8.7	4.3	2.2	10.9	8.7	14.1	7.6	1.1	100.
8	9.8	2.2	2.2	2.2	2.2	2.2	4.3	7.6	17.4	8.7	7.6	4.3	1.1	4.3	13.0	9.8	1.1	100.
9	8.7	3.3	1.1	2.2	2.2	3.3	4.3	7.6	20.7	6.5	3.3	4.3	2.2	10.9	7.6	12.0	00.0	100.
10	6.5	3.3	2.2	2.2	2.2	4.3	4.3	12.0	14.1	6.5	1.1	6.5	5.4	5.4	6.5	16.3	1.1	100.
11	5.4	4.3	2.2	2.2	2.2	6.5	7.6	3.3	17.4	4.3	2.2	8.7	3.3	7.6	5.4	17.4	00.0	100.
12	14.1	3.3	3.3	2.2	2.2	8.7	6.5	6.5	15.2	5.4	2.2	6.5	2.2	7.6	4.3	9.8	00.0	100.
13	12.0	5.4	2.2	00.0	3.3	6.5	10.9	3.3	16.3	3.3	5.4	5.4	2.2	8.7	4.3	10.9	00.0	100.
14	9.8	8.7	3.3	2.2	2.2	9.8	7.6	5.4	12.0	5.4	1.1	5.4	4.3	6.5	6.5	9.8	00.0	100.
15	12.0	8.7	2.2	00.0	3.3	6.5	9.8	4.3	10.9	3.3	3.3	2.2	4.3	12.0	6.5	10.9	00.0	100.
16	16.3	8.7	2.2	2.2	2.2	7.6	6.5	6.5	10.9	3.3	2.2	4.3	5.4	3.3	12.0	6.5	00.0	100.
17	7.6	5.4	2.2	1.1	00.0	3.3	13.0	5.4	10.9	6.5	3.3	2.2	5.4	7.6	10.9	15.2	00.0	100.
18	4.3	4.3	2.2	1.1	2.2	3.3	6.5	8.7	9.8	5.4	2.2	7.6	5.4	4.3	16.3	15.2	1.1	100.
19	10.9	3.3	00.0	2.2	2.2	4.3	6.5	6.5	12.0	4.3	3.3	6.5	3.3	7.6	9.8	15.2	2.2	100.
20	13.0	4.3	00.0	00.0	1.1	2.2	6.5	6.5	15.2	5.4	3.3	6.5	2.2	9.8	8.7	14.1	1.1	100.
21	8.7	5.4	1.1	00.0	00.0	3.3	4.3	5.4	17.4	4.3	7.6	5.4	5.4	9.8	9.8	8.7	3.3	100.
22	13.0	4.3	00.0	00.0	00.0	2.2	6.5	2.2	20.7	7.6	5.4	5.4	5.4	7.6	8.7	8.7	2.2	100.
23	7.6	5.4	00.0	00.0	00.0	4.3	1.1	9.8	15.2	12.0	6.5	3.3	4.3	8.7	14.1	5.4	2.2	100.
24	6.5	5.4	00.0	00.0	00.0	3.3	3.3	5.4	20.7	8.7	4.3	4.3	5.4	6.5	13.0	7.6	5.4	100.
ALL	9.2	4.4	1.8	1.1	1.4	4.0	5.6	6.4	15.9	6.5	4.6	5.0	4.0	8.1	10.2	10.5	1.3	100.

NUMBER OF OBS = 2208

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

JUL-DEC

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	7.6	4.9	1.6	2.7	2.2	6.0	5.4	3.8	25.0	6.5	4.9	2.7	3.3	7.6	8.2	4.3	3.3	100.
2	6.5	3.3	3.3	1.6	1.1	7.6	4.9	4.9	21.2	9.8	6.0	3.3	3.8	7.6	8.7	5.4	1.1	100.
3	8.2	1.6	2.7	1.6	2.2	6.5	4.3	4.9	19.0	13.6	5.4	2.2	4.3	6.5	7.6	6.5	2.7	100.
4	4.9	3.3	2.2	2.2	2.2	4.9	5.4	8.7	16.8	12.5	7.1	4.9	1.6	8.2	8.7	5.4	1.1	100.
5	5.4	2.7	2.2	1.6	1.1	7.1	3.8	4.3	23.9	12.5	4.3	4.9	4.3	5.4	9.2	6.5	.5	100.
6	4.9	1.6	.5	3.8	2.2	5.4	4.9	7.1	16.3	11.4	5.4	5.4	.5	8.7	10.9	8.7	2.2	100.
7	4.9	2.7	3.3	.5	3.8	4.9	4.9	9.2	14.7	13.0	5.4	1.6	8.2	6.5	9.8	6.0	.5	100.
8	6.0	2.7	2.7	2.7	3.3	4.3	3.8	9.8	18.5	9.8	7.6	4.3	1.6	3.8	8.7	8.2	2.2	100.
9	6.5	4.9	2.2	2.7	3.8	3.8	4.3	9.2	20.7	5.4	8.2	3.8	2.2	6.5	6.5	8.2	1.1	100.
10	6.5	3.8	2.7	3.3	4.3	6.5	4.9	12.0	16.3	7.1	2.7	4.9	4.9	2.7	6.5	10.3	.5	100.
11	8.2	3.8	1.6	2.7	4.9	7.6	7.6	7.6	16.8	8.7	2.7	5.4	2.2	6.0	4.3	9.8	00.0	100.
12	11.4	2.7	2.7	2.7	4.9	9.2	7.1	8.2	18.5	7.1	2.7	4.9	2.7	3.8	4.9	6.5	00.0	100.
13	10.9	4.3	2.7	1.6	4.3	7.6	12.0	4.9	20.1	6.0	4.3	4.3	1.6	5.4	2.7	7.1	00.0	100.
14	10.3	6.0	2.2	2.7	3.3	8.7	10.9	6.5	17.4	9.8	1.6	3.8	2.7	4.3	4.3	5.4	00.0	100.
15	10.3	6.0	1.6	1.1	4.3	5.4	14.1	6.0	19.0	6.0	2.7	2.7	2.2	7.1	3.8	7.6	00.0	100.
16	14.1	4.9	2.7	4.3	2.2	7.1	11.4	7.6	15.8	6.0	2.2	3.3	3.3	2.7	7.1	5.4	00.0	100.
17	8.7	4.3	3.8	2.2	2.2	4.3	14.1	7.1	15.2	7.1	3.3	2.2	4.3	3.8	6.5	10.9	00.0	100.
18	8.2	6.0	1.6	2.7	2.2	5.4	9.2	8.2	17.4	6.0	2.7	4.3	4.3	2.7	8.7	9.8	.5	100.
19	9.2	3.8	.5	1.6	4.3	6.5	8.7	8.2	15.8	7.6	3.3	3.3	2.7	4.3	6.0	13.0	1.1	100.
20	11.4	3.3	1.6	.5	5.4	5.4	6.5	9.2	16.3	7.1	3.8	3.3	2.2	6.0	6.0	11.4	.5	100.
21	8.2	3.3	1.1	1.6	2.7	7.1	4.9	9.8	18.6	4.9	4.9	2.7	4.4	8.7	7.7	7.7	1.6	100.
22	9.3	4.4	1.1	1.1	4.4	5.5	4.9	8.2	17.5	6.6	4.4	4.9	4.4	7.1	6.6	8.7	1.1	100.
23	7.1	4.3	1.1	.5	4.9	6.5	2.7	11.4	15.8	9.2	3.3	4.9	4.3	7.1	10.9	4.3	1.6	100.
24	5.4	5.4	.5	2.2	2.7	4.3	7.1	6.0	17.9	10.3	6.0	4.3	3.3	5.4	8.2	6.0	4.9	100.
ALL	8.1	3.9	2.0	2.1	3.3	6.2	7.0	7.6	18.1	8.5	4.4	3.9	3.3	5.8	7.2	7.6	1.1	100.

NUMBER OF OBS = 4414

NPPD-COOPER NUCLEAR STATION 10-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

JAN-DEC

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	8.8	5.2	2.7	2.2	3.3	5.2	6.3	6.0	17.0	7.9	4.7	3.3	3.3	5.2	9.9	7.1	1.9	100.
2	9.6	4.1	3.8	1.6	3.3	7.1	4.7	6.8	15.3	7.9	5.8	2.5	3.8	6.0	8.2	8.5	.8	100.
3	10.1	3.6	3.6	2.5	4.1	5.2	5.2	6.3	15.3	11.5	4.4	1.6	3.3	5.2	9.3	7.1	1.6	100.
4	8.8	4.7	3.3	2.2	4.4	4.4	4.7	7.9	13.7	10.7	5.5	4.1	1.9	7.4	9.3	6.3	.8	100.
5	9.0	5.2	2.5	2.7	1.9	7.4	4.4	5.5	17.0	9.9	4.7	3.3	4.4	4.4	8.5	8.5	.8	100.
6	7.7	4.7	.8	3.3	2.7	6.6	4.4	6.6	14.5	9.3	5.2	4.1	1.4	7.1	10.1	9.6	1.9	100.
7	6.6	5.5	3.0	.8	4.1	6.3	5.5	7.7	14.0	9.9	5.5	1.6	6.0	6.0	8.5	8.5	.5	100.
8	8.8	5.2	2.2	2.7	2.7	6.0	5.5	9.9	14.2	7.9	6.6	3.3	2.7	3.8	8.2	9.0	1.1	100.
9	8.2	7.4	1.9	2.2	3.8	7.4	5.8	7.4	14.8	6.6	6.8	3.3	2.5	6.3	6.3	8.8	.5	100.
10	10.4	4.4	2.7	2.5	5.5	6.8	6.6	9.0	13.2	7.1	3.6	3.3	3.8	4.7	6.3	9.9	.3	100.
11	9.9	5.2	3.0	2.7	5.2	8.8	8.8	4.7	13.2	8.2	3.6	3.8	3.0	6.0	4.4	9.6	00.0	100.
12	12.1	4.7	3.0	3.8	4.9	10.1	7.1	5.5	13.4	7.4	3.3	4.7	3.6	3.8	5.8	6.8	00.0	100.
13	12.1	4.9	3.0	2.5	5.5	9.0	11.0	3.8	12.9	7.1	4.4	4.1	3.0	4.1	5.5	7.1	00.0	100.
14	11.5	5.8	1.9	4.9	4.9	9.6	9.0	4.9	11.5	8.2	3.3	4.1	3.0	4.7	5.5	7.1	00.0	100.
15	11.2	7.4	1.4	3.0	4.4	8.5	11.2	4.9	12.3	6.0	4.7	2.5	3.0	6.3	5.5	7.7	00.0	100.
16	14.0	6.3	2.5	3.8	3.6	7.7	10.7	6.8	10.7	5.8	4.4	2.7	2.5	3.6	8.5	6.6	00.0	100.
17	10.7	6.8	3.6	3.6	4.4	5.5	12.1	5.8	10.1	7.4	4.7	1.9	3.0	3.6	7.4	9.6	00.0	100.
18	11.2	6.0	3.3	3.3	3.8	5.8	10.4	6.8	11.2	6.3	3.8	3.6	3.0	2.2	7.7	11.2	.3	100.
19	11.0	5.8	1.9	3.3	4.9	5.8	9.0	6.6	12.1	6.8	3.3	3.0	1.9	3.8	6.8	13.2	.8	100.
20	12.3	4.7	1.6	1.4	5.8	5.5	6.6	10.4	11.5	5.8	3.3	3.3	2.5	5.2	7.4	12.3	.5	100.
21	10.7	4.7	2.2	2.2	4.7	5.5	4.7	10.2	13.5	5.2	4.1	2.2	2.7	8.5	9.1	8.8	1.1	100.
22	10.7	5.2	2.2	2.2	4.1	5.8	6.0	8.8	12.4	6.9	4.1	3.6	3.6	6.3	8.2	8.5	1.4	100.
23	8.8	5.2	2.2	2.7	3.3	6.3	5.2	9.6	13.7	7.7	3.0	3.6	2.7	7.1	9.9	7.7	1.4	100.
24	8.5	6.3	1.4	2.7	2.7	4.9	6.8	5.5	16.7	7.9	4.7	3.6	4.1	5.5	7.9	7.7	3.0	100.
ALL	10.1	5.4	2.5	2.7	4.1	6.7	7.1	7.0	13.5	7.7	4.5	3.2	3.1	5.3	7.7	8.6	.8	100.

NUMBER OF OBS = 8758

Wind Direction Frequencies

100-Meter Level

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

JANUARY

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	9.7	3.2	9.7	00.0	3.2	12.9	3.2	3.2	3.2	00.0	9.7	12.9	00.0	9.7	9.7	9.7	00.0	100.
2	9.7	6.5	3.2	00.0	00.0	19.4	3.2	3.2	3.2	3.2	9.7	6.5	6.5	3.2	12.9	9.7	00.0	100.
3	12.9	3.2	6.5	00.0	00.0	12.9	12.9	00.0	3.2	00.0	12.9	6.5	00.0	12.9	3.2	12.9	00.0	100.
4	9.7	3.2	6.5	3.2	3.2	12.9	9.7	00.0	00.0	6.5	9.7	3.2	3.2	9.7	9.7	9.7	00.0	100.
5	9.7	00.0	3.2	3.2	3.2	9.7	16.1	00.0	00.0	3.2	6.5	9.7	9.7	00.0	12.9	12.9	00.0	100.
6	6.5	6.5	3.2	3.2	3.2	12.9	12.9	00.0	3.2	00.0	6.5	9.7	6.5	3.2	12.9	9.7	00.0	100.
7	6.5	9.7	00.0	00.0	00.0	9.7	19.4	00.0	3.2	3.2	3.2	12.9	3.2	3.2	12.9	12.9	00.0	100.
8	3.2	9.7	00.0	3.2	3.2	6.5	16.1	00.0	00.0	3.2	9.7	3.2	6.5	3.2	16.1	16.1	00.0	100.
9	6.5	6.5	00.0	00.0	3.2	6.5	9.7	3.2	3.2	00.0	16.1	3.2	12.9	00.0	9.7	19.4	00.0	100.
10	6.5	3.2	3.2	00.0	00.0	9.7	9.7	3.2	3.2	3.2	12.9	6.5	3.2	6.5	6.5	22.6	00.0	100.
11	6.5	3.2	3.2	00.0	00.0	6.5	12.9	3.2	00.0	3.2	19.4	3.2	00.0	6.5	12.9	19.4	00.0	100.
12	6.5	6.5	00.0	00.0	3.2	3.2	12.9	3.2	00.0	00.0	16.1	12.9	3.2	6.5	6.5	19.4	00.0	100.
13	3.2	6.5	00.0	3.2	3.2	00.0	12.9	3.2	00.0	00.0	9.7	16.1	6.5	6.5	9.7	19.4	00.0	100.
14	6.5	6.5	3.2	00.0	3.2	3.2	9.7	3.2	00.0	00.0	9.7	16.1	6.5	6.5	19.4	6.5	00.0	100.
15	12.9	3.2	3.2	3.2	00.0	3.2	6.5	3.2	3.2	3.2	12.9	6.5	9.7	9.7	12.9	6.5	00.0	100.
16	12.9	3.2	3.2	00.0	3.2	3.2	6.5	6.5	6.5	3.2	12.9	6.5	00.0	6.5	19.4	6.5	00.0	100.
17	12.9	3.2	3.2	00.0	3.2	9.7	3.2	6.5	3.2	6.5	9.7	6.5	3.2	3.2	9.7	16.1	00.0	100.
18	9.7	3.2	3.2	00.0	6.5	3.2	6.5	3.2	6.5	6.5	6.5	6.5	9.7	3.2	12.9	12.9	00.0	100.
19	9.7	3.2	3.2	3.2	3.2	6.5	00.0	3.2	9.7	00.0	12.9	12.9	3.2	6.5	6.5	16.1	00.0	100.
20	16.1	6.5	00.0	3.2	3.2	6.5	00.0	6.5	6.5	00.0	12.9	9.7	3.2	9.7	3.2	12.9	00.0	100.
21	12.9	6.5	6.5	3.2	3.2	6.5	6.5	00.0	6.5	3.2	6.5	12.9	3.2	3.2	9.7	9.7	00.0	100.
22	12.9	6.5	3.2	3.2	3.2	9.7	6.5	3.2	3.2	3.2	16.1	3.2	3.2	00.0	12.9	9.7	00.0	100.
23	16.1	6.5	3.2	3.2	3.2	9.7	6.5	3.2	3.2	00.0	6.5	16.1	3.2	3.2	12.9	3.2	00.0	100.
24	12.9	9.7	00.0	6.5	3.2	6.5	9.7	3.2	00.0	3.2	6.5	12.9	6.5	3.2	9.7	6.5	00.0	100.
ALL	9.7	5.2	3.0	1.7	2.6	7.9	8.9	2.7	3.0	2.3	10.6	9.0	4.7	5.2	11.0	12.5	00.0	100.

NUMBER OF OBS = 744

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

FEBRUARY

	WIND DIRECTION																	
HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	3.6	14.3	3.6	7.1	3.6	3.6	10.7	00.0	7.1	7.1	00.0	00.0	3.6	7.1	10.7	17.9	00.0	100.
2	3.6	17.9	00.0	7.1	3.6	3.6	14.3	00.0	3.6	7.1	00.0	00.0	00.0	7.1	14.3	17.9	00.0	100.
3	14.3	17.9	00.0	10.7	3.6	00.0	10.7	3.6	3.6	7.1	00.0	00.0	00.0	7.1	14.3	7.1	00.0	100.
4	14.3	14.3	00.0	10.7	3.6	3.6	3.6	7.1	3.6	7.1	00.0	3.6	00.0	3.6	14.3	10.7	00.0	100.
5	3.6	17.9	3.6	10.7	3.6	3.6	3.6	3.6	7.1	7.1	00.0	3.6	00.0	7.1	3.6	21.4	00.0	100.
6	7.1	7.1	10.7	3.6	10.7	3.6	3.6	3.6	7.1	7.1	00.0	3.6	00.0	00.0	14.3	17.9	00.0	100.
7	3.6	3.6	17.9	3.6	7.1	3.6	10.7	00.0	7.1	7.1	00.0	3.6	00.0	3.6	14.3	14.3	00.0	100.
8	10.7	7.1	3.6	10.7	7.1	3.6	10.7	00.0	3.6	7.1	3.6	00.0	00.0	00.0	25.0	7.1	00.0	100.
9	10.7	10.7	3.6	10.7	10.7	3.6	7.1	3.6	7.1	00.0	3.6	00.0	3.6	00.0	21.4	3.6	00.0	100.
10	10.7	10.7	00.0	10.7	7.1	3.6	10.7	00.0	10.7	00.0	3.6	00.0	00.0	00.0	21.4	10.7	00.0	100.
11	10.7	7.1	7.1	14.3	3.6	3.6	10.7	3.6	7.1	00.0	3.6	00.0	00.0	3.6	14.3	10.7	00.0	100.
12	14.3	7.1	7.1	7.1	10.7	3.6	3.6	7.1	10.7	00.0	00.0	3.6	00.0	3.6	14.3	7.1	00.0	100.
13	14.3	10.7	3.6	17.9	00.0	3.6	3.6	14.3	3.6	00.0	00.0	3.6	00.0	7.1	10.7	7.1	00.0	100.
14	10.7	10.7	3.6	10.7	7.1	3.6	3.6	7.1	10.7	00.0	00.0	00.0	3.6	7.1	14.3	7.1	00.0	100.
15	10.7	14.3	10.7	3.6	7.1	3.6	7.1	3.6	7.1	3.6	00.0	3.6	00.0	3.6	14.3	7.1	00.0	100.
16	14.3	14.3	3.6	10.7	3.6	3.6	7.1	7.1	7.1	00.0	00.0	3.6	00.0	7.1	10.7	7.1	00.0	100.
17	21.4	10.7	7.1	10.7	3.6	00.0	10.7	7.1	3.6	00.0	3.6	00.0	00.0	7.1	7.1	7.1	00.0	100.
18	25.0	10.7	00.0	7.1	7.1	3.6	7.1	7.1	3.6	00.0	00.0	3.6	00.0	3.6	10.7	10.7	00.0	100.
19	28.6	3.6	00.0	3.6	7.1	3.6	10.7	7.1	3.6	00.0	3.6	00.0	00.0	00.0	17.9	10.7	00.0	100.
20	17.9	10.7	7.1	00.0	7.1	3.6	10.7	3.6	7.1	00.0	3.6	00.0	00.0	00.0	17.9	10.7	00.0	100.
21	10.7	10.7	7.1	00.0	3.6	7.1	7.1	7.1	7.1	00.0	00.0	3.6	00.0	3.6	14.3	17.9	00.0	100.
22	21.4	10.7	7.1	00.0	7.1	3.6	7.1	3.6	10.7	00.0	00.0	00.0	3.6	3.6	10.7	10.7	00.0	100.
23	14.3	10.7	7.1	3.6	3.6	7.1	3.6	3.6	7.1	3.6	00.0	00.0	3.6	00.0	10.7	21.4	00.0	100.
24	10.7	17.9	3.6	3.6	00.0	10.7	3.6	3.6	7.1	3.6	00.0	00.0	3.6	00.0	10.7	21.4	00.0	100.
ALL	12.8	11.3	4.9	7.4	5.5	3.9	7.6	4.5	6.5	2.8	1.0	1.5	.9	3.6	13.8	11.9	00.0	100.

NUMBER OF OBS = 672

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

MARCH

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	16.1	3.2	3.2	3.2	3.2	9.7	6.5	9.7	6.5	00.0	00.0	3.2	3.2	6.5	9.7	16.1	00.0	100.
2	13.3	3.3	3.3	10.0	00.0	10.0	10.0	3.3	6.7	3.3	00.0	3.3	3.3	10.0	10.0	10.0	00.0	100.
3	9.7	12.9	3.2	3.2	6.5	6.5	9.7	3.2	3.2	6.5	00.0	6.5	3.2	3.2	12.9	9.7	00.0	100.
4	16.1	3.2	3.2	6.5	00.0	9.7	6.5	9.7	3.2	3.2	00.0	9.7	00.0	3.2	12.9	12.9	00.0	100.
5	16.1	6.5	00.0	6.5	00.0	16.1	00.0	12.9	3.2	3.2	6.5	00.0	3.2	9.7	6.5	9.7	00.0	100.
6	22.6	3.2	00.0	3.2	3.2	12.9	6.5	9.7	3.2	3.2	6.5	00.0	00.0	6.5	9.7	9.7	00.0	100.
7	22.6	3.2	00.0	3.2	3.2	6.5	9.7	9.7	6.5	00.0	6.5	3.2	00.0	6.5	9.7	9.7	00.0	100.
8	19.4	3.2	00.0	3.2	6.5	3.2	12.9	3.2	6.5	6.5	3.2	00.0	6.5	6.5	9.7	9.7	00.0	100.
9	16.1	3.2	6.5	3.2	3.2	6.5	9.7	3.2	3.2	6.5	3.2	00.0	6.5	9.7	12.9	6.5	00.0	100.
10	9.7	00.0	9.7	00.0	6.5	9.7	6.5	6.5	3.2	3.2	9.7	3.2	3.2	3.2	12.9	12.9	00.0	100.
11	6.5	6.5	3.2	6.5	3.2	9.7	9.7	6.5	00.0	9.7	3.2	3.2	6.5	6.5	9.7	9.7	00.0	100.
12	6.5	6.5	3.2	3.2	6.5	12.9	6.5	6.5	3.2	3.2	3.2	9.7	00.0	9.7	12.9	6.5	00.0	100.
13	6.5	3.2	00.0	3.2	12.9	6.5	9.7	6.5	3.2	6.5	00.0	3.2	9.7	3.2	9.7	16.1	00.0	100.
14	9.7	6.5	3.2	00.0	12.9	6.5	9.7	3.2	6.5	6.5	00.0	00.0	3.2	3.2	12.9	16.1	00.0	100.
15	3.2	9.7	9.7	3.2	6.5	6.5	6.5	3.2	6.5	3.2	6.5	00.0	3.2	6.5	19.4	6.5	00.0	100.
16	9.7	9.7	00.0	9.7	6.5	00.0	9.7	3.2	6.5	00.0	6.5	3.2	3.2	9.7	16.1	6.5	00.0	100.
17	6.5	6.5	9.7	3.2	3.2	9.7	6.5	00.0	9.7	00.0	3.2	6.5	3.2	6.5	19.4	6.5	00.0	100.
18	6.5	9.7	12.9	00.0	3.2	9.7	3.2	6.5	3.2	00.0	6.5	00.0	6.5	3.2	22.6	6.5	00.0	100.
19	9.7	6.5	6.5	6.5	3.2	9.7	00.0	9.7	3.2	6.5	00.0	00.0	3.2	9.7	12.9	12.9	00.0	100.
20	12.9	9.7	3.2	6.5	9.7	6.5	6.5	3.2	3.2	6.5	00.0	00.0	3.2	6.5	12.9	9.7	00.0	100.
21	12.9	9.7	6.5	00.0	12.9	6.5	6.5	3.2	3.2	6.5	00.0	00.0	6.5	3.2	9.7	9.7	3.2	100.
22	16.1	00.0	6.5	3.2	6.5	9.7	12.9	00.0	6.5	6.5	00.0	3.2	6.5	3.2	9.7	9.7	00.0	100.
23	16.1	6.5	3.2	00.0	9.7	9.7	6.5	3.2	6.5	6.5	00.0	00.0	6.5	9.7	3.2	12.9	00.0	100.
24	12.9	6.5	00.0	3.2	3.2	12.9	6.5	6.5	6.5	3.2	3.2	00.0	6.5	6.5	9.7	12.9	00.0	100.
ALL	12.4	5.8	4.0	3.8	5.5	8.6	7.4	5.5	4.7	4.2	2.8	2.4	4.0	6.3	12.0	10.4	.1	100.

NUMBER OF OBS = 743

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

JAN-MAR

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	10.0	6.7	5.6	3.3	3.3	8.9	6.7	4.4	5.6	2.2	3.3	5.6	2.2	7.8	10.0	14.4	00.0	100.
2	9.0	9.0	2.2	5.6	1.1	11.2	9.0	2.2	4.5	4.5	3.4	3.4	3.4	6.7	12.4	12.4	00.0	100.
3	12.2	11.1	3.3	4.4	3.3	6.7	11.1	2.2	3.3	4.4	4.4	4.4	1.1	7.8	10.0	10.0	00.0	100.
4	13.3	6.7	3.3	6.7	2.2	8.9	6.7	5.6	2.2	5.6	3.3	5.6	1.1	5.6	12.2	11.1	00.0	100.
5	10.0	7.8	2.2	6.7	2.2	10.0	6.7	5.6	3.3	4.4	4.4	4.4	4.4	5.6	7.8	14.4	00.0	100.
6	12.2	5.6	4.4	3.3	5.6	10.0	7.8	4.4	4.4	3.3	4.4	4.4	2.2	3.3	12.2	12.2	00.0	100.
7	11.1	5.6	5.6	2.2	3.3	6.7	13.3	3.3	5.6	3.3	3.3	6.7	1.1	4.4	12.2	12.2	00.0	100.
8	11.1	6.7	1.1	5.6	5.6	4.4	13.3	1.1	3.3	5.6	5.6	1.1	4.4	3.3	16.7	11.1	00.0	100.
9	11.1	6.7	3.3	4.4	5.6	5.6	8.9	3.3	4.4	2.2	7.8	1.1	7.8	3.3	14.4	10.0	00.0	100.
10	8.9	4.4	4.4	3.3	4.4	7.8	8.9	3.3	5.6	2.2	8.9	3.3	2.2	3.3	13.3	15.6	00.0	100.
11	7.8	5.6	4.4	6.7	2.2	6.7	11.1	4.4	2.2	4.4	8.9	2.2	2.2	5.6	12.2	13.3	00.0	100.
12	8.9	6.7	3.3	3.3	6.7	6.7	7.8	5.6	4.4	1.1	6.7	8.9	1.1	6.7	11.1	11.1	00.0	100.
13	7.8	6.7	1.1	7.8	5.6	3.3	8.9	7.8	2.2	2.2	3.3	7.8	5.6	5.6	10.0	14.4	00.0	100.
14	8.9	7.8	3.3	3.3	7.8	4.4	7.8	4.4	5.6	2.2	3.3	5.6	4.4	5.6	15.6	10.0	00.0	100.
15	8.9	8.9	7.8	3.3	4.4	4.4	6.7	3.3	5.6	3.3	6.7	3.3	4.4	6.7	15.6	6.7	00.0	100.
16	12.2	8.9	2.2	6.7	4.4	2.2	7.8	5.6	6.7	1.1	6.7	4.4	1.1	7.8	15.6	6.7	00.0	100.
17	13.3	6.7	6.7	4.4	3.3	6.7	6.7	4.4	5.6	2.2	5.6	4.4	2.2	5.6	12.2	10.0	00.0	100.
18	13.3	7.8	5.6	2.2	5.6	5.6	5.6	5.6	4.4	2.2	4.4	3.3	5.6	3.3	15.6	10.0	00.0	100.
19	15.6	4.4	3.3	4.4	4.4	6.7	3.3	6.7	5.6	2.2	5.6	4.4	2.2	5.6	12.2	13.3	00.0	100.
20	15.6	8.9	3.3	3.3	6.7	5.6	5.6	4.4	5.6	2.2	5.6	3.3	2.2	5.6	11.1	11.1	00.0	100.
21	12.2	8.9	6.7	1.1	6.7	6.7	6.7	3.3	5.6	3.3	2.2	5.6	3.3	3.3	11.1	12.2	1.1	100.
22	16.7	5.6	5.6	2.2	5.6	7.8	8.9	2.2	6.7	3.3	5.6	2.2	4.4	2.2	11.1	10.0	00.0	100.
23	15.6	7.8	4.4	2.2	5.6	8.9	5.6	3.3	5.6	3.3	2.2	5.6	4.4	4.4	8.9	12.2	00.0	100.
24	12.2	11.1	1.1	4.4	2.2	10.0	6.7	4.4	4.4	3.3	3.3	4.4	5.6	3.3	10.0	13.3	00.0	100.
ALL	11.6	7.3	3.9	4.2	4.5	6.9	8.0	4.2	4.7	3.1	5.0	4.4	3.3	5.1	12.2	11.6	.0	100.

NUMBER OF OBS = 2159

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

APRIL

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	6.7	00.0	6.7	3.3	3.3	6.7	6.7	3.3	23.3	13.3	00.0	6.7	3.3	00.0	3.3	13.3	00.0	100.
2	6.7	3.3	6.7	3.3	10.0	3.3	3.3	3.3	26.7	13.3	3.3	00.0	3.3	3.3	00.0	10.0	00.0	100.
3	6.7	3.3	3.3	3.3	13.3	3.3	3.3	10.0	10.0	16.7	6.7	00.0	3.3	3.3	3.3	10.0	00.0	100.
4	16.7	3.3	00.0	3.3	13.3	3.3	3.3	13.3	6.7	13.3	10.0	00.0	3.3	3.3	00.0	6.7	00.0	100.
5	16.7	3.3	00.0	6.7	3.3	13.3	3.3	16.7	3.3	10.0	10.0	00.0	3.3	3.3	00.0	6.7	00.0	100.
6	10.0	6.7	00.0	00.0	6.7	10.0	10.0	10.0	10.0	10.0	3.3	6.7	3.3	00.0	6.7	6.7	00.0	100.
7	10.0	3.3	00.0	00.0	6.7	10.0	3.3	16.7	6.7	16.7	00.0	3.3	10.0	00.0	00.0	13.3	00.0	100.
8	13.3	00.0	3.3	00.0	3.3	10.0	6.7	13.3	10.0	10.0	6.7	3.3	3.3	3.3	00.0	13.3	00.0	100.
9	6.7	10.0	6.7	00.0	00.0	10.0	6.7	6.7	13.3	13.3	6.7	00.0	3.3	3.3	3.3	10.0	00.0	100.
10	20.0	3.3	00.0	6.7	00.0	10.0	10.0	3.3	10.0	10.0	6.7	00.0	6.7	6.7	3.3	3.3	00.0	100.
11	13.3	10.0	00.0	3.3	3.3	3.3	16.7	00.0	13.3	6.7	10.0	00.0	3.3	3.3	3.3	10.0	00.0	100.
12	13.3	3.3	10.0	00.0	3.3	00.0	20.0	3.3	6.7	13.3	6.7	00.0	3.3	00.0	6.7	10.0	00.0	100.
13	23.3	00.0	10.0	00.0	00.0	6.7	16.7	3.3	10.0	6.7	10.0	00.0	3.3	00.0	10.0	00.0	00.0	100.
14	16.7	6.7	00.0	3.3	3.3	3.3	16.7	6.7	10.0	6.7	3.3	6.7	00.0	3.3	6.7	6.7	00.0	100.
15	16.7	3.3	00.0	3.3	3.3	6.7	16.7	6.7	10.0	6.7	3.3	00.0	3.3	3.3	6.7	10.0	00.0	100.
16	10.0	3.3	3.3	00.0	10.0	3.3	20.0	3.3	10.0	6.7	3.3	00.0	00.0	6.7	10.0	10.0	00.0	100.
17	13.3	00.0	3.3	3.3	10.0	10.0	6.7	13.3	6.7	3.3	3.3	3.3	00.0	3.3	13.3	6.7	00.0	100.
18	13.3	3.3	3.3	6.7	6.7	10.0	16.7	00.0	6.7	6.7	00.0	3.3	00.0	3.3	3.3	16.7	00.0	100.
19	10.0	3.3	6.7	6.7	3.3	10.0	20.0	00.0	10.0	3.3	00.0	3.3	00.0	3.3	3.3	16.7	00.0	100.
20	10.0	3.3	3.3	00.0	10.0	6.7	13.3	6.7	16.7	00.0	00.0	3.3	00.0	3.3	6.7	16.7	00.0	100.
21	13.3	6.7	00.0	3.3	6.7	10.0	3.3	23.3	6.7	3.3	00.0	3.3	00.0	3.3	00.0	16.7	00.0	100.
22	13.3	3.3	3.3	10.0	3.3	10.0	00.0	16.7	16.7	3.3	00.0	3.3	00.0	3.3	3.3	10.0	00.0	100.
23	13.3	3.3	3.3	10.0	3.3	3.3	6.7	16.7	16.7	6.7	00.0	3.3	00.0	3.3	3.3	6.7	00.0	100.
24	10.0	6.7	3.3	3.3	6.7	3.3	6.7	6.7	20.0	13.3	00.0	3.3	00.0	3.3	6.7	6.7	00.0	100.
ALL	12.6	3.9	3.2	3.3	5.6	6.9	9.9	8.5	11.7	8.9	3.9	2.2	2.4	2.9	4.3	9.9	00.0	100.

NUMBER OF OBS = 720

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

MAY

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	6.5	00.0	6.5	6.5	3.2	6.5	6.5	9.7	19.4	6.5	3.2	00.0	6.5	00.0	3.2	16.1	00.0	100.
2	12.9	3.2	9.7	00.0	12.9	3.2	3.2	16.1	9.7	6.5	6.5	00.0	3.2	00.0	9.7	3.2	00.0	100.
3	6.5	3.2	6.5	3.2	9.7	3.2	3.2	19.4	6.5	12.9	00.0	3.2	3.2	00.0	6.5	12.9	00.0	100.
4	9.7	6.5	3.2	9.7	6.5	00.0	3.2	9.7	6.5	19.4	3.2	00.0	3.2	6.5	3.2	9.7	00.0	100.
5	16.1	3.2	6.5	3.2	6.5	3.2	00.0	9.7	12.9	12.9	3.2	3.2	3.2	3.2	3.2	9.7	00.0	100.
6	12.9	3.2	6.5	3.2	6.5	3.2	00.0	6.5	12.9	9.7	6.5	9.7	6.5	00.0	3.2	9.7	00.0	100.
7	9.7	6.5	6.5	00.0	9.7	00.0	9.7	9.7	6.5	12.9	3.2	00.0	12.9	3.2	3.2	6.5	00.0	100.
8	16.1	6.5	3.2	00.0	6.5	9.7	12.9	3.2	6.5	3.2	12.9	3.2	6.5	6.5	3.2	00.0	00.0	100.
9	12.9	9.7	00.0	3.2	9.7	00.0	12.9	6.5	6.5	9.7	9.7	3.2	3.2	3.2	9.7	00.0	00.0	100.
10	9.7	6.5	6.5	00.0	6.5	6.5	6.5	9.7	9.7	9.7	9.7	3.2	00.0	6.5	6.5	3.2	00.0	100.
11	6.5	6.5	6.5	3.2	3.2	9.7	6.5	3.2	12.9	12.9	6.5	6.5	00.0	12.9	00.0	3.2	00.0	100.
12	9.7	6.5	3.2	9.7	6.5	6.5	6.5	3.2	12.9	9.7	6.5	3.2	3.2	9.7	00.0	3.2	00.0	100.
13	9.7	3.2	00.0	9.7	6.5	9.7	9.7	00.0	9.7	12.9	9.7	00.0	3.2	6.5	6.5	3.2	00.0	100.
14	9.7	3.2	00.0	6.5	9.7	9.7	9.7	3.2	6.5	3.2	16.1	3.2	3.2	6.5	00.0	9.7	00.0	100.
15	16.1	00.0	3.2	3.2	6.5	9.7	9.7	3.2	3.2	6.5	19.4	00.0	6.5	6.5	3.2	3.2	00.0	100.
16	16.1	3.2	00.0	6.5	3.2	6.5	12.9	3.2	6.5	3.2	16.1	3.2	00.0	3.2	6.5	9.7	00.0	100.
17	16.1	9.7	6.5	00.0	6.5	3.2	16.1	6.5	6.5	6.5	9.7	00.0	6.5	00.0	6.5	00.0	00.0	100.
18	6.5	16.1	6.5	3.2	3.2	00.0	22.6	3.2	9.7	6.5	3.2	6.5	3.2	00.0	3.2	6.5	00.0	100.
19	6.5	9.7	3.2	9.7	6.5	00.0	22.6	6.5	9.7	9.7	00.0	3.2	3.2	00.0	00.0	9.7	00.0	100.
20	6.5	00.0	6.5	6.5	9.7	6.5	9.7	9.7	12.9	6.5	00.0	00.0	3.2	3.2	3.2	16.1	00.0	100.
21	3.2	3.2	3.2	6.5	12.9	3.2	12.9	12.9	6.5	9.7	00.0	00.0	6.5	00.0	3.2	16.1	00.0	100.
22	3.2	3.2	6.5	3.2	9.7	6.5	3.2	19.4	6.5	12.9	00.0	00.0	3.2	3.2	6.5	12.9	00.0	100.
23	9.7	6.5	3.2	6.5	3.2	6.5	9.7	19.4	6.5	12.9	00.0	00.0	3.2	3.2	00.0	9.7	00.0	100.
24	6.5	3.2	3.2	12.9	6.5	3.2	3.2	9.7	25.8	6.5	00.0	00.0	00.0	6.5	3.2	9.7	00.0	100.
ALL	9.9	5.1	4.4	4.8	7.1	4.8	8.9	8.5	9.7	9.3	6.0	2.2	3.9	3.8	3.9	7.7	00.0	100.

NUMBER OF OBS = 744

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

JUNE

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	3.3	00.0	6.7	3.3	3.3	6.7	16.7	10.0	20.0	10.0	3.3	3.3	00.0	3.3	00.0	10.0	00.0	100.
2	6.7	3.3	00.0	3.3	6.7	10.0	10.0	10.0	16.7	10.0	13.3	00.0	00.0	3.3	3.3	3.3	00.0	100.
3	3.3	3.3	3.3	00.0	3.3	3.3	13.3	6.7	23.3	10.0	13.3	00.0	00.0	3.3	3.3	10.0	00.0	100.
4	6.7	3.3	3.3	3.3	00.0	3.3	6.7	10.0	20.0	13.3	3.3	6.7	3.3	10.0	00.0	6.7	00.0	100.
5	6.7	3.3	3.3	3.3	00.0	6.7	6.7	3.3	20.0	10.0	10.0	6.7	00.0	00.0	10.0	10.0	00.0	100.
6	6.7	6.7	3.3	00.0	00.0	6.7	10.0	3.3	20.0	13.3	3.3	3.3	3.3	6.7	10.0	3.3	00.0	100.
7	3.3	00.0	3.3	10.0	3.3	00.0	6.7	6.7	16.7	6.7	13.3	00.0	6.7	3.3	13.3	6.7	00.0	100.
8	3.3	6.7	00.0	00.0	3.3	6.7	00.0	3.3	16.7	20.0	6.7	6.7	3.3	3.3	6.7	13.3	00.0	100.
9	6.7	00.0	3.3	00.0	3.3	10.0	6.7	00.0	3.3	23.3	13.3	00.0	3.3	6.7	10.0	10.0	00.0	100.
10	6.9	6.9	00.0	00.0	3.4	10.3	10.3	3.4	13.8	10.3	6.9	3.4	3.4	00.0	3.4	17.2	00.0	100.
11	10.0	6.7	00.0	00.0	6.7	6.7	13.3	6.7	10.0	6.7	6.7	00.0	10.0	00.0	3.3	13.3	00.0	100.
12	10.0	10.0	3.3	3.3	00.0	10.0	13.3	3.3	13.3	6.7	6.7	00.0	10.0	00.0	00.0	10.0	00.0	100.
13	6.7	6.7	6.7	00.0	00.0	16.7	13.3	10.0	00.0	23.3	00.0	00.0	3.3	3.3	00.0	10.0	00.0	100.
14	16.7	00.0	3.3	6.7	3.3	13.3	10.0	6.7	3.3	23.3	00.0	00.0	3.3	00.0	3.3	6.7	00.0	100.
15	16.7	00.0	00.0	3.3	3.3	10.0	23.3	6.7	3.3	13.3	3.3	00.0	3.3	00.0	3.3	10.0	00.0	100.
16	10.0	00.0	00.0	3.3	10.0	10.0	16.7	6.7	3.3	16.7	3.3	00.0	3.3	3.3	00.0	13.3	00.0	100.
17	10.0	3.3	00.0	00.0	6.7	10.0	20.0	3.3	3.3	20.0	6.7	3.3	00.0	00.0	00.0	13.3	00.0	100.
18	3.3	00.0	3.3	00.0	6.7	10.0	16.7	3.3	13.3	13.3	3.3	3.3	3.3	00.0	00.0	20.0	00.0	100.
19	10.0	3.3	00.0	3.3	3.3	6.7	16.7	6.7	16.7	10.0	3.3	3.3	00.0	3.3	6.7	6.7	00.0	100.
20	6.7	6.7	00.0	3.3	3.3	10.0	10.0	13.3	23.3	3.3	3.3	6.7	00.0	00.0	6.7	3.3	00.0	100.
21	3.3	00.0	3.3	00.0	10.0	10.0	13.3	10.0	20.0	10.0	3.3	00.0	3.3	3.3	00.0	10.0	00.0	100.
22	3.3	00.0	3.3	00.0	6.7	16.7	16.7	6.7	20.0	6.7	3.3	00.0	00.0	10.0	00.0	6.7	00.0	100.
23	3.3	6.7	00.0	6.7	00.0	20.0	13.3	6.7	23.3	3.3	00.0	3.3	00.0	6.7	00.0	6.7	00.0	100.
24	3.3	6.7	00.0	6.7	3.3	10.0	13.3	6.7	26.7	6.7	3.3	00.0	00.0	3.3	6.7	3.3	00.0	100.
ALL	7.0	3.5	2.1	2.5	3.8	9.3	12.4	6.4	14.6	12.1	5.6	2.1	2.6	3.1	3.8	9.3	00.0	100.

NUMBER OF OBS = 719

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

APR-JUN

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	5.5	00.0	6.6	4.4	3.3	6.6	9.9	7.7	20.9	9.9	2.2	3.3	3.3	1.1	2.2	13.2	00.0	100.
2	8.8	3.3	5.5	2.2	9.9	5.5	5.5	9.9	17.6	9.9	7.7	00.0	2.2	2.2	4.4	5.5	00.0	100.
3	5.5	3.3	4.4	2.2	8.8	3.3	6.6	12.1	13.2	13.2	6.6	1.1	2.2	2.2	4.4	11.0	00.0	100.
4	11.0	4.4	2.2	5.5	6.6	2.2	4.4	11.0	11.0	15.4	5.5	2.2	3.3	6.6	1.1	7.7	00.0	100.
5	13.2	3.3	3.3	4.4	3.3	7.7	3.3	9.9	12.1	11.0	7.7	3.3	2.2	2.2	4.4	8.8	00.0	100.
6	9.9	5.5	3.3	1.1	4.4	6.6	6.6	6.6	14.3	11.0	4.4	6.6	4.4	2.2	6.6	6.6	00.0	100.
7	7.7	3.3	3.3	3.3	6.6	3.3	6.6	11.0	9.9	12.1	5.5	1.1	9.9	2.2	5.5	8.8	00.0	100.
8	11.0	4.4	2.2	00.0	4.4	8.8	6.6	6.6	11.0	11.0	8.8	4.4	4.4	4.4	3.3	8.8	00.0	100.
9	8.8	6.6	3.3	1.1	4.4	6.6	8.8	4.4	7.7	15.4	9.9	1.1	3.3	4.4	7.7	6.6	00.0	100.
10	12.2	5.6	2.2	2.2	3.3	8.9	8.9	5.6	11.1	10.0	7.8	2.2	3.3	4.4	4.4	7.8	00.0	100.
11	9.9	7.7	2.2	2.2	4.4	6.6	12.1	3.3	12.1	8.8	7.7	2.2	4.4	5.5	2.2	8.8	00.0	100.
12	11.0	6.6	5.5	4.4	3.3	5.5	13.2	3.3	11.0	9.9	6.6	1.1	5.5	3.3	2.2	7.7	00.0	100.
13	13.2	3.3	5.5	3.3	2.2	11.0	13.2	4.4	6.6	14.3	6.6	00.0	3.3	3.3	5.5	4.4	00.0	100.
14	14.3	3.3	1.1	5.5	5.5	8.8	12.1	5.5	6.6	11.0	6.6	3.3	2.2	3.3	3.3	7.7	00.0	100.
15	16.5	1.1	1.1	3.3	4.4	8.8	16.5	5.5	5.5	8.8	8.8	00.0	4.4	3.3	4.4	7.7	00.0	100.
16	12.1	2.2	1.1	3.3	7.7	6.6	16.5	4.4	6.6	8.8	7.7	1.1	1.1	4.4	5.5	11.0	00.0	100.
17	13.2	4.4	3.3	1.1	7.7	7.7	14.3	7.7	5.5	9.9	6.6	2.2	2.2	1.1	6.6	6.6	00.0	100.
18	7.7	6.6	4.4	3.3	5.5	6.6	18.7	2.2	9.9	8.8	2.2	4.4	2.2	1.1	2.2	14.3	00.0	100.
19	8.8	5.5	3.3	6.6	4.4	5.5	19.8	4.4	12.1	7.7	1.1	3.3	1.1	2.2	3.3	11.0	00.0	100.
20	7.7	3.3	3.3	3.3	7.7	7.7	11.0	9.9	17.6	3.3	1.1	3.3	1.1	2.2	5.5	12.1	00.0	100.
21	6.6	3.3	2.2	3.3	9.9	7.7	9.9	15.4	11.0	7.7	1.1	1.1	3.3	2.2	1.1	14.3	00.0	100.
22	6.6	2.2	4.4	4.4	6.6	11.0	6.6	14.3	14.3	7.7	1.1	1.1	1.1	5.5	3.3	9.9	00.0	100.
23	8.8	5.5	2.2	7.7	2.2	9.9	9.9	14.3	15.4	7.7	00.0	2.2	1.1	4.4	1.1	7.7	00.0	100.
24	6.6	5.5	2.2	7.7	5.5	5.5	7.7	7.7	24.2	8.8	1.1	1.1	00.0	4.4	5.5	6.6	00.0	100.
ALL	9.8	4.2	3.3	3.6	5.5	7.0	10.4	7.8	12.0	10.1	5.2	2.2	3.0	3.3	4.0	8.9	00.0	100.

NUMBER OF OBS = 2183

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

JAN-JUN

	WIND DIRECTION																	
HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	7.7	3.3	6.1	3.9	3.3	7.7	8.3	6.1	13.3	6.1	2.8	4.4	2.8	4.4	6.1	13.8	00.0	100.
2	8.9	6.1	3.9	3.9	5.6	8.3	7.2	6.1	11.1	7.2	5.6	1.7	2.8	4.4	8.3	8.9	00.0	100.
3	8.8	7.2	3.9	3.3	6.1	5.0	8.8	7.2	8.3	8.8	5.5	2.8	1.7	5.0	7.2	10.5	00.0	100.
4	12.2	5.5	2.8	6.1	4.4	5.5	5.5	8.3	6.6	10.5	4.4	3.9	2.2	6.1	6.6	9.4	00.0	100.
5	11.6	5.5	2.8	5.5	2.8	8.8	5.0	7.7	7.7	7.7	6.1	3.9	3.3	3.9	6.1	11.6	00.0	100.
6	11.0	5.5	3.9	2.2	5.0	8.3	7.2	5.5	9.4	7.2	4.4	5.5	3.3	2.8	9.4	9.4	00.0	100.
7	9.4	4.4	4.4	2.8	5.0	5.0	9.9	7.2	7.7	7.7	4.4	3.9	5.5	3.3	8.8	10.5	00.0	100.
8	11.0	5.5	1.7	2.8	5.0	6.6	9.9	3.9	7.2	8.3	7.2	2.8	4.4	3.9	9.9	9.9	00.0	100.
9	9.9	6.6	3.3	2.8	5.0	6.1	8.8	3.9	6.1	8.8	8.8	1.1	5.5	3.9	11.0	8.3	00.0	100.
10	10.6	5.0	3.3	2.8	3.9	8.3	8.9	4.4	8.3	6.1	8.3	2.8	2.8	3.9	8.9	11.7	00.0	100.
11	8.8	6.6	3.3	4.4	3.3	6.6	11.6	3.9	7.2	6.6	8.3	2.2	3.3	5.5	7.2	11.0	00.0	100.
12	9.9	6.6	4.4	3.9	5.0	6.1	10.5	4.4	7.7	5.5	6.6	5.0	3.3	5.0	6.6	9.4	00.0	100.
13	10.5	5.0	3.3	5.5	3.9	7.2	11.0	6.1	4.4	8.3	5.0	3.9	4.4	4.4	7.7	9.4	00.0	100.
14	11.6	5.5	2.2	4.4	6.6	6.6	9.9	5.0	6.1	6.6	5.0	4.4	3.3	4.4	9.4	8.8	00.0	100.
15	12.7	5.0	4.4	3.3	4.4	6.6	11.6	4.4	5.5	6.1	7.7	1.7	4.4	5.0	9.9	7.2	00.0	100.
16	12.2	5.5	1.7	5.0	6.1	4.4	12.2	5.0	6.6	5.0	7.2	2.8	1.1	6.1	10.5	8.8	00.0	100.
17	13.3	5.5	5.0	2.8	5.5	7.2	10.5	6.1	5.5	6.1	6.1	3.3	2.2	3.3	9.4	8.3	00.0	100.
18	10.5	7.2	5.0	2.8	5.5	6.1	12.2	3.9	7.2	5.5	3.3	3.9	3.9	2.2	8.8	12.2	00.0	100.
19	12.2	5.0	3.3	5.5	4.4	6.1	11.6	5.5	8.8	5.0	3.3	3.9	1.7	3.9	7.7	12.2	00.0	100.
20	11.6	6.1	3.3	3.3	7.2	6.6	8.3	7.2	11.6	2.8	3.3	3.3	1.7	3.9	8.3	11.6	00.0	100.
21	9.4	6.1	4.4	2.2	8.3	7.2	8.3	9.4	8.3	5.5	1.7	3.3	3.3	2.8	6.1	13.3	.6	100.
22	11.6	3.9	5.0	3.3	6.1	9.4	7.7	8.3	10.5	5.5	3.3	1.7	2.8	3.9	7.2	9.9	00.0	100.
23	12.2	6.6	3.3	5.0	3.9	9.4	7.7	8.8	10.5	5.5	1.1	3.9	2.8	4.4	5.0	9.9	00.0	100.
24	9.4	8.3	1.7	6.1	3.9	7.7	7.2	6.1	14.4	6.1	2.2	2.8	2.8	3.9	7.7	9.9	00.0	100.
ALL	10.7	5.7	3.6	3.9	5.0	7.0	9.2	6.0	8.3	6.6	5.1	3.3	3.1	4.2	8.1	10.2	.0	100.

NUMBER OF OBS = 4342

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

JULY

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	3.2	9.7	6.5	00.0	00.0	6.5	12.9	16.1	25.8	6.5	3.2	00.0	00.0	6.5	00.0	3.2	00.0	100.
2	3.2	6.5	6.5	3.2	00.0	9.7	00.0	12.9	29.0	19.4	00.0	00.0	00.0	6.5	00.0	3.2	00.0	100.
3	3.2	6.5	6.5	6.5	00.0	3.2	3.2	9.7	29.0	22.6	00.0	00.0	00.0	3.2	3.2	3.2	00.0	100.
4	3.2	3.2	6.5	3.2	6.5	3.2	6.5	3.2	29.0	19.4	6.5	00.0	00.0	00.0	3.2	6.5	00.0	100.
5	3.2	6.5	6.5	00.0	6.5	3.2	3.2	9.7	16.1	25.8	9.7	00.0	00.0	00.0	00.0	9.7	00.0	100.
6	12.9	6.5	00.0	00.0	3.2	6.5	3.2	6.5	16.1	32.3	00.0	3.2	00.0	3.2	00.0	6.5	00.0	100.
7	9.7	00.0	6.5	3.2	00.0	3.2	6.5	6.5	22.6	19.4	12.9	00.0	00.0	00.0	00.0	9.7	00.0	100.
8	9.7	00.0	3.2	3.2	3.2	3.2	3.2	6.5	22.6	22.6	9.7	00.0	00.0	3.2	3.2	6.5	00.0	100.
9	9.7	6.5	3.2	3.2	00.0	3.2	3.2	12.9	25.8	12.9	6.5	6.5	00.0	00.0	3.2	3.2	00.0	100.
10	12.9	00.0	00.0	3.2	3.2	3.2	9.7	9.7	19.4	16.1	9.7	00.0	3.2	3.2	00.0	6.5	00.0	100.
11	12.9	00.0	00.0	00.0	3.2	6.5	9.7	12.9	12.9	25.8	00.0	3.2	00.0	6.5	00.0	6.5	00.0	100.
12	12.9	00.0	3.2	00.0	3.2	00.0	19.4	9.7	25.8	9.7	3.2	3.2	00.0	00.0	6.5	3.2	00.0	100.
13	19.4	00.0	00.0	00.0	3.2	00.0	19.4	6.5	25.8	16.1	3.2	00.0	00.0	00.0	3.2	3.2	00.0	100.
14	9.7	3.2	3.2	00.0	00.0	3.2	16.1	9.7	22.6	19.4	3.2	00.0	00.0	00.0	3.2	6.5	00.0	100.
15	19.4	00.0	00.0	00.0	6.5	00.0	16.1	16.1	25.8	9.7	3.2	00.0	00.0	00.0	3.2	00.0	00.0	100.
16	12.9	3.2	3.2	00.0	3.2	3.2	12.9	19.4	19.4	9.7	3.2	00.0	00.0	00.0	3.2	6.5	00.0	100.
17	12.9	6.5	00.0	6.5	00.0	00.0	12.9	16.1	22.6	9.7	3.2	00.0	00.0	00.0	3.2	6.5	00.0	100.
18	3.2	12.9	00.0	3.2	00.0	00.0	12.9	19.4	22.6	6.5	3.2	00.0	00.0	00.0	00.0	16.1	00.0	100.
19	12.9	3.2	6.5	00.0	3.2	3.2	12.9	16.1	16.1	12.9	3.2	00.0	00.0	00.0	00.0	9.7	00.0	100.
20	3.2	9.7	6.5	00.0	6.5	00.0	16.1	16.1	19.4	6.5	3.2	00.0	00.0	00.0	00.0	12.9	00.0	100.
21	6.7	3.3	6.7	3.3	3.3	6.7	13.3	13.3	23.3	3.3	00.0	3.3	00.0	00.0	3.3	10.0	00.0	100.
22	3.3	10.0	6.7	3.3	10.0	3.3	13.3	10.0	23.3	3.3	00.0	3.3	00.0	00.0	6.7	3.3	00.0	100.
23	6.5	9.7	6.5	00.0	9.7	3.2	9.7	16.1	25.8	3.2	00.0	00.0	3.2	00.0	3.2	3.2	00.0	100.
24	00.0	16.1	00.0	6.5	3.2	12.9	6.5	16.1	19.4	9.7	00.0	3.2	00.0	3.2	00.0	3.2	00.0	100.
ALL	8.6	5.1	3.6	2.0	3.2	3.6	10.1	12.1	22.5	14.3	3.6	1.1	.3	1.5	2.0	6.2	00.0	100.

NUMBER OF OBS = 742

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

AUGUST

	WIND DIRECTION																	
HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	00.0	3.2	3.2	6.5	6.5	25.8	22.6	3.2	3.2	9.7	00.0	00.0	3.2	3.2	3.2	6.5	00.0	100.
2	3.2	6.5	00.0	9.7	00.0	29.0	12.9	12.9	00.0	9.7	3.2	00.0	00.0	6.5	6.5	00.0	00.0	100.
3	3.2	00.0	3.2	6.5	12.9	25.8	9.7	3.2	6.5	9.7	3.2	00.0	00.0	6.5	3.2	6.5	00.0	100.
4	6.5	00.0	3.2	6.5	3.2	29.0	6.5	9.7	12.9	3.2	3.2	3.2	00.0	3.2	6.5	3.2	00.0	100.
5	3.2	00.0	3.2	3.2	6.5	25.8	3.2	9.7	9.7	16.1	00.0	6.5	00.0	3.2	6.5	3.2	00.0	100.
6	6.5	00.0	3.2	00.0	6.5	12.9	22.6	9.7	6.5	9.7	6.5	3.2	6.5	00.0	3.2	3.2	00.0	100.
7	6.5	3.2	3.2	3.2	6.5	12.9	19.4	00.0	12.9	12.9	6.5	3.2	00.0	9.7	00.0	00.0	00.0	100.
8	6.5	00.0	3.2	6.5	9.7	16.1	9.7	6.5	3.2	9.7	9.7	6.5	00.0	6.5	3.2	3.2	00.0	100.
9	9.7	00.0	6.5	00.0	9.7	16.1	12.9	3.2	3.2	6.5	9.7	6.5	00.0	00.0	6.5	9.7	00.0	100.
10	6.5	3.2	00.0	9.7	9.7	19.4	12.9	00.0	3.2	3.2	6.5	6.5	3.2	00.0	3.2	12.9	00.0	100.
11	3.2	3.2	6.5	00.0	3.2	19.4	6.5	16.1	6.5	6.5	9.7	00.0	6.5	00.0	6.5	6.5	00.0	100.
12	6.5	3.2	00.0	6.5	9.7	12.9	19.4	3.2	9.7	3.2	6.5	3.2	6.5	00.0	6.5	3.2	00.0	100.
13	3.2	00.0	3.2	6.5	9.7	16.1	12.9	3.2	19.4	3.2	3.2	6.5	00.0	00.0	3.2	9.7	00.0	100.
14	6.5	00.0	00.0	6.5	6.5	9.7	12.9	12.9	19.4	9.7	00.0	6.5	00.0	00.0	3.2	6.5	00.0	100.
15	3.2	6.5	00.0	3.2	9.7	9.7	12.9	9.7	22.6	3.2	3.2	6.5	00.0	3.2	00.0	6.5	00.0	100.
16	6.5	3.2	3.2	9.7	6.5	9.7	16.1	12.9	9.7	3.2	00.0	6.5	6.5	3.2	00.0	3.2	00.0	100.
17	6.5	9.7	3.2	3.2	3.2	9.7	25.8	3.2	9.7	3.2	3.2	3.2	6.5	3.2	3.2	3.2	00.0	100.
18	6.5	6.5	3.2	3.2	6.5	12.9	16.1	9.7	9.7	3.2	3.2	3.2	3.2	3.2	3.2	6.5	00.0	100.
19	3.2	6.5	00.0	3.2	16.1	16.1	9.7	3.2	6.5	9.7	3.2	00.0	3.2	3.2	9.7	6.5	00.0	100.
20	6.5	3.2	3.2	6.5	12.9	25.8	3.2	00.0	6.5	6.5	6.5	00.0	3.2	00.0	9.7	6.5	00.0	100.
21	9.7	3.2	00.0	6.5	12.9	25.8	3.2	3.2	6.5	6.5	3.2	3.2	6.5	3.2	00.0	6.5	00.0	100.
22	6.5	3.2	3.2	3.2	16.1	22.6	6.5	3.2	12.9	00.0	3.2	3.2	00.0	3.2	9.7	3.2	00.0	100.
23	6.5	3.2	00.0	12.9	12.9	19.4	12.9	3.2	9.7	00.0	3.2	00.0	3.2	3.2	6.5	3.2	00.0	100.
24	00.0	6.5	00.0	00.0	25.8	12.9	22.6	6.5	3.2	6.5	00.0	00.0	3.2	3.2	6.5	3.2	00.0	100.
ALL	5.2	3.1	2.3	5.1	9.3	18.1	13.0	6.2	8.9	6.5	4.0	3.2	2.6	2.8	4.6	5.1	00.0	100.

NUMBER OF OBS = 744

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

SEPTEMBER

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	6.7	3.3	3.3	3.3	3.3	6.7	3.3	13.3	36.7	6.7	3.3	3.3	3.3	3.3	00.0	00.0	00.0	100.
2	6.7	3.3	00.0	3.3	00.0	13.3	3.3	6.7	36.7	13.3	00.0	00.0	00.0	3.3	10.0	00.0	00.0	100.
3	10.0	3.3	3.3	3.3	00.0	10.0	6.7	6.7	30.0	16.7	3.3	00.0	00.0	3.3	3.3	00.0	00.0	100.
4	6.7	10.0	00.0	3.3	00.0	6.7	13.3	6.7	30.0	16.7	3.3	00.0	00.0	3.3	00.0	00.0	00.0	100.
5	6.7	6.7	00.0	6.7	00.0	3.3	13.3	6.7	33.3	16.7	3.3	00.0	00.0	3.3	00.0	00.0	00.0	100.
6	10.0	6.7	00.0	00.0	3.3	00.0	13.3	6.7	33.3	16.7	6.7	00.0	00.0	3.3	00.0	00.0	00.0	100.
7	3.3	10.0	00.0	00.0	00.0	13.3	6.7	13.3	30.0	13.3	6.7	00.0	00.0	3.3	00.0	00.0	00.0	100.
8	00.0	10.0	3.3	3.3	00.0	6.7	6.7	16.7	26.7	16.7	3.3	00.0	3.3	00.0	00.0	3.3	00.0	100.
9	00.0	10.0	00.0	6.7	00.0	6.7	10.0	20.0	23.3	10.0	00.0	6.7	3.3	00.0	00.0	3.3	00.0	100.
10	3.3	6.7	00.0	6.7	3.3	3.3	10.0	13.3	16.7	16.7	00.0	6.7	6.7	00.0	00.0	6.7	00.0	100.
11	10.0	6.7	00.0	3.3	6.7	3.3	6.7	10.0	23.3	13.3	6.7	3.3	00.0	3.3	00.0	3.3	00.0	100.
12	10.0	00.0	3.3	3.3	3.3	10.0	3.3	13.3	23.3	16.7	00.0	6.7	3.3	00.0	3.3	00.0	00.0	100.
13	6.7	00.0	3.3	3.3	10.0	3.3	10.0	10.0	16.7	20.0	00.0	6.7	00.0	6.7	00.0	3.3	00.0	100.
14	10.0	00.0	00.0	6.7	3.3	3.3	13.3	6.7	23.3	20.0	00.0	3.3	3.3	3.3	00.0	3.3	00.0	100.
15	3.3	00.0	3.3	3.3	00.0	6.7	16.7	00.0	33.3	20.0	00.0	00.0	00.0	3.3	00.0	10.0	00.0	100.
16	10.0	00.0	00.0	6.7	3.3	3.3	13.3	3.3	33.3	13.3	3.3	00.0	3.3	00.0	00.0	6.7	00.0	100.
17	10.0	00.0	3.3	00.0	10.0	3.3	6.7	10.0	30.0	13.3	00.0	3.3	3.3	00.0	00.0	6.7	00.0	100.
18	13.3	00.0	3.3	3.3	3.3	6.7	6.7	3.3	36.7	13.3	00.0	3.3	3.3	00.0	00.0	3.3	00.0	100.
19	10.0	3.3	00.0	3.3	00.0	6.7	6.7	13.3	33.3	13.3	3.3	00.0	3.3	00.0	00.0	3.3	00.0	100.
20	13.3	3.3	3.3	00.0	00.0	6.7	6.7	20.0	36.7	6.7	00.0	00.0	3.3	00.0	00.0	00.0	00.0	100.
21	16.7	00.0	00.0	3.3	00.0	6.7	10.0	33.3	26.7	00.0	00.0	3.3	00.0	00.0	00.0	00.0	00.0	100.
22	10.0	6.7	00.0	3.3	3.3	6.7	10.0	26.7	26.7	3.3	3.3	00.0	00.0	00.0	00.0	00.0	00.0	100.
23	6.7	6.7	3.3	00.0	6.7	6.7	10.0	26.7	23.3	6.7	00.0	3.3	00.0	00.0	00.0	00.0	00.0	100.
24	3.3	6.7	3.3	00.0	3.3	6.7	13.3	16.7	30.0	6.7	3.3	6.7	00.0	00.0	00.0	00.0	00.0	100.
ALL	7.8	4.3	1.5	3.2	2.6	6.3	9.2	12.6	28.9	12.9	2.1	2.4	1.7	1.7	.7	2.2	00.0	100.

NUMBER OF OBS = 720

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

JUL-SEP

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	3.3	5.4	4.3	3.3	3.3	13.0	13.0	10.9	21.7	7.6	2.2	1.1	2.2	4.3	1.1	3.3	00.0	100.
2	4.3	5.4	2.2	5.4	00.0	17.4	5.4	10.9	21.7	14.1	1.1	00.0	00.0	5.4	5.4	1.1	00.0	100.
3	5.4	3.3	4.3	5.4	4.3	13.0	6.5	6.5	21.7	16.3	2.2	00.0	00.0	4.3	3.3	3.3	00.0	100.
4	5.4	4.3	3.3	4.3	3.3	13.0	8.7	6.5	23.9	13.0	4.3	1.1	00.0	2.2	3.3	3.3	00.0	100.
5	4.3	4.3	3.3	3.3	4.3	10.9	6.5	8.7	19.6	19.6	4.3	2.2	00.0	2.2	2.2	4.3	00.0	100.
6	9.8	4.3	1.1	00.0	4.3	6.5	13.0	7.6	18.5	19.6	4.3	2.2	2.2	2.2	1.1	3.3	00.0	100.
7	6.5	4.3	3.3	2.2	2.2	9.8	10.9	6.5	21.7	15.2	8.7	1.1	00.0	4.3	00.0	3.3	00.0	100.
8	5.4	3.3	3.3	4.3	4.3	8.7	6.5	9.8	17.4	16.3	7.6	2.2	1.1	3.3	2.2	4.3	00.0	100.
9	6.5	5.4	3.3	3.3	3.3	8.7	8.7	12.0	17.4	9.8	5.4	6.5	1.1	00.0	3.3	5.4	00.0	100.
10	7.6	3.3	00.0	6.5	5.4	8.7	10.9	7.6	13.0	12.0	5.4	4.3	4.3	1.1	1.1	8.7	00.0	100.
11	8.7	3.3	2.2	1.1	4.3	9.8	7.6	13.0	14.1	15.2	5.4	2.2	2.2	3.3	2.2	5.4	00.0	100.
12	9.8	1.1	2.2	3.3	5.4	7.6	14.1	8.7	19.6	9.8	3.3	4.3	3.3	00.0	5.4	2.2	00.0	100.
13	9.8	00.0	2.2	3.3	7.6	6.5	14.1	6.5	20.7	13.0	2.2	4.3	00.0	2.2	2.2	5.4	00.0	100.
14	8.7	1.1	1.1	4.3	3.3	5.4	14.1	9.8	21.7	16.3	1.1	3.3	1.1	1.1	2.2	5.4	00.0	100.
15	8.7	2.2	1.1	2.2	5.4	5.4	15.2	8.7	27.2	10.9	2.2	2.2	00.0	2.2	1.1	5.4	00.0	100.
16	9.8	2.2	2.2	5.4	4.3	5.4	14.1	12.0	20.7	8.7	2.2	2.2	3.3	1.1	1.1	5.4	00.0	100.
17	9.8	5.4	2.2	3.3	4.3	4.3	15.2	9.8	20.7	8.7	2.2	2.2	3.3	1.1	2.2	5.4	00.0	100.
18	7.6	6.5	2.2	3.3	3.3	6.5	12.0	10.9	22.8	7.6	2.2	2.2	2.2	1.1	1.1	8.7	00.0	100.
19	8.7	4.3	2.2	2.2	6.5	8.7	9.8	10.9	18.5	12.0	3.3	00.0	2.2	1.1	3.3	6.5	00.0	100.
20	7.6	5.4	4.3	2.2	6.5	10.9	8.7	12.0	20.7	6.5	3.3	00.0	2.2	00.0	3.3	6.5	00.0	100.
21	11.0	2.2	2.2	4.4	5.5	13.2	8.8	16.5	18.7	3.3	1.1	3.3	2.2	1.1	1.1	5.5	00.0	100.
22	6.6	6.6	3.3	3.3	9.9	11.0	9.9	13.2	20.9	2.2	2.2	2.2	00.0	1.1	5.5	2.2	00.0	100.
23	6.5	6.5	3.3	4.3	9.8	9.8	10.9	15.2	19.6	3.3	1.1	1.1	2.2	1.1	3.3	2.2	00.0	100.
24	1.1	9.8	1.1	2.2	10.9	10.9	14.1	13.0	17.4	7.6	1.1	3.3	1.1	2.2	2.2	2.2	00.0	100.
ALL	7.2	4.2	2.5	3.4	5.1	9.4	10.8	10.3	20.0	11.2	3.3	2.2	1.5	2.0	2.4	4.5	00.0	100.

NUMBER OF OBS = 2206

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

OCTOBER

	WIND DIRECTION																	
HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	3.7	3.7	3.7	00.0	00.0	3.7	7.4	18.5	11.1	7.4	7.4	00.0	00.0	7.4	14.8	11.1	00.0	100.
2	7.4	00.0	00.0	3.7	00.0	3.7	7.4	18.5	11.1	7.4	7.4	00.0	3.7	3.7	11.1	14.8	00.0	100.
3	7.4	00.0	00.0	3.7	00.0	3.7	00.0	25.9	11.1	7.4	00.0	3.7	00.0	11.1	11.1	14.8	00.0	100.
4	3.7	00.0	00.0	3.7	00.0	3.7	00.0	11.1	18.5	3.7	3.7	11.1	00.0	7.4	22.2	11.1	00.0	100.
5	3.8	00.0	00.0	3.8	00.0	00.0	3.8	15.4	11.5	00.0	11.5	7.7	3.8	3.8	19.2	15.4	00.0	100.
6	3.8	00.0	00.0	3.8	00.0	00.0	00.0	19.2	11.5	3.8	3.8	3.8	11.5	3.8	11.5	23.1	00.0	100.
7	3.8	00.0	00.0	00.0	3.8	00.0	00.0	15.4	19.2	00.0	00.0	3.8	7.7	7.7	7.7	30.8	00.0	100.
8	11.5	3.8	00.0	00.0	3.8	00.0	00.0	11.5	23.1	00.0	00.0	3.8	00.0	7.7	11.5	23.1	00.0	100.
9	11.5	3.8	00.0	00.0	3.8	00.0	00.0	11.5	23.1	00.0	00.0	3.8	3.8	3.8	7.7	26.9	00.0	100.
10	7.7	3.8	00.0	00.0	3.8	00.0	00.0	11.5	15.4	7.7	00.0	00.0	7.7	7.7	11.5	23.1	00.0	100.
11	7.7	3.8	00.0	00.0	00.0	3.8	00.0	11.5	11.5	11.5	3.8	3.8	3.8	7.7	3.8	26.9	00.0	100.
12	11.5	3.8	00.0	00.0	3.8	3.8	3.8	3.8	15.4	11.5	00.0	7.7	3.8	7.7	3.8	19.2	00.0	100.
13	23.1	00.0	00.0	00.0	3.8	3.8	7.7	3.8	15.4	3.8	00.0	11.5	3.8	7.7	00.0	15.4	00.0	100.
14	15.4	7.7	00.0	3.8	00.0	3.8	7.7	7.7	11.5	3.8	3.8	00.0	7.7	11.5	3.8	11.5	00.0	100.
15	23.1	3.8	00.0	00.0	00.0	3.8	15.4	7.7	7.7	00.0	3.8	00.0	3.8	15.4	00.0	15.4	00.0	100.
16	23.1	00.0	3.8	00.0	00.0	7.7	11.5	3.8	11.5	3.8	00.0	00.0	7.7	7.7	3.8	15.4	00.0	100.
17	14.8	00.0	00.0	3.7	00.0	7.4	18.5	00.0	7.4	7.4	00.0	00.0	7.4	3.7	14.8	14.8	00.0	100.
18	3.7	3.7	00.0	3.7	00.0	7.4	18.5	00.0	7.4	3.7	00.0	3.7	7.4	7.4	7.4	25.9	00.0	100.
19	3.7	3.7	00.0	3.7	00.0	11.1	18.5	00.0	7.4	3.7	00.0	3.7	11.1	00.0	11.1	22.2	00.0	100.
20	14.8	00.0	3.7	3.7	00.0	00.0	22.2	11.1	3.7	3.7	3.7	3.7	3.7	3.7	11.1	11.1	00.0	100.
21	7.4	3.7	3.7	00.0	00.0	3.7	18.5	14.8	11.1	00.0	7.4	3.7	00.0	3.7	11.1	11.1	00.0	100.
22	7.4	3.7	00.0	00.0	3.7	3.7	7.4	25.9	11.1	00.0	7.4	3.7	00.0	7.4	7.4	11.1	00.0	100.
23	7.4	3.7	00.0	00.0	00.0	00.0	11.1	22.2	7.4	7.4	7.4	3.7	00.0	3.7	14.8	11.1	00.0	100.
24	7.4	3.7	00.0	00.0	00.0	3.7	3.7	25.9	3.7	11.1	3.7	3.7	3.7	3.7	14.8	11.1	00.0	100.
ALL	9.7	2.4	.6	1.6	1.1	3.3	7.7	12.4	11.9	4.6	3.1	3.6	4.2	6.4	9.9	17.3	00.0	100.

NUMBER OF OBS = 636

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

NOVEMBER

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	13.3	3.3	3.3	00.0	00.0	6.7	3.3	10.0	13.3	10.0	3.3	3.3	10.0	00.0	13.3	6.7	00.0	100.
2	13.3	3.3	3.3	00.0	00.0	00.0	10.0	6.7	10.0	6.7	6.7	10.0	3.3	3.3	10.0	13.3	00.0	100.
3	13.3	3.3	3.3	00.0	00.0	00.0	10.0	3.3	13.3	3.3	13.3	6.7	3.3	3.3	10.0	13.3	00.0	100.
4	13.3	3.3	3.3	3.3	00.0	3.3	6.7	3.3	13.3	00.0	13.3	6.7	3.3	6.7	13.3	6.7	00.0	100.
5	13.3	00.0	3.3	6.7	00.0	3.3	6.7	3.3	13.3	00.0	3.3	16.7	3.3	10.0	6.7	10.0	00.0	100.
6	13.3	00.0	3.3	3.3	3.3	3.3	6.7	6.7	6.7	3.3	6.7	10.0	6.7	10.0	13.3	3.3	00.0	100.
7	13.3	00.0	3.3	6.7	00.0	3.3	10.0	3.3	6.7	00.0	10.0	6.7	6.7	10.0	20.0	00.0	00.0	100.
8	10.0	3.3	3.3	00.0	3.3	3.3	3.3	10.0	10.0	00.0	3.3	10.0	10.0	6.7	16.7	3.3	3.3	100.
9	13.3	3.3	00.0	3.3	3.3	3.3	3.3	6.7	13.3	00.0	3.3	10.0	10.0	6.7	13.3	6.7	00.0	100.
10	6.7	00.0	6.7	3.3	00.0	3.3	3.3	6.7	13.3	6.7	3.3	6.7	6.7	10.0	16.7	6.7	00.0	100.
11	6.7	3.3	3.3	3.3	00.0	3.3	6.7	3.3	20.0	6.7	3.3	3.3	6.7	3.3	13.3	13.3	00.0	100.
12	10.0	00.0	6.7	3.3	3.3	3.3	00.0	16.7	6.7	3.3	6.7	10.0	3.3	3.3	3.3	20.0	00.0	100.
13	6.7	3.3	3.3	00.0	3.3	10.0	00.0	6.7	13.3	6.7	3.3	6.7	3.3	6.7	00.0	26.7	00.0	100.
14	3.3	3.3	3.3	3.3	00.0	6.7	3.3	13.3	10.0	6.7	00.0	13.3	00.0	3.3	10.0	20.0	00.0	100.
15	6.7	3.3	6.7	00.0	00.0	6.7	3.3	3.3	16.7	3.3	6.7	3.3	6.7	6.7	6.7	20.0	00.0	100.
16	6.7	6.7	3.3	00.0	10.0	6.7	3.3	3.3	13.3	3.3	3.3	10.0	3.3	3.3	6.7	16.7	00.0	100.
17	6.7	6.7	00.0	3.3	00.0	6.7	13.3	6.7	6.7	10.0	6.7	3.3	3.3	10.0	6.7	10.0	00.0	100.
18	10.0	3.3	3.3	00.0	00.0	6.7	6.7	13.3	3.3	6.7	6.7	6.7	00.0	10.0	10.0	13.3	00.0	100.
19	6.7	6.7	3.3	00.0	00.0	6.7	6.7	10.0	10.0	3.3	6.7	6.7	3.3	3.3	6.7	20.0	00.0	100.
20	10.0	6.7	00.0	00.0	00.0	10.0	6.7	10.0	13.3	00.0	10.0	3.3	6.7	00.0	3.3	20.0	00.0	100.
21	6.7	6.7	3.3	00.0	00.0	6.7	3.3	16.7	13.3	3.3	6.7	6.7	3.3	00.0	3.3	20.0	00.0	100.
22	13.3	6.7	00.0	00.0	3.3	6.7	3.3	13.3	10.0	6.7	3.3	6.7	6.7	3.3	10.0	6.7	00.0	100.
23	13.3	00.0	3.3	00.0	00.0	6.7	3.3	10.0	13.3	10.0	00.0	6.7	6.7	3.3	13.3	6.7	3.3	100.
24	13.3	00.0	6.7	00.0	00.0	3.3	3.3	13.3	10.0	10.0	3.3	3.3	13.3	3.3	13.3	3.3	00.0	100.
ALL	10.1	3.2	3.3	1.7	1.3	5.0	5.3	8.3	11.4	4.6	5.6	7.4	5.4	5.3	10.0	11.9	.3	100.

NUMBER OF OBS = 720

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

DECEMBER

	WIND DIRECTION																	
HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	6.5	3.2	3.2	00.0	00.0	00.0	3.2	3.2	22.6	12.9	9.7	3.2	00.0	12.9	6.5	12.9	00.0	100.
2	6.5	3.2	3.2	00.0	00.0	00.0	3.2	00.0	19.4	12.9	12.9	6.5	00.0	12.9	12.9	6.5	00.0	100.
3	3.2	00.0	3.2	3.2	00.0	00.0	3.2	00.0	19.4	16.1	12.9	3.2	6.5	9.7	6.5	12.9	00.0	100.
4	6.5	3.2	00.0	3.2	00.0	00.0	3.2	00.0	12.9	16.1	19.4	9.7	00.0	9.7	6.5	9.7	00.0	100.
5	6.5	6.5	00.0	00.0	00.0	3.2	3.2	00.0	16.1	9.7	12.9	9.7	6.5	12.9	3.2	9.7	00.0	100.
6	6.5	00.0	3.2	3.2	00.0	3.2	3.2	00.0	16.1	12.9	9.7	3.2	3.2	12.9	12.9	6.5	3.2	100.
7	9.7	00.0	3.2	00.0	00.0	3.2	6.5	00.0	12.9	19.4	3.2	6.5	00.0	12.9	12.9	9.7	00.0	100.
8	6.5	00.0	6.5	00.0	00.0	00.0	6.5	3.2	16.1	16.1	3.2	6.5	9.7	3.2	9.7	12.9	00.0	100.
9	3.2	3.2	6.5	00.0	00.0	3.2	3.2	3.2	12.9	19.4	3.2	3.2	6.5	9.7	9.7	12.9	00.0	100.
10	12.9	00.0	00.0	3.2	00.0	00.0	6.5	3.2	12.9	19.4	3.2	3.2	3.2	12.9	6.5	12.9	00.0	100.
11	3.2	3.2	00.0	6.5	00.0	00.0	6.5	3.2	12.9	19.4	3.2	6.5	00.0	12.9	6.5	16.1	00.0	100.
12	3.2	00.0	00.0	6.5	00.0	00.0	9.7	00.0	16.1	19.4	6.5	3.2	3.2	6.5	12.9	12.9	00.0	100.
13	3.2	00.0	00.0	3.2	6.5	00.0	3.2	6.5	19.4	16.1	00.0	9.7	00.0	12.9	6.5	12.9	00.0	100.
14	6.5	3.2	00.0	3.2	3.2	00.0	12.9	6.5	12.9	12.9	00.0	9.7	00.0	3.2	16.1	9.7	00.0	100.
15	12.9	3.2	00.0	00.0	6.5	00.0	9.7	6.5	16.1	9.7	3.2	3.2	3.2	3.2	12.9	9.7	00.0	100.
16	6.5	6.5	00.0	00.0	6.5	3.2	6.5	6.5	16.1	9.7	3.2	3.2	3.2	00.0	22.6	6.5	00.0	100.
17	9.7	00.0	3.2	3.2	3.2	00.0	6.5	12.9	16.1	6.5	00.0	6.5	00.0	3.2	19.4	9.7	00.0	100.
18	9.7	00.0	3.2	00.0	3.2	00.0	3.2	19.4	12.9	6.5	3.2	3.2	6.5	3.2	12.9	9.7	3.2	100.
19	6.5	00.0	00.0	00.0	6.5	00.0	3.2	19.4	16.1	3.2	00.0	6.5	6.5	3.2	16.1	12.9	00.0	100.
20	9.7	3.2	00.0	00.0	6.5	00.0	6.5	6.5	19.4	9.7	00.0	00.0	12.9	16.1	00.0	9.7	00.0	100.
21	3.2	6.5	00.0	00.0	00.0	3.2	6.5	6.5	19.4	16.1	00.0	3.2	3.2	16.1	3.2	12.9	00.0	100.
22	3.2	6.5	00.0	00.0	00.0	3.2	00.0	12.9	16.1	16.1	3.2	3.2	3.2	12.9	6.5	12.9	00.0	100.
23	6.5	6.5	00.0	00.0	00.0	3.2	3.2	6.5	12.9	19.4	6.5	6.5	00.0	6.5	12.9	9.7	00.0	100.
24	6.5	6.5	00.0	00.0	00.0	00.0	3.2	6.5	22.6	12.9	6.5	6.5	3.2	6.5	9.7	9.7	00.0	100.
ALL	6.6	2.7	1.5	1.5	1.7	1.1	5.1	5.5	16.3	13.8	5.2	5.2	3.4	9.0	10.2	10.9	.3	100.

NUMBER OF OBS = 744

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

OCT-DEC

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	8.0	3.4	3.4	00.0	00.0	3.4	4.5	10.2	15.9	10.2	6.8	2.3	3.4	6.8	11.4	10.2	00.0	100.
2	9.1	2.3	2.3	1.1	00.0	1.1	6.8	8.0	13.6	9.1	9.1	5.7	2.3	6.8	11.4	11.4	00.0	100.
3	8.0	1.1	2.3	2.3	00.0	1.1	4.5	9.1	14.8	9.1	9.1	4.5	3.4	8.0	9.1	13.6	00.0	100.
4	8.0	2.3	1.1	3.4	00.0	2.3	3.4	4.5	14.8	6.8	12.5	9.1	1.1	8.0	13.6	9.1	00.0	100.
5	8.0	2.3	1.1	3.4	00.0	2.3	4.6	5.7	13.8	3.4	9.2	11.5	4.6	9.2	9.2	11.5	00.0	100.
6	8.0	00.0	2.3	3.4	1.1	2.3	3.4	8.0	11.5	6.9	6.9	5.7	6.9	9.2	12.6	10.3	1.1	100.
7	9.2	00.0	2.3	2.3	1.1	2.3	5.7	5.7	12.6	6.9	4.6	5.7	4.6	10.3	13.8	12.6	00.0	100.
8	9.2	2.3	3.4	00.0	2.3	1.1	3.4	8.0	16.1	5.7	2.3	6.9	6.9	5.7	12.6	12.6	1.1	100.
9	9.2	3.4	2.3	1.1	2.3	2.3	2.3	6.9	16.1	6.9	2.3	5.7	6.9	6.9	10.3	14.9	00.0	100.
10	9.2	1.1	2.3	2.3	1.1	1.1	3.4	6.9	13.8	11.5	2.3	3.4	5.7	10.3	11.5	13.8	00.0	100.
11	5.7	3.4	1.1	3.4	00.0	2.3	4.6	5.7	14.9	12.6	3.4	4.6	3.4	8.0	8.0	18.4	00.0	100.
12	8.0	1.1	2.3	3.4	2.3	2.3	4.6	6.9	12.6	11.5	4.6	6.9	3.4	5.7	6.9	17.2	00.0	100.
13	10.3	1.1	1.1	1.1	4.6	4.6	3.4	5.7	16.1	9.2	1.1	9.2	2.3	9.2	2.3	18.4	00.0	100.
14	8.0	4.6	1.1	3.4	1.1	3.4	8.0	9.2	11.5	8.0	1.1	8.0	2.3	5.7	10.3	13.8	00.0	100.
15	13.8	3.4	2.3	00.0	2.3	3.4	9.2	5.7	13.8	4.6	4.6	2.3	4.6	8.0	6.9	14.9	00.0	100.
16	11.5	4.6	2.3	00.0	5.7	5.7	6.9	4.6	13.8	5.7	2.3	4.6	4.6	3.4	11.5	12.6	00.0	100.
17	10.2	2.3	1.1	3.4	1.1	4.5	12.5	6.8	10.2	8.0	2.3	3.4	3.4	5.7	13.6	11.4	00.0	100.
18	8.0	2.3	2.3	1.1	1.1	4.5	9.1	11.4	8.0	5.7	3.4	4.5	4.5	6.8	10.2	15.9	1.1	100.
19	5.7	3.4	1.1	1.1	2.3	5.7	9.1	10.2	11.4	3.4	2.3	5.7	6.8	2.3	11.4	18.2	00.0	100.
20	11.4	3.4	1.1	1.1	2.3	3.4	11.4	9.1	12.5	4.5	4.5	2.3	8.0	6.8	4.5	13.6	00.0	100.
21	5.7	5.7	2.3	00.0	00.0	4.5	9.1	12.5	14.8	6.8	4.5	4.5	2.3	6.8	5.7	14.8	00.0	100.
22	8.0	5.7	00.0	00.0	2.3	4.5	3.4	17.0	12.5	8.0	4.5	4.5	3.4	8.0	8.0	10.2	00.0	100.
23	9.1	3.4	1.1	00.0	00.0	3.4	5.7	12.5	11.4	12.5	4.5	5.7	2.3	4.5	13.6	9.1	1.1	100.
24	9.1	3.4	2.3	00.0	00.0	2.3	3.4	14.8	12.5	11.4	4.5	4.5	6.8	4.5	12.5	8.0	00.0	100.
ALL	8.8	2.8	1.9	1.6	1.4	3.1	6.0	8.6	13.3	7.9	4.7	5.5	4.3	7.0	10.0	13.2	.2	100.

NUMBER OF OBS = 2100

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

JUL-DEC

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	5.6	4.4	3.9	1.7	1.7	8.3	8.9	10.6	18.9	8.9	4.4	1.7	2.8	5.6	6.1	6.7	00.0	100.
2	6.7	3.9	2.2	3.3	00.0	9.4	6.1	9.4	17.8	11.7	5.0	2.8	1.1	6.1	8.3	6.1	00.0	100.
3	6.7	2.2	3.3	3.9	2.2	7.2	5.6	7.8	18.3	12.8	5.6	2.2	1.7	6.1	6.1	8.3	00.0	100.
4	6.7	3.3	2.2	3.9	1.7	7.8	6.1	5.6	19.4	10.0	8.3	5.0	.6	5.0	8.3	6.1	00.0	100.
5	6.1	3.4	2.2	3.4	2.2	6.7	5.6	7.3	16.8	11.7	6.7	6.7	2.2	5.6	5.6	7.8	00.0	100.
6	8.9	2.2	1.7	1.7	2.8	4.5	8.4	7.8	15.1	13.4	5.6	3.9	4.5	5.6	6.7	6.7	.6	100.
7	7.8	2.2	2.8	2.2	1.7	6.1	8.4	6.1	17.3	11.2	6.7	3.4	2.2	7.3	6.7	7.8	00.0	100.
8	7.3	2.8	3.4	2.2	3.4	5.0	5.0	8.9	16.8	11.2	5.0	4.5	3.9	4.5	7.3	8.4	.6	100.
9	7.8	4.5	2.8	2.2	2.8	5.6	5.6	9.5	16.8	8.4	3.9	6.1	3.9	3.4	6.7	10.1	00.0	100.
10	8.4	2.2	1.1	4.5	3.4	5.0	7.3	7.3	13.4	11.7	3.9	3.9	5.0	5.6	6.1	11.2	00.0	100.
11	7.3	3.4	1.7	2.2	2.2	6.1	6.1	9.5	14.5	14.0	4.5	3.4	2.8	5.6	5.0	11.7	00.0	100.
12	8.9	1.1	2.2	3.4	3.9	5.0	9.5	7.8	16.2	10.6	3.9	5.6	3.4	2.8	6.1	9.5	00.0	100.
13	10.1	.6	1.7	2.2	6.1	5.6	8.9	6.1	18.4	11.2	1.7	6.7	1.1	5.6	2.2	11.7	00.0	100.
14	8.4	2.8	1.1	3.9	2.2	4.5	11.2	9.5	16.8	12.3	1.1	5.6	1.7	3.4	6.1	9.5	00.0	100.
15	11.2	2.8	1.7	1.1	3.9	4.5	12.3	7.3	20.7	7.8	3.4	2.2	2.2	5.0	3.9	10.1	00.0	100.
16	10.6	3.4	2.2	2.8	5.0	5.6	10.6	8.4	17.3	7.3	2.2	3.4	3.9	2.2	6.1	8.9	00.0	100.
17	10.0	3.9	1.7	3.3	2.8	4.4	13.9	8.3	15.6	8.3	2.2	2.8	3.3	3.3	7.8	8.3	00.0	100.
18	7.8	4.4	2.2	2.2	2.2	5.6	10.6	11.1	15.6	6.7	2.8	3.3	3.3	3.9	5.6	12.2	.6	100.
19	7.2	3.9	1.7	1.7	4.4	7.2	9.4	10.6	15.0	7.8	2.8	2.8	4.4	1.7	7.2	12.2	00.0	100.
20	9.4	4.4	2.8	1.7	4.4	7.2	10.0	10.6	16.7	5.6	3.9	1.1	5.0	3.3	3.9	10.0	00.0	100.
21	8.4	3.9	2.2	2.2	2.8	8.9	8.9	14.5	16.8	5.0	2.8	3.9	2.2	3.9	3.4	10.1	00.0	100.
22	7.3	6.1	1.7	1.7	6.1	7.8	6.7	15.1	16.8	5.0	3.4	3.4	1.7	4.5	6.7	6.1	00.0	100.
23	7.8	5.0	2.2	2.2	5.0	6.7	8.3	13.9	15.6	7.8	2.8	3.3	2.2	2.8	8.3	5.6	.6	100.
24	5.0	6.7	1.7	1.1	5.6	6.7	8.9	13.9	15.0	9.4	2.8	3.9	3.9	3.3	7.2	5.0	00.0	100.
ALL	8.0	3.5	2.2	2.5	3.3	6.3	8.4	9.5	16.7	9.6	4.0	3.8	2.9	4.4	6.2	8.8	.1	100.

NUMBER OF OBS = 4306

NPPD-COOPER NUCLEAR STATION 100-M WIND DIRECTION 2019

PROGRAM: WINPER
VERSION: PC-1.0

HOURLY WIND ROSES (PERCENT)

JAN-DEC

WIND DIRECTION

HR. OF DAY	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM	TOTAL
1	6.6	3.9	5.0	2.8	2.5	8.0	8.6	8.3	16.1	7.5	3.6	3.0	2.8	5.0	6.1	10.2	00.0	100.
2	7.8	5.0	3.1	3.6	2.8	8.9	6.7	7.8	14.4	9.4	5.3	2.2	1.9	5.3	8.3	7.5	00.0	100.
3	7.8	4.7	3.6	3.6	4.2	6.1	7.2	7.5	13.3	10.8	5.5	2.5	1.7	5.5	6.6	9.4	00.0	100.
4	9.4	4.4	2.5	5.0	3.0	6.6	5.8	6.9	13.0	10.2	6.4	4.4	1.4	5.5	7.5	7.8	00.0	100.
5	8.9	4.4	2.5	4.4	2.5	7.8	5.3	7.5	12.2	9.7	6.4	5.3	2.8	4.7	5.8	9.7	00.0	100.
6	10.0	3.9	2.8	1.9	3.9	6.4	7.8	6.7	12.2	10.3	5.0	4.7	3.9	4.2	8.1	8.1	.3	100.
7	8.6	3.3	3.6	2.5	3.3	5.6	9.2	6.7	12.5	9.4	5.6	3.6	3.9	5.3	7.8	9.2	00.0	100.
8	9.2	4.2	2.5	2.5	4.2	5.8	7.5	6.4	11.9	9.7	6.1	3.6	4.2	4.2	8.6	9.2	.3	100.
9	8.9	5.6	3.1	2.5	3.9	5.8	7.2	6.7	11.4	8.6	6.4	3.6	4.7	3.6	8.9	9.2	00.0	100.
10	9.5	3.6	2.2	3.6	3.6	6.7	8.1	5.8	10.9	8.9	6.1	3.3	3.9	4.7	7.5	11.4	00.0	100.
11	8.1	5.0	2.5	3.3	2.8	6.4	8.9	6.7	10.8	10.3	6.4	2.8	3.1	5.6	6.1	11.4	00.0	100.
12	9.4	3.9	3.3	3.6	4.4	5.6	10.0	6.1	11.9	8.1	5.3	5.3	3.3	3.9	6.4	9.4	00.0	100.
13	10.3	2.8	2.5	3.9	5.0	6.4	10.0	6.1	11.4	9.7	3.3	5.3	2.8	5.0	5.0	10.6	00.0	100.
14	10.0	4.2	1.7	4.2	4.4	5.6	10.6	7.2	11.4	9.4	3.1	5.0	2.5	3.9	7.8	9.2	00.0	100.
15	11.9	3.9	3.1	2.2	4.2	5.6	11.9	5.8	13.1	6.9	5.6	1.9	3.3	5.0	6.9	8.6	00.0	100.
16	11.4	4.4	1.9	3.9	5.6	5.0	11.4	6.7	11.9	6.1	4.7	3.1	2.5	4.2	8.3	8.9	00.0	100.
17	11.6	4.7	3.3	3.0	4.2	5.8	12.2	7.2	10.5	7.2	4.2	3.0	2.8	3.3	8.6	8.3	00.0	100.
18	9.1	5.8	3.6	2.5	3.9	5.8	11.4	7.5	11.4	6.1	3.0	3.6	3.6	3.0	7.2	12.2	.3	100.
19	9.7	4.4	2.5	3.6	4.4	6.6	10.5	8.0	11.9	6.4	3.0	3.3	3.0	2.8	7.5	12.2	00.0	100.
20	10.5	5.3	3.0	2.5	5.8	6.9	9.1	8.9	14.1	4.2	3.6	2.2	3.3	3.6	6.1	10.8	00.0	100.
21	8.9	5.0	3.3	2.2	5.6	8.1	8.6	11.9	12.5	5.3	2.2	3.6	2.8	3.3	4.7	11.7	.3	100.
22	9.4	5.0	3.3	2.5	6.1	8.6	7.2	11.7	13.6	5.3	3.3	2.5	2.2	4.2	6.9	8.1	00.0	100.
23	10.0	5.8	2.8	3.6	4.4	8.0	8.0	11.4	13.0	6.6	1.9	3.6	2.5	3.6	6.6	7.8	.3	100.
24	7.2	7.5	1.7	3.6	4.7	7.2	8.0	10.0	14.7	7.8	2.5	3.3	3.3	3.6	7.5	7.5	00.0	100.
ALL	9.3	4.6	2.9	3.2	4.1	6.6	8.8	7.7	12.5	8.1	4.5	3.5	3.0	4.3	7.1	9.5	.1	100.

NUMBER OF OBS = 8648

Precipitation

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM	2AM	3AM	4AM	5AM	6AM	7AM	8AM	9AM	10AM	11AM	12N	TOTAL
			1PM	2PM	3PM	4PM	5PM	6PM	7PM	8PM	9PM	10PM	11PM	12MDNT	
19	1	1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1	2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1	3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1	4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1	5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1	6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1	7	.01	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
19	1	8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1	9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1	10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1	11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.01	.01	.01	.00	.00	.00	.03
19	1	12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.01	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.02
19	1	13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1	14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.02
19	1	15	.00	.00	.00	.01	.00	.01	.02	.01	.01	.02	.02	.02	
			.02	.02	.02	.01	.01	.00	.00	.00	.00	.00	.00	.00	.20
19	1	16	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
19	1	17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM	2AM	3AM	4AM	5AM	6AM	7AM	8AM	9AM	10AM	11AM	12N	TOTAL
			1PM	2PM	3PM	4PM	5PM	6PM	7PM	8PM	9PM	10PM	11PM	12MDNT	
19	1	18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
19	1	19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1	20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1	21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1	22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1	23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1	24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1	25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.02	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.03
19	1	26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.01	.00	.02	.01	.01	.01	.03	.01	.00	.00	.00	.10
19	1	27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.01	.02	.02	.05	.05	.06	.21
19	1	28	.05	.04	.03	.03	.02	.01	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.18
19	1	29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1	30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	1	31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF JANUARY

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 744
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 45
TOTAL DAYS WITH PRECIPITATION - 11
TOTAL AMOUNT OF PRECIPITATION - .83 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .06 INCHES
MAXIMUM DAILY PRECIPITATION - .21 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 27 HOUR 24 - .06 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 27 HOUR 22 - .28 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 27 HOUR 19 - .39 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 27 HOUR 19 - .39 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 27 HOUR 19 - .39 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 530
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 7
TOTAL DAYS WITH PRECIPITATION - 6
TOTAL AMOUNT OF PRECIPITATION - .08 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .02 INCHES
MAXIMUM DAILY PRECIPITATION - .02 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF JANUARY

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS) 1	6	12	18	24
.01	45	108	165	212	250
.02	20	58	100	147	187
.03	8	47	79	111	143
.04	5	36	54	72	98
.05	4	32	52	70	91
.07	0	23	43	61	80
.10	0	16	34	52	71
.15	0	8	21	35	47
.20	0	6	12	24	38
.25	0	4	10	16	22
.30	0	0	8	14	20
.35	0	0	5	11	17
.40	0	0	0	0	0
.45	0	0	0	0	0
.50	0	0	0	0	0
.60	0	0	0	0	0
.70	0	0	0	0	0
.80	0	0	0	0	0
.90	0	0	0	0	0
1.00	0	0	0	0	0
1.10	0	0	0	0	0
1.20	0	0	0	0	0
1.30	0	0	0	0	0
1.40	0	0	0	0	0
1.50	0	0	0	0	0
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

ENTRIES INDICATE NUMBER OF DURATION PERIODS WITH RAINFALL GREATER THAN OR EQUAL TO AMOUNT SHOWN

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM	2AM	3AM	4AM	5AM	6AM	7AM	8AM	9AM	10AM	11AM	12N	
			1PM	2PM	3PM	4PM	5PM	6PM	7PM	8PM	9PM	10PM	11PM	12MDNT	TOTAL
19	2	1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	2	2	.00	.00	.01	.00	.00	.00	.00	.01	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
19	2	3	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
19	2	4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	2	5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	2	6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	2	7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	2	8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	2	9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	2	10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.03	.05	.03	.02	.01	.01	.00	.00	.00	.00	.00	.15
19	2	11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	2	12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	2	13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.01	.09	.08	.04	.04	.00	.00	.00	.01	.00	.00	.27
19	2	14	.00	.00	.00	.01	.00	.00	.00	.00	.00	.01	.03	.02	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.07
19	2	15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	2	16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	2	17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
19	2	18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	2	19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	2	20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	
			.01	.00	.01	.00	.01	.00	.00	.00	.00	.00	.00	.00	.04
19	2	21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.01	.01	.00	.00	.00	.00	.00	.00	.00	.02
19	2	22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.01	.00	.00	.00	.01	.00	.00	.01	.01	.01	.05
19	2	23	.01	.02	.06	.03	.02	.02	.01	.01	.02	.01	.02	.04	
			.15	.12	.16	.09	.04	.01	.00	:00	.00	.00	.00	.00	.84
19	2	24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	2	25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	2	26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	2	27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	2	28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF FEBRUARY

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 672
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 48
TOTAL DAYS WITH PRECIPITATION - 9
TOTAL AMOUNT OF PRECIPITATION - 1.47 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .16 INCHES
MAXIMUM DAILY PRECIPITATION - .84 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 23 HOUR 15 - .16 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 23 HOUR 12 - .60 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 23 HOUR 6 - .69 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 23 HOUR 1 - .84 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 22 HOUR 19 - .88 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 555
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 8
TOTAL DAYS WITH PRECIPITATION - 3
TOTAL AMOUNT OF PRECIPITATION - .10 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .03 INCHES
MAXIMUM DAILY PRECIPITATION - .05 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF FEBRUARY

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS) 1	6	12	18	24
.01	48	107	149	191	224
.02	23	67	115	151	194
.03	16	52	83	112	138
.04	12	47	78	107	131
.05	8	42	69	92	110
.07	6	34	57	82	100
.10	3	29	50	69	87
.15	2	19	42	60	79
.20	0	12	31	43	56
.25	0	11	24	38	51
.30	0	7	14	21	31
.35	0	6	13	19	25
.40	0	5	13	19	25
.45	0	4	11	18	24
.50	0	4	11	17	23
.60	0	1	9	15	21
.70	0	0	0	9	15
.80	0	0	0	5	11
.90	0	0	0	0	0
1.00	0	0	0	0	0
1.10	0	0	0	0	0
1.20	0	0	0	0	0
1.30	0	0	0	0	0
1.40	0	0	0	0	0
1.50	0	0	0	0	0
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

ENTRIES INDICATE NUMBER OF DURATION PERIODS WITH RAINFALL GREATER THAN OR EQUAL TO AMOUNT SHOWN

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
19	3	1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3	2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3	3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3	4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3	5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3	6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.01	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
19	3	7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.07	.03	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.11
19	3	8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3	9	.00	.00	.00	.01	.01	.09	.02	.01	.00	.02	.09	.07	
			.14	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.47
19	3	10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3	11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3	12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.03	.05	
			.05	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20
19	3	13	.01	.02	.01	.00	.00	.00	.00	.11	.20	.40	.10	.01	
			.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.88
19	3	14	.00	.00	.00	.00	.00	.00	.06	.03	.00	.00	.00	.00	
			.00	.00	.00	.00	.03	.01	.00	.00	.00	.00	.00	.00	.13
19	3	15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3	16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3	17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
19	3	18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3	19	.00	.00	.00	.00	.00	.00	.00	.01	.07	.05	.02	.01	
			.00	.00	.00	.06	.05	.02	.00	.00	.00	.01	.00	.00	.30
19	3	20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3	21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3	22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3	23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3	24	.00	.04	.00	.00	.00	.00	.04	.03	.01	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12
19	3	25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3	26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3	27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	3	28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.10	
			.22	.31	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.67
19	3	29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.03	
			.10	.03	.03	.06	.02	.05	.02	.01	.01	.03	.03	.01	.44
19	3	30	.00	.00	.00	.04	.07	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11
19	3	31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF MARCH

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 744
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 66
TOTAL DAYS WITH PRECIPITATION - 11
TOTAL AMOUNT OF PRECIPITATION - 3.45 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .40 INCHES
MAXIMUM DAILY PRECIPITATION - .88 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 13 HOUR 10 - .40 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 13 HOUR 8 - .84 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 13 HOUR 2 - .87 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 13 HOUR 1 - .88 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 12 HOUR 12 - 1.00 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 226
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 3
TOTAL DAYS WITH PRECIPITATION - 2
TOTAL AMOUNT OF PRECIPITATION - .09 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .07 INCHES
MAXIMUM DAILY PRECIPITATION - .07 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF MARCH

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS) 1	6	12	18	24
.01	66	140	202	256	298
.02	47	125	188	242	286
.03	38	117	174	222	262
.04	28	111	171	220	261
.05	24	93	148	202	245
.07	15	90	145	200	244
.10	9	69	125	179	229
.15	4	41	87	123	156
.20	4	28	70	107	143
.25	2	21	54	86	117
.30	2	18	45	75	106
.35	1	12	37	64	89
.40	1	11	31	56	82
.45	0	11	28	49	75
.50	0	11	23	37	56
.60	0	9	21	33	47
.70	0	5	11	17	23
.80	0	3	9	15	23
.90	0	0	0	0	5
1.00	0	0	0	0	1
1.10	0	0	0	0	0
1.20	0	0	0	0	0
1.30	0	0	0	0	0
1.40	0	0	0	0	0
1.50	0	0	0	0	0
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

ENTRIES INDICATE NUMBER OF DURATION PERIODS WITH RAINFALL GREATER THAN OR EQUAL TO AMOUNT SHOWN

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

JAN-MAR INDEX

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 2160
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 159
TOTAL DAYS WITH PRECIPITATION - 31
TOTAL AMOUNT OF PRECIPITATION - 5.75 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .40 INCHES
MAXIMUM DAILY PRECIPITATION - .88 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 3 DAY 13 HOUR 10 - .40 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 3 DAY 13 HOUR 8 - .84 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 3 DAY 13 HOUR 2 - .87 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 3 DAY 13 HOUR 1 - .88 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 3 DAY 12 HOUR 12 - 1.00 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 1311
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 18
TOTAL DAYS WITH PRECIPITATION - 11
TOTAL AMOUNT OF PRECIPITATION - .27 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .07 INCHES
MAXIMUM DAILY PRECIPITATION - .07 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

JAN-MAR INDEX

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS) 1	6	12	18	24
.01	159	355	516	659	772
.02	90	250	403	540	667
.03	62	216	336	445	543
.04	45	194	303	399	490
.05	36	167	269	364	446
.07	21	147	245	343	424
.10	12	114	209	300	387
.15	6	68	150	218	282
.20	4	46	113	174	237
.25	2	36	88	140	190
.30	2	25	67	110	157
.35	1	18	55	94	131
.40	1	16	44	75	107
.45	0	15	39	67	99
.50	0	15	34	54	79
.60	0	10	30	48	68
.70	0	5	11	26	38
.80	0	3	9	20	34
.90	0	0	0	0	5
1.00	0	0	0	0	1
1.10	0	0	0	0	0
1.20	0	0	0	0	0
1.30	0	0	0	0	0
1.40	0	0	0	0	0
1.50	0	0	0	0	0
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
19	4	1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	3	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.02
19	4	4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
19	4	5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.01	.05	.07
19	4	7	.01	.00	.03	.00	.00	.00	.01	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05
19	4	8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM	2AM	3AM	4AM	5AM	6AM	7AM	8AM	9AM	10AM	11AM	12N	TOTAL
			1PM	2PM	3PM	4PM	5PM	6PM	7PM	8PM	9PM	10PM	11PM	12MDNT	
19	4	18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	22	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
19	4	23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	4	27	.00	.00	.02	.03	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05
19	4	28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.18	.27	.45
19	4	29	.01	.10	.11	.00	.00	.00	.00	.01	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04	.27
19	4	30	.00	.00	.03	.01	.03	.06	.01	.00	.01	.01	.01	.01	
			.00	.03	.17	.03	.08	.10	.06	.00	.00	.00	.00	.00	.65

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF APRIL

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 720
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 34
TOTAL DAYS WITH PRECIPITATION - 9
TOTAL AMOUNT OF PRECIPITATION - 1.58 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .27 INCHES
MAXIMUM DAILY PRECIPITATION - .65 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 28 HOUR 24 - .27 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 28 HOUR 23 - .67 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 28 HOUR 23 - .68 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 28 HOUR 23 - .68 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 29 HOUR 24 - .69 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 8
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 0
TOTAL DAYS WITH PRECIPITATION - 0
TOTAL AMOUNT OF PRECIPITATION - .00 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .00 INCHES
MAXIMUM DAILY PRECIPITATION - .00 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF APRIL

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS) 1	6	12	18	24
.01	34	86	126	160	185
.02	18	52	72	96	122
.03	17	50	68	86	101
.04	11	49	67	85	100
.05	10	42	62	82	98
.07	7	35	50	62	74
.10	6	28	45	57	69
.15	3	18	34	40	47
.20	1	16	27	35	41
.25	1	12	22	29	37
.30	0	10	22	28	34
.35	0	9	22	28	34
.40	0	9	20	28	34
.45	0	7	19	27	33
.50	0	3	13	24	30
.60	0	2	8	18	27
.70	0	0	0	0	0
.80	0	0	0	0	0
.90	0	0	0	0	0
1.00	0	0	0	0	0
1.10	0	0	0	0	0
1.20	0	0	0	0	0
1.30	0	0	0	0	0
1.40	0	0	0	0	0
1.50	0	0	0	0	0
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

ENTRIES INDICATE NUMBER OF DURATION PERIODS WITH RAINFALL GREATER THAN OR EQUAL TO AMOUNT SHOWN

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
19	5	1	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
19	5	2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	5	3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	5	4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	5	5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.31	.32	.18	.00	.00	.00	.81
19	5	6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.03	.15	.14	.00	.00	.00	.00	.00	.00	.32
19	5	7	.00	.00	.00	.03	.04	.00	.03	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.16
19	5	8	.03	.48	.36	.17	.40	.15	.03	.00	.00	.02	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.64
19	5	9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	5	10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	5	11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.01	.03
19	5	12	.01	.00	.00	.00	.00	.17	.01	.00	.00	.00	.01	.00	
			.00	.04	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.25
19	5	13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	5	14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	5	15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	5	16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	5	17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.01

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM	2AM	3AM	4AM	5AM	6AM	7AM	8AM	9AM	10AM	11AM	12N	
			1PM	2PM	3PM	4PM	5PM	6PM	7PM	8PM	9PM	10PM	11PM	12MDNT	TOTAL
19	5	18	.00	.00	.01	.04	.00	.02	.00	.00	.00	.00	.00	.00	
			.00	.20	.20	.05	.03	.00	.00	.00	.00	.00	.00	.00	.55
19	5	19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	5	20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.09	.32	.16	.05	.00	.00	.00	.00	.00	.00	.62
19	5	21	.00	.00	.00	.00	.00	.00	.00	.02	.13	.19	.15	.00	
			.00	.00	.01	.00	.01	.00	.00	.08	.00	.03	.00	.00	.62
19	5	22	.03	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04
19	5	23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.77	.20	.76	1.73
19	5	24	.22	.01	.01	.84	.31	.00	.00	.08	.01	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.48
19	5	25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.02	.22	.00	.00	.00	.00	.00	.00	.10	.34
19	5	26	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00	.18
19	5	27	.00	.00	.00	.14	.04	.01	.00	.23	.02	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.33	.78
19	5	28	.01	.20	.00	.01	.00	.25	.09	.11	.01	.00	.00	.00	
			.01	.01	.01	.36	.04	.00	.00	.01	.31	.10	.00	.00	1.53
19	5	29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	5	30	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
19	5	31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF MAY

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 744
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 87
TOTAL DAYS WITH PRECIPITATION - 19
TOTAL AMOUNT OF PRECIPITATION - 11.11 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .84 INCHES
MAXIMUM DAILY PRECIPITATION - 1.73 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 24 HOUR 4 - .84 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 23 HOUR 24 - 2.15 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 23 HOUR 22 - 3.21 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 23 HOUR 22 - 3.21 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 23 HOUR 22 - 3.21 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 0
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 0
TOTAL DAYS WITH PRECIPITATION - 0
TOTAL AMOUNT OF PRECIPITATION - .00 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .00 INCHES
MAXIMUM DAILY PRECIPITATION - .00 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF MAY

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS) 1	6	12	18	24
.01	87	202	281	344	390
.02	63	186	260	318	358
.03	57	171	252	312	352
.04	49	163	247	308	350
.05	44	156	239	300	342
.07	40	143	226	289	332
.10	36	128	207	270	316
.15	29	109	189	253	306
.20	21	91	171	235	289
.25	14	81	150	213	267
.30	13	76	143	204	251
.35	7	68	124	187	238
.40	5	65	122	182	233
.45	4	52	106	158	202
.50	3	38	89	145	191
.60	3	29	70	111	155
.70	3	24	56	87	126
.80	1	21	53	85	120
.90	0	17	34	60	89
1.00	0	15	31	55	83
1.10	0	15	27	46	71
1.20	0	12	25	42	63
1.30	0	10	22	38	60
1.40	0	9	22	36	56
1.50	0	9	21	33	50
1.60	0	6	20	32	47
1.70	0	6	14	26	41
1.80	0	5	11	17	25
1.90	0	5	11	17	23
2.00	0	2	8	14	20

ENTRIES INDICATE NUMBER OF DURATION PERIODS WITH RAINFALL GREATER THAN OR EQUAL TO AMOUNT SHOWN

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
19	6	1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	6	2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	6	3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08	.06	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.14
19	6	4	.00	.00	.00	.05	.46	.01	.07	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.59
19	6	5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	6	6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	6	7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	6	8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	6	9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	6	10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	6	11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.24	.03	.33
19	6	12	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
19	6	13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	6	14	.00	.00	.00	.00	.01	.00	.05	.02	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08
19	6	15	.04	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05
19	6	16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	6	17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
19	6	18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.02	.05	.09	.03	.01	.00	.00	.00	.00	.20
19	6	19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	6	20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	6	21	.00	.00	.00	.48	.07	.05	.02	.18	.08	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.88
19	6	22	.00	.00	.00	.00	.00	.05	.08	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.06	.82	.14	.03	.01	.01	1.20
19	6	23	.00	.00	.00	.00	.02	.11	.07	.12	.05	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.37
19	6	24	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
19	6	25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	6	26	.00	.00	.00	.00	.00	.00	.01	.00	.00	.02	.01	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04
19	6	27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03
19	6	28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	6	29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	6	30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF JUNE

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 720
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 44
TOTAL DAYS WITH PRECIPITATION - 13
TOTAL AMOUNT OF PRECIPITATION - 3.93 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .82 INCHES
MAXIMUM DAILY PRECIPITATION - 1.20 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 22 HOUR 20 - .82 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 22 HOUR 19 - 1.07 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 22 HOUR 20 - 1.21 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 22 HOUR 19 - 1.44 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 22 HOUR 19 - 1.44 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 0
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 0
TOTAL DAYS WITH PRECIPITATION - 0
TOTAL AMOUNT OF PRECIPITATION - .00 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .00 INCHES
MAXIMUM DAILY PRECIPITATION - .00 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF JUNE

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS) 1	6	12	18	24
.01	44	119	191	255	300
.02	34	100	166	224	269
.03	29	97	164	223	268
.04	25	86	148	201	240
.05	24	81	137	185	218
.07	15	64	115	159	194
.10	8	53	98	137	172
.15	5	41	75	106	138
.20	4	36	71	101	132
.25	3	32	62	86	111
.30	3	25	55	79	105
.35	3	22	47	65	84
.40	3	19	39	57	75
.45	3	18	37	55	73
.50	1	17	36	54	72
.60	1	10	22	34	52
.70	1	8	20	32	47
.80	1	8	20	32	44
.90	0	5	11	18	24
1.00	0	5	11	18	24
1.10	0	0	2	12	23
1.20	0	0	2	8	20
1.30	0	0	0	6	12
1.40	0	0	0	4	10
1.50	0	0	0	0	0
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

ENTRIES INDICATE NUMBER OF DURATION PERIODS WITH RAINFALL GREATER THAN OR EQUAL TO AMOUNT SHOWN

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

APR-JUN INDEX

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 2184
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 165
TOTAL DAYS WITH PRECIPITATION - 41
TOTAL AMOUNT OF PRECIPITATION - 16.62 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .84 INCHES
MAXIMUM DAILY PRECIPITATION - 1.73 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 24 HOUR 4 - .84 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 23 HOUR 24 - 2.15 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 23 HOUR 22 - 3.21 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 23 HOUR 22 - 3.21 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 23 HOUR 22 - 3.21 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 8
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 0
TOTAL DAYS WITH PRECIPITATION - 0
TOTAL AMOUNT OF PRECIPITATION - .00 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .00 INCHES
MAXIMUM DAILY PRECIPITATION - .00 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

APR-JUN INDEX

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS) 1	6	12	18	24
.01	165	412	609	776	898
.02	115	338	504	650	767
.03	103	318	490	633	739
.04	85	298	468	606	708
.05	78	279	444	579	676
.07	62	242	397	522	618
.10	50	209	355	475	574
.15	37	168	303	410	508
.20	26	143	273	381	478
.25	18	125	238	338	431
.30	16	111	222	319	404
.35	10	99	195	288	370
.40	8	93	183	275	356
.45	7	77	164	248	322
.50	4	58	138	227	303
.60	4	41	100	163	238
.70	4	32	76	119	173
.80	2	29	73	117	164
.90	0	22	45	78	113
1.00	0	20	42	73	107
1.10	0	15	29	58	94
1.20	0	12	27	50	83
1.30	0	10	22	44	72
1.40	0	9	22	40	66
1.50	0	9	21	33	50
1.60	0	6	20	32	47
1.70	0	6	14	26	41
1.80	0	5	11	17	25
1.90	0	5	11	17	23
2.00	0	2	8	14	20

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

JAN-JUN INDEX

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 4344
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 324
TOTAL DAYS WITH PRECIPITATION - 72
TOTAL AMOUNT OF PRECIPITATION - 22.37 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .84 INCHES
MAXIMUM DAILY PRECIPITATION - 1.73 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 24 HOUR 4 - .84 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 23 HOUR 24 - 2.15 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 23 HOUR 22 - 3.21 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 23 HOUR 22 - 3.21 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 23 HOUR 22 - 3.21 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 1319
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 18
TOTAL DAYS WITH PRECIPITATION - 11
TOTAL AMOUNT OF PRECIPITATION - .27 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .07 INCHES
MAXIMUM DAILY PRECIPITATION - .07 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

JAN-JUN INDEX

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS) 1	6	12	18	24
.01	324	767	1125	1435	1670
.02	205	588	907	1190	1434
.03	165	534	826	1078	1282
.04	130	492	771	1005	1198
.05	114	446	713	943	1122
.07	83	389	642	865	1042
.10	62	323	564	775	961
.15	43	236	453	628	790
.20	30	189	386	555	715
.25	20	161	326	478	621
.30	18	136	289	429	561
.35	11	117	250	382	501
.40	9	109	227	350	463
.45	7	92	203	315	421
.50	4	73	172	281	382
.60	4	51	130	211	306
.70	4	37	87	145	211
.80	2	32	82	137	198
.90	0	22	45	78	118
1.00	0	20	42	73	108
1.10	0	15	29	58	94
1.20	0	12	27	50	83
1.30	0	10	22	44	72
1.40	0	9	22	40	66
1.50	0	9	21	33	50
1.60	0	6	20	32	47
1.70	0	6	14	26	41
1.80	0	5	11	17	25
1.90	0	5	11	17	23
2.00	0	2	8	14	20

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
19	7	1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	5	.00	.00	.00	.00	.00	.00	.29	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.29
19	7	6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	9	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03
19	7	10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	9.99	9.99	.00	.00	.00
19	7	16	.00	.00	.00	.00	.00	.00	.00	.00	1.02	.02	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.04
19	7	17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
19	7	18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	21	.00	.00	.00	.00	.49	.44	.25	.02	.02	.01	.01	.00	
			.00	.00	.00	.05	.01	.02	.01	.00	.00	.00	.00	.00	1.33
19	7	22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.15	.01	.00	.16
19	7	29	.01	.19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20
19	7	30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	7	31	.00	.01	.04	.00	.08	.03	.01	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.17

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF JULY

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 744
NUMBER OF MISSING HOURS - 2
TOTAL HOURS OF PRECIPITATION - 24
TOTAL DAYS WITH PRECIPITATION - 7
TOTAL AMOUNT OF PRECIPITATION - 3.22 INCHES
MAXIMUM 1-HOUR PRECIPITATION - 1.02 INCHES
MAXIMUM DAILY PRECIPITATION - 1.33 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 16 HOUR 9 - 1.02 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 21 HOUR 5 - 1.23 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 21 HOUR 5 - 1.29 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 21 HOUR 5 - 1.33 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 21 HOUR 5 - 1.33 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 0
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 0
TOTAL DAYS WITH PRECIPITATION - 0
TOTAL AMOUNT OF PRECIPITATION - .00 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .00 INCHES
MAXIMUM DAILY PRECIPITATION - .00 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF JULY

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS) 1	6	12	18	24
.01	24	60	96	132	162
.02	16	57	93	129	160
.03	12	55	92	128	159
.04	10	48	79	109	134
.05	9	45	77	107	133
.07	8	40	75	105	131
.10	7	36	70	100	126
.15	7	33	64	94	122
.20	5	25	49	73	97
.25	5	22	46	70	94
.30	3	16	34	52	70
.35	3	15	34	52	70
.40	3	13	25	38	50
.45	2	13	25	37	49
.50	1	12	24	36	48
.60	1	12	24	36	48
.70	1	12	24	36	48
.80	1	11	24	36	48
.90	1	11	23	35	47
1.00	1	10	22	34	46
1.10	0	4	10	16	22
1.20	0	3	9	15	21
1.30	0	0	0	6	12
1.40	0	0	0	0	0
1.50	0	0	0	0	0
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

ENTRIES INDICATE NUMBER OF DURATION PERIODS WITH RAINFALL GREATER THAN OR EQUAL TO AMOUNT SHOWN

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
19	8	1	.00	.00	.00	.00	.14	.00	.03	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.17
19	8	2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	8	3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	8	4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	8	5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	8	6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	8	7	.00	.00	.00	.00	.00	.00	.07	.04	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11
19	8	8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	8	9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	8	10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	8	11	.00	.00	.00	.00	.00	.00	.00	.78	.06	.02	.03	.05	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.94
19	8	12	.00	.00	.00	.02	.43	.16	.02	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.63
19	8	13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	8	14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	8	15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.11	.21	.01	.12	.05	.00	.33	.00	.24	.02	.00	1.09
19	8	16	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.07
19	8	17	.00	.00	.00	.58	.96	.01	.04	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.59

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM	2AM	3AM	4AM	5AM	6AM	7AM	8AM	9AM	10AM	11AM	12N	TOTAL
			1PM	2PM	3PM	4PM	5PM	6PM	7PM	8PM	9PM	10PM	11PM	12MDNT	
19	8	18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	8	19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	8	20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	8	21	.00	.00	.00	.01	.00	.02	.11	.03	.01	.00	.00	.00	
			.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20
19	8	22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	8	23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	8	24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.03
19	8	25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	8	26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	.15	.02	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.29
19	8	27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	8	28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	8	29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.02
19	8	30	.05	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08
19	8	31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.02	
			.02	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.08

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF AUGUST

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 744
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 43
TOTAL DAYS WITH PRECIPITATION - 13
TOTAL AMOUNT OF PRECIPITATION - 5.30 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .96 INCHES
MAXIMUM DAILY PRECIPITATION - 1.59 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 17 HOUR 5 - .96 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 17 HOUR 4 - 1.59 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 17 HOUR 4 - 1.59 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 17 HOUR 4 - 1.59 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 17 HOUR 4 - 1.59 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 0
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 0
TOTAL DAYS WITH PRECIPITATION - 0
TOTAL AMOUNT OF PRECIPITATION - .00 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .00 INCHES
MAXIMUM DAILY PRECIPITATION - .00 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF AUGUST

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS) 1	6	12	18	24
.01	43	113	172	224	272
.02	39	110	170	222	270
.03	27	96	157	210	258
.04	22	83	137	184	226
.05	20	78	133	181	223
.07	16	73	128	178	220
.10	14	59	106	155	197
.15	9	49	86	122	154
.20	7	37	68	104	137
.25	5	37	67	97	124
.30	5	32	56	80	101
.35	4	28	52	76	97
.40	4	28	52	76	97
.45	3	28	52	76	97
.50	3	26	50	75	96
.60	2	20	47	71	93
.70	2	14	34	52	73
.80	1	11	32	50	68
.90	1	8	25	43	61
1.00	0	6	17	29	44
1.10	0	5	11	23	38
1.20	0	5	11	17	26
1.30	0	5	11	17	26
1.40	0	5	11	17	25
1.50	0	5	11	17	25
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

ENTRIES INDICATE NUMBER OF DURATION PERIODS WITH RAINFALL GREATER THAN OR EQUAL TO AMOUNT SHOWN

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
19	9	1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	8	.82	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.82
19	9	9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.11	.10	.15	.01	.02	.00	.00	.00	.00	.39
19	9	10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	12	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	
			.00	.00	.00	.02	.01	.00	.00	.00	.00	.00	.00	.00	.04
19	9	13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
19	9	18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.07	.07
19	9	22	.63	.21	.17	.17	.09	.12	.09	.01	.12	.42	.08	.00	
			.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.12
19	9	23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	9	28	.00	.16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.42	.07	.00	.00	.00	.00	.00	.00	.00	.00	.65
19	9	29	.00	.00	.00	.00	.01	.48	.05	.00	.01	.06	.07	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.68
19	9	30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF SEPTEMBER

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 720
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 31
TOTAL DAYS WITH PRECIPITATION - 7
TOTAL AMOUNT OF PRECIPITATION - 4.77 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .82 INCHES
MAXIMUM DAILY PRECIPITATION - 2.12 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 8 HOUR 1 - .82 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 22 HOUR 1 - 1.39 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 21 HOUR 24 - 2.18 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 21 HOUR 24 - 2.19 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 21 HOUR 24 - 2.19 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 0
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 0
TOTAL DAYS WITH PRECIPITATION - 0
TOTAL AMOUNT OF PRECIPITATION - .00 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .00 INCHES
MAXIMUM DAILY PRECIPITATION - .00 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF SEPTEMBER

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT	DURATION (HOURS)				
INCHES	1	6	12	18	24
.01	31	75	118	150	180
.02	24	63	105	138	168
.03	22	61	104	137	167
.04	22	55	95	128	158
.05	22	55	91	118	142
.07	20	55	91	118	142
.10	14	51	87	115	139
.15	10	47	83	111	135
.20	6	39	69	96	120
.25	5	38	68	95	119
.30	5	37	67	94	118
.35	5	37	67	94	118
.40	5	33	57	78	96
.45	3	32	56	78	96
.50	2	26	44	69	93
.60	2	22	40	66	90
.70	1	16	30	45	64
.80	1	14	28	43	61
.90	0	5	15	24	36
1.00	0	4	13	21	33
1.10	0	3	12	18	29
1.20	0	3	11	17	23
1.30	0	2	9	15	21
1.40	0	0	8	14	20
1.50	0	0	6	12	18
1.60	0	0	4	10	16
1.70	0	0	3	9	15
1.80	0	0	3	9	15
1.90	0	0	3	9	15
2.00	0	0	3	9	15

ENTRIES INDICATE NUMBER OF DURATION PERIODS WITH RAINFALL GREATER THAN OR EQUAL TO AMOUNT SHOWN

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

JUL-SEP INDEX

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 2208
NUMBER OF MISSING HOURS - 2
TOTAL HOURS OF PRECIPITATION - 98
TOTAL DAYS WITH PRECIPITATION - 27
TOTAL AMOUNT OF PRECIPITATION - 13.29 INCHES
MAXIMUM 1-HOUR PRECIPITATION - 1.02 INCHES
MAXIMUM DAILY PRECIPITATION - 2.12 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 7 DAY 16 HOUR 9 - 1.02 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 8 DAY 17 HOUR 4 - 1.59 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 9 DAY 21 HOUR 24 - 2.18 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 9 DAY 21 HOUR 24 - 2.19 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 9 DAY 21 HOUR 24 - 2.19 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 0
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 0
TOTAL DAYS WITH PRECIPITATION - 0
TOTAL AMOUNT OF PRECIPITATION - .00 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .00 INCHES
MAXIMUM DAILY PRECIPITATION - .00 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

JUL-SEP INDEX

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS) 1	6	12	18	24
.01	98	249	394	526	650
.02	79	231	376	509	634
.03	61	213	360	494	619
.04	54	187	318	440	553
.05	51	179	308	424	532
.07	44	169	301	418	526
.10	35	147	270	383	485
.15	26	129	238	338	432
.20	18	101	186	273	354
.25	15	97	181	262	337
.30	13	85	157	226	289
.35	12	80	153	222	285
.40	12	74	134	192	243
.45	8	73	133	191	242
.50	6	64	118	180	237
.60	5	54	111	173	231
.70	4	42	88	133	185
.80	3	36	84	129	177
.90	2	24	63	102	144
1.00	1	20	52	84	123
1.10	0	12	33	57	89
1.20	0	11	31	49	70
1.30	0	7	20	38	59
1.40	0	5	19	31	45
1.50	0	5	17	29	43
1.60	0	0	4	10	16
1.70	0	0	3	9	15
1.80	0	0	3	9	15
1.90	0	0	3	9	15
2.00	0	0	3	9	15

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
19	10	1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.33	.11	.14	.31	.03	.06	.14	.03	.03	.03	.00	1.21
19	10	2	.00	.00	.00	.00	.00	.00	.00	.21	.10	.05	.00	.02	
			.00	.00	.04	.01	.00	.00	.00	.00	.00	.00	.00	.00	.43
19	10	3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.01
19	10	5	.00	.03	.03	.02	.01	.08	.37	.01	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.55
19	10	6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	10	.02	.02	.27	.09	.52	.03	.00	.00	.00	.00	.00	.00	
			.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.96
19	10	11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
19	10	18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	19	.00	.03	.01	.00	.03	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.07
19	10	20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.15	.01	.00	.00	.16
19	10	21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.01
19	10	29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	10	31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF OCTOBER

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 744
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 37
TOTAL DAYS WITH PRECIPITATION - 8
TOTAL AMOUNT OF PRECIPITATION - 3.40 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .52 INCHES
MAXIMUM DAILY PRECIPITATION - 1.21 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 10 HOUR 5 - .52 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 1 HOUR 14 - .98 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 1 HOUR 14 - 1.21 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 1 HOUR 14 - 1.21 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 1 HOUR 14 - 1.59 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 44
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 0
TOTAL DAYS WITH PRECIPITATION - 0
TOTAL AMOUNT OF PRECIPITATION - .00 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .00 INCHES
MAXIMUM DAILY PRECIPITATION - .00 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF OCTOBER

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS) 1	6	12	18	24
.01	37	85	126	158	188
.02	29	65	98	124	148
.03	25	64	97	123	147
.04	16	59	94	120	144
.05	15	54	88	114	138
.07	13	49	85	111	135
.10	11	41	72	92	110
.15	7	40	70	90	108
.20	6	32	57	71	83
.25	5	30	55	70	82
.30	4	29	54	70	82
.35	2	25	50	69	81
.40	1	20	43	68	80
.45	1	18	36	58	70
.50	1	15	33	52	65
.60	0	11	23	37	43
.70	0	9	21	33	41
.80	0	7	20	33	39
.90	0	6	18	33	39
1.00	0	0	6	14	17
1.10	0	0	6	12	16
1.20	0	0	3	9	15
1.30	0	0	0	0	6
1.40	0	0	0	0	6
1.50	0	0	0	0	5
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

ENTRIES INDICATE NUMBER OF DURATION PERIODS WITH RAINFALL GREATER THAN OR EQUAL TO AMOUNT SHOWN

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
19	11	1	.00 .01	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.01 .00	.00 .00	.02
19	11	2	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00
19	11	3	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00
19	11	4	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00
19	11	5	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00
19	11	6	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00
19	11	7	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00
19	11	8	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00
19	11	9	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00
19	11	10	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00
19	11	11	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00
19	11	12	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00
19	11	13	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00
19	11	14	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00
19	11	15	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00
19	11	16	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00
19	11	17	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
19	11	18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
19	11	19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	11	20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.02	.18	.02	.03	.06	.01	.00	.32
19	11	21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	11	22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	11	23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	11	24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	11	25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	11	26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	11	27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	11	28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
19	11	29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	11	30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF NOVEMBER

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 720
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 10
TOTAL DAYS WITH PRECIPITATION - 4
TOTAL AMOUNT OF PRECIPITATION - .37 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .18 INCHES
MAXIMUM DAILY PRECIPITATION - .32 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 20 HOUR 19 - .18 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 20 HOUR 18 - .32 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 20 HOUR 18 - .32 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 20 HOUR 18 - .32 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 20 HOUR 18 - .32 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 180
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 1
TOTAL DAYS WITH PRECIPITATION - 1
TOTAL AMOUNT OF PRECIPITATION - .01 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .01 INCHES
MAXIMUM DAILY PRECIPITATION - .01 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF NOVEMBER

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS) 1	6	12	18	24
.01	10	31	54	72	90
.02	6	20	38	51	63
.03	3	9	15	21	27
.04	2	9	15	21	27
.05	2	9	15	21	27
.07	1	9	15	21	27
.10	1	8	14	20	26
.15	1	6	12	18	24
.20	0	6	12	18	24
.25	0	4	10	16	22
.30	0	3	9	15	21
.35	0	0	0	0	0
.40	0	0	0	0	0
.45	0	0	0	0	0
.50	0	0	0	0	0
.60	0	0	0	0	0
.70	0	0	0	0	0
.80	0	0	0	0	0
.90	0	0	0	0	0
1.00	0	0	0	0	0
1.10	0	0	0	0	0
1.20	0	0	0	0	0
1.30	0	0	0	0	0
1.40	0	0	0	0	0
1.50	0	0	0	0	0
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

ENTRIES INDICATE NUMBER OF DURATION PERIODS WITH RAINFALL GREATER THAN OR EQUAL TO AMOUNT SHOWN

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
19	12	1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.01
19	12	11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

YR	MON	DAY	1AM 1PM	2AM 2PM	3AM 3PM	4AM 4PM	5AM 5PM	6AM 6PM	7AM 7PM	8AM 8PM	9AM 9PM	10AM 10PM	11AM 11PM	12N 12MDNT	TOTAL
19	12	18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	28	.00	.00	.00	.00	.00	.00	.01	.00	.01	.06	.17	.10	
			.02	.02	.00	.01	.01	.00	.00	.02	.00	.00	.00	.08	.51
19	12	29	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
19	12	30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	12	31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
			.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF DECEMBER

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 744
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 13
TOTAL DAYS WITH PRECIPITATION - 3
TOTAL AMOUNT OF PRECIPITATION - .53 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .17 INCHES
MAXIMUM DAILY PRECIPITATION - .51 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 28 HOUR 11 - .17 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 28 HOUR 9 - .38 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 28 HOUR 9 - .42 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 28 HOUR 9 - .51 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS DAY 28 HOUR 7 - .52 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 333
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 1
TOTAL DAYS WITH PRECIPITATION - 1
TOTAL AMOUNT OF PRECIPITATION - .01 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .01 INCHES
MAXIMUM DAILY PRECIPITATION - .01 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

MONTH OF DECEMBER

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS) 1	6	12	18	24
.01	13	31	43	55	67
.02	7	21	27	33	39
.03	4	19	26	32	38
.04	4	18	26	32	38
.05	4	15	26	32	38
.07	3	14	26	32	38
.10	2	9	21	27	33
.15	1	7	14	21	27
.20	0	6	12	19	25
.25	0	6	12	19	25
.30	0	5	11	17	23
.35	0	4	11	17	23
.40	0	0	6	13	19
.45	0	0	0	4	10
.50	0	0	0	4	10
.60	0	0	0	0	0
.70	0	0	0	0	0
.80	0	0	0	0	0
.90	0	0	0	0	0
1.00	0	0	0	0	0
1.10	0	0	0	0	0
1.20	0	0	0	0	0
1.30	0	0	0	0	0
1.40	0	0	0	0	0
1.50	0	0	0	0	0
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

ENTRIES INDICATE NUMBER OF DURATION PERIODS WITH RAINFALL GREATER THAN OR EQUAL TO AMOUNT SHOWN

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

OCT-DEC INDEX

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 2208
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 60
TOTAL DAYS WITH PRECIPITATION - 15
TOTAL AMOUNT OF PRECIPITATION - 4.30 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .52 INCHES
MAXIMUM DAILY PRECIPITATION - 1.21 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 10 DAY 10 HOUR 5 - .52 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 10 DAY 1 HOUR 14 - .98 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 10 DAY 1 HOUR 14 - 1.21 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 10 DAY 1 HOUR 14 - 1.21 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 10 DAY 1 HOUR 14 - 1.59 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 557
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 2
TOTAL DAYS WITH PRECIPITATION - 2
TOTAL AMOUNT OF PRECIPITATION - .02 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .01 INCHES
MAXIMUM DAILY PRECIPITATION - .01 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

OCT-DEC INDEX

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS) 1	6	12	18	24
.01	60	147	224	292	358
.02	42	106	163	213	261
.03	32	92	138	176	212
.04	22	86	135	173	209
.05	21	78	129	167	203
.07	17	72	126	164	200
.10	14	58	107	139	169
.15	9	53	96	129	159
.20	6	44	81	108	132
.25	5	40	77	105	129
.30	4	37	74	102	126
.35	2	29	61	86	104
.40	1	20	49	81	99
.45	1	18	36	62	80
.50	1	15	33	56	75
.60	0	11	23	37	43
.70	0	9	21	33	41
.80	0	7	20	33	39
.90	0	6	18	33	39
1.00	0	0	6	14	17
1.10	0	0	6	12	16
1.20	0	0	3	9	15
1.30	0	0	0	0	6
1.40	0	0	0	0	6
1.50	0	0	0	0	5
1.60	0	0	0	0	0
1.70	0	0	0	0	0
1.80	0	0	0	0	0
1.90	0	0	0	0	0
2.00	0	0	0	0	0

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

JUL-DEC INDEX

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 4416
NUMBER OF MISSING HOURS - 2
TOTAL HOURS OF PRECIPITATION - 158
TOTAL DAYS WITH PRECIPITATION - 42
TOTAL AMOUNT OF PRECIPITATION - 17.59 INCHES
MAXIMUM 1-HOUR PRECIPITATION - 1.02 INCHES
MAXIMUM DAILY PRECIPITATION - 2.12 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 7 DAY 16 HOUR 9 - 1.02 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 8 DAY 17 HOUR 4 - 1.59 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 9 DAY 21 HOUR 24 - 2.18 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 9 DAY 21 HOUR 24 - 2.19 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 9 DAY 21 HOUR 24 - 2.19 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 557
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 2
TOTAL DAYS WITH PRECIPITATION - 2
TOTAL AMOUNT OF PRECIPITATION - .02 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .01 INCHES
MAXIMUM DAILY PRECIPITATION - .01 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

JUL-DEC INDEX

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT INCHES	DURATION (HOURS) 1	6	12	18	24
.01	158	396	618	822	1018
.02	121	337	539	726	905
.03	93	305	498	674	841
.04	76	273	453	617	772
.05	72	257	437	595	745
.07	61	241	427	586	736
.10	49	205	377	526	664
.15	35	182	334	471	601
.20	24	145	267	385	496
.25	20	137	258	371	476
.30	17	122	231	332	425
.35	14	109	214	311	398
.40	13	94	183	276	351
.45	9	91	169	255	330
.50	7	79	151	238	320
.60	5	65	134	211	281
.70	4	51	109	167	233
.80	3	43	104	163	223
.90	2	30	81	135	189
1.00	1	20	58	98	144
1.10	0	12	39	69	109
1.20	0	11	34	58	86
1.30	0	7	20	38	65
1.40	0	5	19	31	51
1.50	0	5	17	29	48
1.60	0	0	4	10	16
1.70	0	0	3	9	15
1.80	0	0	3	9	15
1.90	0	0	3	9	15
2.00	0	0	3	9	15

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

JAN-DEC INDEX

FOR ALL TEMPERATURES

TOTAL NUMBER OF HOURS - 8760
NUMBER OF MISSING HOURS - 2
TOTAL HOURS OF PRECIPITATION - 482
TOTAL DAYS WITH PRECIPITATION - 114
TOTAL AMOUNT OF PRECIPITATION - 39.96 INCHES
MAXIMUM 1-HOUR PRECIPITATION - 1.02 INCHES
MAXIMUM DAILY PRECIPITATION - 2.12 INCHES

1 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 7 DAY 16 HOUR 9 - 1.02 INCHES
6 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 23 HOUR 24 - 2.15 INCHES
12 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 23 HOUR 22 - 3.21 INCHES
18 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 23 HOUR 22 - 3.21 INCHES
24 HOUR PERIOD IN MONTH WITH GREATEST AMOUNT PRECIPITATION STARTS MONTH 5 DAY 23 HOUR 22 - 3.21 INCHES

FOR TEMPERATURES LESS THAN OR EQUAL TO 32 DEGREES

TOTAL NUMBER OF HOURS - 1876
NUMBER OF MISSING HOURS - 0
TOTAL HOURS OF PRECIPITATION - 20
TOTAL DAYS WITH PRECIPITATION - 13
TOTAL AMOUNT OF PRECIPITATION - .29 INCHES
MAXIMUM 1-HOUR PRECIPITATION - .07 INCHES
MAXIMUM DAILY PRECIPITATION - .07 INCHES

NPPD-COOPER NUCLEAR STATION PRECIPITATION DATA FOR 2019 RAIN VERSION PC-1.0

JAN-DEC INDEX

PRECIPITATION INTENSITY - DURATION
(NUMBER OF OCCURRENCES)

AMOUNT	DURATION (HOURS)				
INCHES	1	6	12	18	24
.01	482	1163	1743	2257	2688
.02	326	925	1446	1916	2339
.03	258	839	1324	1752	2123
.04	206	765	1224	1622	1970
.05	186	703	1150	1538	1867
.07	144	630	1069	1451	1778
.10	111	528	941	1301	1625
.15	78	418	787	1099	1391
.20	54	334	653	940	1211
.25	40	298	584	849	1097
.30	35	258	520	761	986
.35	25	226	464	693	899
.40	22	203	410	626	814
.45	16	183	372	570	751
.50	11	152	323	519	702
.60	9	116	264	422	587
.70	8	88	196	312	444
.80	5	75	186	300	421
.90	2	52	126	213	307
1.00	1	40	100	171	252
1.10	0	27	68	127	203
1.20	0	23	61	108	169
1.30	0	17	42	82	137
1.40	0	14	41	71	117
1.50	0	14	38	62	98
1.60	0	6	24	42	63
1.70	0	6	17	35	56
1.80	0	5	14	26	40
1.90	0	5	14	26	38
2.00	0	2	11	23	35

JOINT FREQUENCY DISTRIBUTION TABLES

The tables presented in this section are results obtained from processing of the hourly meteorological data collected at the Cooper Nuclear Station (CNS). The joint frequency distribution (JFD) tables represent the frequency of occurrence, in number of observations, that a particular wind speed, wind direction, and stability category occurred simultaneously. On a quarterly and semiannual basis, the JFDs were produced for wind speed and wind direction by atmospheric stability corresponding to the seven Pasquill stability classes, and for wind speed and wind direction for all stability categories combined. Atmospheric stability was classified per Regulatory Guide 1.23, using the 100-meter to 10-meter temperature difference (delta T) for the 100-meter JFDs and the 60-meter to 10-meter delta T for the 10-meter JFDs.

JFDs of 10-Meter Wind vs. Delta T

January-March 2019

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-MAR 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 3/31/19

*** JAN-MAR 2019 ***

STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-MAR 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 3/31/19

*** JAN-MAR 2019 ***

STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	7
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	8

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	3	9	6	6	8	6	4	1	3	4	0	5	1	3	1	1	61
3.51- 7.50	35	54	25	28	26	36	22	7	8	11	27	7	9	14	16	17	342
7.51-12.50	105	71	15	19	28	55	47	9	0	12	32	13	6	26	27	49	514
12.51-18.50	51	19	1	0	5	6	22	5	1	2	2	8	7	14	83	73	299
18.51-24.00	27	2	0	0	1	0	2	0	1	4	1	0	0	5	34	31	108
>24.00	13	0	0	0	1	0	0	1	3	5	0	0	0	0	5	3	31
TOTAL	234	155	47	53	69	103	97	23	16	38	62	33	23	62	166	174	1355

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-MAR 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 3/31/19

*** JAN-MAR 2019 ***

STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	4
1.01- 3.50	7	14	9	6	5	7	10	8	6	1	1	3	0	3	7	8	95
3.51- 7.50	14	24	4	14	11	22	26	20	26	6	7	7	6	20	16	10	233
7.51-12.50	10	4	0	1	1	13	10	16	29	14	7	6	6	6	34	12	169
12.51-18.50	1	1	0	0	0	1	6	5	8	2	1	0	1	3	3	7	39
18.51-24.00	0	0	0	0	1	0	6	2	0	0	0	0	1	0	1	1	12
>24.00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
TOTAL	32	43	13	21	18	43	58	51	70	23	16	16	14	32	61	38	553

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	7
1.01- 3.50	7	1	2	1	0	1	1	10	10	3	4	5	3	4	4	4	60
3.51- 7.50	4	2	0	0	0	1	0	11	12	5	1	5	7	9	3	2	62
7.51-12.50	0	0	0	0	0	0	0	0	9	1	2	1	2	0	0	0	15
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	11	3	2	1	0	2	1	21	31	9	7	11	12	13	7	6	144

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-MAR 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 3/31/19

*** JAN-MAR 2019 ***

STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	2
1.01- 3.50	7	4	0	0	0	0	2	11	18	8	3	5	5	6	6	8	83
3.51- 7.50	0	0	0	0	0	0	0	1	4	1	1	1	0	2	0	1	11
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	7	4	0	0	0	0	2	12	22	9	4	6	5	9	6	9	97

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	13
1.01- 3.50	24	28	17	13	13	14	17	30	37	16	8	18	9	16	18	21	299
3.51- 7.50	53	80	29	42	37	59	48	39	50	23	36	20	24	45	36	30	651
7.51-12.50	115	75	15	20	29	68	57	25	38	27	41	20	14	33	61	61	699
12.51-18.50	53	20	1	0	5	7	28	10	9	4	3	8	8	17	86	86	345
18.51-24.00	27	2	0	0	2	0	8	2	1	4	1	0	1	5	35	33	121
>24.00	13	0	0	0	1	0	0	1	4	5	0	0	0	0	5	3	32
TOTAL	285	205	62	75	87	148	158	107	139	79	89	66	56	116	241	234	2160

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-MAR 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 3/31/19

*** JAN-MAR 2019 ***

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 2160

TOTAL NUMBER OF VALID OBSERVATIONS: 2160

TOTAL NUMBER OF MISSING OBSERVATIONS: 0

PERCENT DATA RECOVERY FOR THIS PERIOD: 100.0 %

MEAN WIND SPEED FOR THIS PERIOD: 9.1 MPH

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 0

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
.09	.05	.37	62.73	25.60	6.67	4.49

DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
C	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0
D	234	155	47	53	69	103	97	23	16	38	62	33	23	62	166	174	0
E	32	43	13	21	18	43	58	51	70	23	16	16	14	32	61	38	4
F	11	3	2	1	0	2	1	21	31	9	7	11	12	13	7	6	7
G	7	4	0	0	0	0	2	12	22	9	4	6	5	9	6	9	2
TOTAL	285	205	62	75	87	148	158	107	139	79	89	66	56	116	241	234	13

JFDs of 10-Meter Wind vs. Delta T

April-June 2019

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - APR-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 4/ 1/19 - 6/30/19

*** APR-JUN 2019 ***

STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
>24.00	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
TOTAL	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - APR-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 4/ 1/19 - 6/30/19

*** APR-JUN 2019 ***

STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	1	0	0	0	0	0	0	0	3	5	0	0	0	0	0	0	9
18.51-24.00	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3
>24.00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	3
TOTAL	1	0	0	0	0	0	0	0	7	5	0	0	0	0	0	2	15

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	6	4	4	5	9	2	2	6	2	3	3	3	0	0	2	2	53
3.51- 7.50	51	35	28	25	33	53	39	29	14	13	10	5	7	7	9	13	371
7.51-12.50	88	49	22	24	44	76	71	41	38	33	28	8	17	23	17	43	622
12.51-18.50	32	5	4	9	17	16	22	7	34	56	22	11	10	8	16	55	324
18.51-24.00	20	0	0	0	3	2	0	1	6	11	3	3	3	6	3	10	71
>24.00	1	0	0	0	0	0	0	0	6	0	0	0	0	0	3	0	10
TOTAL	198	93	58	63	106	149	134	84	100	116	66	30	37	44	50	123	1451

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - APR-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 4/ 1/19 - 6/30/19

*** APR-JUN 2019 ***

STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	1
1.01- 3.50	6	4	4	2	6	3	1	5	14	13	6	5	5	6	5	3	88
3.51- 7.50	6	3	0	2	6	9	7	33	44	28	6	2	10	15	7	11	189
7.51-12.50	5	2	1	1	6	6	10	34	56	27	11	2	1	2	11	15	190
12.51-18.50	4	0	0	1	1	0	5	8	11	9	1	1	0	0	3	5	49
18.51-24.00	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	1	4
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	21	9	5	6	19	18	23	80	127	78	24	10	16	23	26	35	521

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	1
1.01- 3.50	8	1	4	0	1	0	1	2	4	8	8	4	7	10	6	11	75
3.51- 7.50	3	2	0	0	0	1	0	0	4	5	6	2	4	5	8	3	43
7.51-12.50	0	0	0	0	0	0	0	0	1	0	1	2	0	1	8	1	14
12.51-18.50	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	4
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	11	3	4	0	1	1	1	2	9	14	16	8	11	16	24	15	137

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - APR-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 4/ 1/19 - 6/30/19

*** APR-JUN 2019 ***

STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	5
1.01- 3.50	1	0	0	0	0	0	0	1	2	5	5	0	4	7	4	7	36
3.51- 7.50	1	0	0	0	0	0	0	0	1	0	0	0	1	1	6	1	11
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	3
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	2	0	0	0	0	0	0	1	3	5	5	0	6	8	12	10	57

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	7
1.01- 3.50	21	9	12	7	16	5	4	14	22	29	22	12	16	23	17	23	252
3.51- 7.50	61	40	28	27	39	63	46	62	63	46	22	9	22	28	30	28	614
7.51-12.50	93	51	23	25	50	82	81	75	95	60	40	12	19	26	38	59	829
12.51-18.50	37	5	4	10	18	16	27	15	48	71	24	12	10	8	21	62	388
18.51-24.00	20	0	0	0	3	2	0	1	12	12	3	3	3	6	3	11	79
>24.00	1	0	0	0	0	0	0	0	9	0	0	0	0	0	3	2	15
TOTAL	233	105	67	69	126	168	158	167	249	218	111	48	70	91	112	185	2184

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - APR-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 4/ 1/19 - 6/30/19

*** APR-JUN 2019 ***

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 2184

TOTAL NUMBER OF VALID OBSERVATIONS: 2184

TOTAL NUMBER OF MISSING OBSERVATIONS: 0

PERCENT DATA RECOVERY FOR THIS PERIOD: 100.0 %

MEAN WIND SPEED FOR THIS PERIOD: 9.2 MPH

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 0

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
.00	.14	.69	66.44	23.86	6.27	2.61

DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
C	1	0	0	0	0	0	0	0	7	5	0	0	0	0	0	2	0
D	198	93	58	63	106	149	134	84	100	116	66	30	37	44	50	123	0
E	21	9	5	6	19	18	23	80	127	78	24	10	16	23	26	35	1
F	11	3	4	0	1	1	1	2	9	14	16	8	11	16	24	15	1
G	2	0	0	0	0	0	0	1	3	5	5	0	6	8	12	10	5
TOTAL	233	105	67	69	126	168	158	167	249	218	111	48	70	91	112	185	7

JFDs of 10-Meter Wind vs. Delta T

January-June 2019

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 6/30/19

*** JAN-JUN 2019 ***

STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
>24.00	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
TOTAL	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	4

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 6/30/19

*** JAN-JUN 2019 ***

STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	2	0	0	0	0	0	0	0	3	5	0	0	0	0	0	6	16
18.51-24.00	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	1	4
>24.00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	3
TOTAL	2	0	0	0	0	0	0	0	7	5	0	0	0	0	0	9	23

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	9	13	10	11	17	8	6	7	5	7	3	8	1	3	3	3	114
3.51- 7.50	86	89	53	53	59	89	61	36	22	24	37	12	16	21	25	30	713
7.51-12.50	193	120	37	43	72	131	118	50	38	45	60	21	23	49	44	92	1136
12.51-18.50	83	24	5	9	22	22	44	12	35	58	24	19	17	22	99	128	623
18.51-24.00	47	2	0	0	4	2	2	1	7	15	4	3	3	11	37	41	179
>24.00	14	0	0	0	1	0	0	1	9	5	0	0	0	0	8	3	41
TOTAL	432	248	105	116	175	252	231	107	116	154	128	63	60	106	216	297	2806

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 6/30/19

*** JAN-JUN 2019 ***

STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	5
1.01- 3.50	13	18	13	8	11	10	11	13	20	14	7	8	5	9	12	11	183
3.51- 7.50	20	27	4	16	17	31	33	53	70	34	13	9	16	35	23	21	422
7.51-12.50	15	6	1	2	7	19	20	50	85	41	18	8	7	8	45	27	359
12.51-18.50	5	1	0	1	1	1	11	13	19	11	2	1	1	3	6	12	88
18.51-24.00	0	0	0	0	1	0	6	2	2	1	0	0	1	0	1	2	16
>24.00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
TOTAL	53	52	18	27	37	61	81	131	197	101	40	26	30	55	87	73	1074

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	8
1.01- 3.50	15	2	6	1	1	1	2	12	14	11	12	9	10	14	10	15	135
3.51- 7.50	7	4	0	0	0	2	0	11	16	10	7	7	11	14	11	5	105
7.51-12.50	0	0	0	0	0	0	0	0	10	1	3	3	2	1	8	1	29
12.51-18.50	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	4
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	22	6	6	1	1	3	2	23	40	23	23	19	23	29	31	21	281

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 6/30/19

*** JAN-JUN 2019 ***

STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	7
1.01- 3.50	8	4	0	0	0	0	2	12	20	13	8	5	9	13	10	15	119
3.51- 7.50	1	0	0	0	0	0	0	1	5	1	1	1	1	3	6	2	22
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	4
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	9	4	0	0	0	0	2	13	25	14	9	6	11	17	18	19	154

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	20
1.01- 3.50	45	37	29	20	29	19	21	44	59	45	30	30	25	39	35	44	551
3.51- 7.50	114	120	57	69	76	122	94	101	113	69	58	29	46	73	66	58	1265
7.51-12.50	208	126	38	45	79	150	138	100	133	87	81	32	33	59	99	120	1528
12.51-18.50	90	25	5	10	23	23	55	25	57	75	27	20	18	25	107	148	733
18.51-24.00	47	2	0	0	5	2	8	3	13	16	4	3	4	11	38	44	200
>24.00	14	0	0	0	1	0	0	1	13	5	0	0	0	0	8	5	47
TOTAL	518	310	129	144	213	316	316	274	388	297	200	114	126	207	353	419	4344

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 6/30/19

*** JAN-JUN 2019 ***

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 4344

TOTAL NUMBER OF VALID OBSERVATIONS: 4344

TOTAL NUMBER OF MISSING OBSERVATIONS: 0

PERCENT DATA RECOVERY FOR THIS PERIOD: 100.0 %

MEAN WIND SPEED FOR THIS PERIOD: 9.2 MPH

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 0

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
.05	.09	.53	64.59	24.72	6.47	3.55

DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
B	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0
C	2	0	0	0	0	0	0	0	7	5	0	0	0	0	0	9	0
D	432	248	105	116	175	252	231	107	116	154	128	63	60	106	216	297	0
E	53	52	18	27	37	61	81	131	197	101	40	26	30	55	87	73	5
F	22	6	6	1	1	3	2	23	40	23	23	19	23	29	31	21	8
G	9	4	0	0	0	0	2	13	25	14	9	6	11	17	18	19	7
TOTAL	518	310	129	144	213	316	316	274	388	297	200	114	126	207	353	419	20

Stability Classes by Hour of Day

10-Meter Wind vs. Delta T

January-June 2019

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-JUN 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 6/30/19
STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																						
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	1	1	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	2	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	E	F	F	F	F
19	1	3	F	E	E	F	E	F	F	F	F	E	D	D	D	D	D	E	E	F	G	F	F	G	G	G
19	1	4	F	G	G	G	G	F	F	G	E	D	D	D	D	D	D	D	E	E	G	G	G	F	G	F
19	1	5	F	G	G	G	G	G	G	G	G	F	F	E	D	D	D	E	F	F	G	G	G	G	G	G
19	1	6	G	G	G	F	F	E	E	E	E	E	E	D	D	D	D	E	E	E	E	E	E	E	E	E
19	1	7	E	E	F	F	F	F	F	E	E	D	D	D	D	D	D	D	E	E	E	F	E	E	E	E
19	1	8	E	E	E	E	D	D	E	E	E	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
19	1	9	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	F	E
19	1	10	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
19	1	11	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	D	D	D
19	1	12	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	13	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	E	F	F	F	G	G	F	E
19	1	14	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	15	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	16	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	17	D	D	D	D	D	D	D	D	D	D	D	D	B	A	E	A	D	D	D	D	D	D	D	D
19	1	18	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	19	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
19	1	20	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	21	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	22	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	23	D	D	D	D	D	E	E	F	F	E	E	D	D	D	D	D	D	E	F	G	F	G	F	G
19	1	24	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F	G	G
19	1	25	G	G	G	G	F	F	F	F	E	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
19	1	26	E	D	D	D	D	D	D	E	E	E	E	D	D	D	D	D	D	E	E	E	E	D	D	D
19	1	27	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
19	1	28	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	D	D	E	E	F
19	1	29	F	F	E	F	F	F	F	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	D	D
19	1	30	D	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	31	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	2	1	E	E	E	E	E	F	E	E	E	E	E	E	D	D	D	E	E	F	F	F	F	G	F	E
19	2	2	E	E	F	F	E	E	F	E	E	E	E	E	E	E	E	E	F	G	F	E	E	F	F	E
19	2	3	E	E	E	E	E	F	E	E	F	F	E	E	E	E	E	E	E	E	E	E	E	E	F	F
19	2	4	F	F	D	D	D	D	D	D	D	D	C	C	C	C	C	D	D	D	D	D	D	D	D	D
19	2	5	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	6	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	7	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	8	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F	E	E
19	2	9	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	10	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D
19	2	11	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	12	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	G	G	G	G
19	2	13	G	G	F	G	G	G	F	E	E	D	D	D	D	D	D	E	E	E	E	F	F	F	G	G
19	2	14	G	G	E	E	E	F	G	G	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-JUN 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 6/30/19
STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																					
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	2	15	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	16	D	E	E	E	E	E	F	F	F	E	D	D	D	D	D	E	D	E	D	D	D	D	D	D
19	2	17	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D	E
19	2	18	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	F	F	E	D	E
19	2	19	E	E	E	F	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	20	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	E	F	F	F
19	2	21	F	G	G	G	G	G	G	G	G	G	F	E	D	D	D	D	D	E	E	E	E	E	E	E
19	2	22	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	23	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	24	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
19	2	25	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	26	D	D	D	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	27	D	D	D	D	D	D	C	C	C	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	2	28	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	D	E	E	E	E	F	F
19	3	1	E	E	E	D	E	E	E	E	E	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D
19	3	2	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D
19	3	3	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	3	4	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
19	3	5	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	F	G	F	F	F
19	3	6	F	F	E	E	F	G	G	G	F	E	D	E	E	E	D	D	D	D	E	E	E	E	E	E
19	3	7	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	3	8	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D	D	D	D
19	3	9	D	D	D	D	E	E	D	D	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D
19	3	10	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	E	F	F
19	3	11	F	G	F	F	G	G	G	G	E	E	D	D	D	D	D	D	D	D	E	F	F	G	F	F
19	3	12	E	E	E	E	E	F	E	E	E	E	E	F	E	E	E	E	E	E	E	E	E	E	E	E
19	3	13	E	E	E	E	E	E	E	E	E	E	D	D	E	E	D	D	D	E	E	E	E	E	E	E
19	3	14	E	E	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	3	15	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F	F	G
19	3	16	G	G	G	G	G	F	F	F	E	D	D	D	D	E	E	D	D	D	E	E	E	E	E	D
19	3	17	E	D	E	E	E	E	E	E	D	D	D	D	D	D	D	D	E	E	E	F	F	F	F	F
19	3	18	E	E	E	E	D	D	D	D	D	D	D	D	E	D	D	D	D	E	E	F	G	F	E	E
19	3	19	E	E	E	E	E	E	D	D	D	D	D	D	D	D	E	E	E	D	D	D	D	D	D	D
19	3	20	D	D	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	3	21	E	D	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	G	G	G	G	G
19	3	22	G	G	G	G	G	G	G	F	E	E	D	D	E	E	D	D	D	E	F	F	G	F	E	E
19	3	23	E	E	E	E	E	E	D	D	D	D	D	D	E	E	E	D	E	E	E	E	E	E	D	D
19	3	24	D	E	E	E	E	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	3	25	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	E	E	E	D
19	3	26	D	D	D	D	D	D	D	D	D	D	E	E	D	D	E	D	E	E	E	E	E	E	E	E
19	3	27	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
19	3	28	E	E	E	E	F	F	E	D	D	D	D	D	D	E	D	D	D	D	E	E	E	E	D	D
19	3	29	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	3	30	D	D	D	D	D	E	D	D	D	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D
19	3	31	D	D	D	D	D	E	F	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-JUN 2019
SITE IDENTIFIER:NPPD
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STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																						
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	4	1	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
19	4	2	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	F	F	F	E	E
19	4	3	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	E	E	E	D	D	D	D	D	D
19	4	4	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	D	D	E	E	E	E	E	E
19	4	5	E	E	D	D	D	D	D	D	D	D	D	D	E	E	D	D	D	D	E	E	E	E	E	E
19	4	6	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	D	E	E
19	4	7	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	G	G	G
19	4	8	G	G	G	G	G	G	F	E	D	D	D	D	D	D	D	D	D	D	E	E	E	F	E	E
19	4	9	E	E	E	E	F	G	F	D	D	D	D	D	D	D	D	D	D	D	E	E	E	D	D	D
19	4	10	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D	D	D	D	D	D	D
19	4	11	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	4	12	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E
19	4	13	E	E	E	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	4	14	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	F	E	E	D	D
19	4	15	D	D	D	D	D	E	E	D	D	D	D	C	C	C	D	D	D	D	E	E	E	F	F	F
19	4	16	E	F	F	F	F	F	F	F	E	D	E	D	D	D	D	D	D	E	E	E	E	E	E	E
19	4	17	E	E	E	E	E	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	4	18	D	D	D	D	D	D	D	D	D	D	D	D	C	D	D	D	D	D	D	D	D	D	D	D
19	4	19	D	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	G	G	G	G
19	4	20	G	G	G	G	G	G	F	E	D	D	D	C	C	C	C	D	D	D	E	E	E	E	E	E
19	4	21	E	E	E	E	E	E	E	D	D	D	D	C	B	B	C	D	D	D	E	E	E	E	E	E
19	4	22	D	E	E	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	4	23	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E
19	4	24	E	E	E	E	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	4	25	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	E	E
19	4	26	E	E	E	D	D	E	F	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	D
19	4	27	D	D	D	E	D	D	D	D	D	D	D	D	D	D	C	C	D	D	D	D	D	D	D	D
19	4	28	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	4	29	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	4	30	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	5	1	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	5	2	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	F	F	F	F	F
19	5	3	E	E	D	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F
19	5	4	E	F	F	F	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	5	5	E	E	E	F	E	E	E	D	D	D	D	D	C	C	D	D	D	E	D	E	G	E	E	D
19	5	6	E	E	E	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	5	7	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	5	8	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	5	9	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	F	F	E	F
19	5	10	F	F	G	F	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E
19	5	11	E	D	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	5	12	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D
19	5	13	D	E	E	E	F	F	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E
19	5	14	E	E	E	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	F	G	G	G	G
19	5	15	G	G	G	E	D	E	D	D	D	D	D	D	D	D	D	D	D	D	E	F	E	E	E	

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-JUN 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 6/30/19
STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																						
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	5	16	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	5	17	E	E	E	E	E	E	E	D	D	D	D	D	B	C	D	D	D	D	E	E	E	E	E	E
19	5	18	E	E	E	D	E	E	E	D	D	D	D	D	E	D	D	D	D	D	D	E	E	E	E	E
19	5	19	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E
19	5	20	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	5	21	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	E	E	E
19	5	22	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	F	F
19	5	23	F	G	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E
19	5	24	E	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	5	25	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	E	E	E	E	E	F	F	E	E
19	5	26	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	D
19	5	27	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	D	D
19	5	28	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	5	29	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E
19	5	30	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	E	E	F
19	5	31	F	G	F	F	F	E	E	E	E	D	D	D	D	D	D	D	D	D	E	F	F	F	F	E
19	6	1	E	E	F	F	G	F	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	6	2	E	E	E	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	F	G	G	F	F
19	6	3	F	F	F	E	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E
19	6	4	E	D	D	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	F	G	G	F
19	6	5	F	F	E	E	E	F	E	D	D	D	D	E	D	D	D	D	D	D	E	F	F	E	E	F
19	6	6	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	G	G	G
19	6	7	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D	D	D
19	6	8	E	E	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	G	E	D	E
19	6	9	F	F	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F
19	6	10	F	F	F	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	F	G	G	G	F
19	6	11	E	F	F	F	F	F	E	E	D	D	D	D	D	D	D	D	D	F	E	E	E	E	D	E
19	6	12	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F	G
19	6	13	G	G	G	G	G	G	F	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	6	14	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	6	15	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	D	D	E	F	G	F	F
19	6	16	G	G	G	E	F	E	E	D	D	D	D	D	D	D	D	D	D	D	E	F	F	E	E	D
19	6	17	D	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D	D	D
19	6	18	D	D	D	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	6	19	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	F	F
19	6	20	F	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	6	21	D	D	D	D	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D
19	6	22	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D
19	6	23	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	6	24	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	E	E
19	6	25	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	F	F	E	E	E
19	6	26	E	E	F	E	F	F	E	E	E	G	G	G	F	D	D	D	D	D	E	E	E	E	E	E
19	6	27	E	E	E	E	E	E	D	D	D	D	D	D	D	E	D	D	D	D	D	E	E	E	E	E
19	6	28	E	D	E	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
19	6	29	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-JUN 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 6/30/19
STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																							
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	6	30	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E

JFDs of 10-Meter Wind vs. Delta T

July-September 2019

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JUL-SEP 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 9/30/19

*** JUL-SEP 2019 ***

STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	5
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	1	1	0	0	0	0	5	0	0	0	0	0	0	0	7

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JUL-SEP 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 9/30/19

*** JUL-SEP 2019 ***

STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	1	0	3	2	1	0	0	0	0	0	0	0	0	0	0	7
3.51- 7.50	1	2	1	1	8	5	2	1	0	0	0	0	0	0	0	0	21
7.51-12.50	9	1	0	0	0	1	0	1	12	2	0	0	0	0	0	2	28
12.51-18.50	1	0	0	0	0	0	2	0	24	0	0	0	0	0	0	0	27
18.51-24.00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	11	4	1	4	10	7	4	2	37	2	0	0	0	0	0	2	84

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	2	5	4	9	13	7	2	10	2	2	2	0	2	2	2	3	67
3.51- 7.50	23	28	27	47	65	85	47	60	46	14	12	10	10	4	8	14	500
7.51-12.50	63	32	6	4	19	75	101	62	83	37	20	12	6	9	10	25	564
12.51-18.50	23	5	1	0	0	3	19	3	50	39	1	3	0	1	6	6	160
18.51-24.00	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	8
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	111	70	38	60	97	170	169	135	185	96	35	25	18	16	26	48	1299

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JUL-SEP 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 9/30/19

*** JUL-SEP 2019 ***

STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	1
1.01- 3.50	5	6	5	2	4	4	2	2	12	15	9	4	6	9	11	8	104
3.51- 7.50	10	2	2	1	3	1	7	32	78	31	16	9	8	2	11	20	233
7.51-12.50	6	2	0	0	0	0	2	21	83	59	11	1	0	7	3	5	200
12.51-18.50	0	0	0	0	0	0	0	3	20	8	2	0	1	0	0	0	34
18.51-24.00	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	21	10	7	3	7	5	11	58	194	113	39	14	15	18	25	33	574

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	14
1.01- 3.50	2	0	1	0	0	0	0	0	8	17	10	13	13	15	12	14	105
3.51- 7.50	1	0	0	0	0	1	0	1	17	5	4	1	5	6	7	6	54
7.51-12.50	0	0	0	0	0	0	0	0	0	2	0	0	0	3	6	0	11
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	3	0	1	0	0	1	0	1	25	24	14	14	18	24	26	20	185

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JUL-SEP 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 9/30/19

*** JUL-SEP 2019 ***

STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	6
1.01- 3.50	0	0	0	1	0	0	0	0	0	0	3	4	4	11	8	3	34
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	1	2	1	5	4	0	13
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	4
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	1	0	0	0	0	0	0	4	7	5	18	13	3	57

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	21
1.01- 3.50	9	12	11	16	19	12	4	12	22	34	24	21	25	37	33	28	319
3.51- 7.50	35	32	30	49	76	92	56	94	141	50	33	22	24	17	30	40	821
7.51-12.50	78	35	6	4	19	76	103	84	178	100	31	14	6	21	20	32	807
12.51-18.50	24	5	1	0	0	3	21	6	99	47	3	3	1	1	7	6	227
18.51-24.00	0	0	0	0	0	0	0	0	6	4	1	0	0	0	0	0	11
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	146	84	48	69	114	183	184	196	446	235	92	60	56	76	90	106	2206

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JUL-SEP 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 9/30/19

*** JUL-SEP 2019 ***

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 2208

TOTAL NUMBER OF VALID OBSERVATIONS: 2206

TOTAL NUMBER OF MISSING OBSERVATIONS: 2

PERCENT DATA RECOVERY FOR THIS PERIOD: 99.9 %

MEAN WIND SPEED FOR THIS PERIOD: 7.6 MPH

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 0

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
.00	.32	3.81	58.88	26.02	8.39	2.58

DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	1	1	0	0	0	0	5	0	0	0	0	0	0	0	0
C	11	4	1	4	10	7	4	2	37	2	0	0	0	0	0	2	0
D	111	70	38	60	97	170	169	135	185	96	35	25	18	16	26	48	0
E	21	10	7	3	7	5	11	58	194	113	39	14	15	18	25	33	1
F	3	0	1	0	0	1	0	1	25	24	14	14	18	24	26	20	14
G	0	0	0	1	0	0	0	0	0	0	4	7	5	18	13	3	6
TOTAL	146	84	48	69	114	183	184	196	446	235	92	60	56	76	90	106	21

JFDs of 10-Meter Wind vs. Delta T

October-December 2019

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - OCT-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 10/ 1/19 - 12/31/19

*** OCT-DEC 2019 ***

STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	3

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
12.51-18.50	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3
18.51-24.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
>24.00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
TOTAL	3	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	8

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - OCT-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 10/ 1/19 - 12/31/19

*** OCT-DEC 2019 ***

STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	5	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	8
12.51-18.50	0	1	0	0	0	0	0	0	9	0	0	0	0	0	0	3	13
18.51-24.00	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	10
>24.00	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
TOTAL	17	3	0	0	0	0	0	0	9	0	1	1	0	0	0	6	37

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	4	4	8	8	5	4	5	5	3	2	3	6	3	1	3	3	67
3.51- 7.50	38	56	18	9	14	28	26	9	12	9	6	15	6	12	26	34	318
7.51-12.50	49	17	12	2	2	33	36	13	28	8	12	16	15	38	44	71	396
12.51-18.50	45	8	0	0	0	2	14	7	29	5	3	8	16	44	48	61	290
18.51-24.00	11	4	0	0	0	0	1	0	7	1	1	3	1	3	21	7	60
>24.00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	5
TOTAL	149	89	38	19	21	67	82	34	79	25	25	48	41	98	145	176	1136

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - OCT-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 10/ 1/19 - 12/31/19

*** OCT-DEC 2019 ***

STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	2
1.01- 3.50	4	2	1	2	4	3	2	4	9	15	8	4	6	9	2	3	78
3.51- 7.50	10	3	2	4	2	11	16	33	55	16	18	12	8	8	18	10	226
7.51-12.50	4	0	0	0	1	2	19	37	49	19	14	7	3	19	26	14	214
12.51-18.50	1	0	0	0	0	1	1	2	12	5	2	0	0	0	1	1	26
18.51-24.00	2	0	0	0	0	0	0	0	1	0	0	0	0	0	2	1	6
>24.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
TOTAL	22	5	3	6	7	17	38	76	126	55	42	23	17	36	49	29	553

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	10
1.01- 3.50	3	1	0	0	0	2	3	13	36	26	7	7	12	9	9	8	136
3.51- 7.50	3	0	0	0	0	0	1	12	42	13	7	16	7	12	10	3	126
7.51-12.50	0	0	0	0	0	0	0	1	26	6	1	5	3	8	3	0	53
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	6	1	0	0	0	2	4	26	104	45	15	28	22	31	22	11	327

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - OCT-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 10/ 1/19 - 12/31/19

*** OCT-DEC 2019 ***

STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	16
1.01- 3.50	8	0	0	0	0	0	0	2	25	16	12	9	7	5	5	6	95
3.51- 7.50	1	0	0	0	0	0	0	1	7	0	5	1	0	10	2	2	29
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	9	0	0	0	0	0	0	3	32	16	17	11	7	15	7	8	141

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	28
1.01- 3.50	19	7	9	10	9	9	10	24	73	59	30	26	28	24	19	20	376
3.51- 7.50	52	59	20	13	16	39	43	55	116	38	36	46	21	42	56	49	701
7.51-12.50	58	18	12	2	3	35	55	51	105	33	28	30	21	65	73	85	674
12.51-18.50	46	9	0	0	0	3	15	9	53	10	5	8	16	46	50	65	335
18.51-24.00	20	5	0	0	0	0	1	0	8	1	1	3	1	3	23	11	77
>24.00	11	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	14
TOTAL	206	98	41	25	28	86	124	139	355	141	100	113	87	180	224	230	2205

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - OCT-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 10/ 1/19 - 12/31/19

*** OCT-DEC 2019 ***

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 2208

TOTAL NUMBER OF VALID OBSERVATIONS: 2205

TOTAL NUMBER OF MISSING OBSERVATIONS: 3

PERCENT DATA RECOVERY FOR THIS PERIOD: 99.9 %

MEAN WIND SPEED FOR THIS PERIOD: 8.3 MPH

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 0

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
.14	.36	1.68	51.52	25.08	14.83	6.39

DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0
B	3	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
C	17	3	0	0	0	0	0	0	9	0	1	1	0	0	0	6	0
D	149	89	38	19	21	67	82	34	79	25	25	48	41	98	145	176	0
E	22	5	3	6	7	17	38	76	126	55	42	23	17	36	49	29	2
F	6	1	0	0	0	2	4	26	104	45	15	28	22	31	22	11	10
G	9	0	0	0	0	0	0	3	32	16	17	11	7	15	7	8	16
TOTAL	206	98	41	25	28	86	124	139	355	141	100	113	87	180	224	230	28

JFDs of 10-Meter Wind vs. Delta T

July-December 2019

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JUL-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19

*** JUL-DEC 2019 ***

STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	3

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
12.51-18.50	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	8
18.51-24.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
>24.00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
TOTAL	3	0	1	1	0	0	0	0	10	0	0	0	0	0	0	0	15

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JUL-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19

*** JUL-DEC 2019 ***

STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	1	0	3	2	1	0	0	0	0	0	0	0	0	0	0	7
3.51- 7.50	1	2	1	1	8	5	2	1	0	0	0	0	0	0	0	0	21
7.51-12.50	14	2	0	0	0	1	0	1	12	2	1	1	0	0	0	2	36
12.51-18.50	1	1	0	0	0	0	2	0	33	0	0	0	0	0	0	3	40
18.51-24.00	6	1	0	0	0	0	0	0	1	0	0	0	0	0	0	3	11
>24.00	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
TOTAL	28	7	1	4	10	7	4	2	46	2	1	1	0	0	0	8	121

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	6	9	12	17	18	11	7	15	5	4	5	6	5	3	5	6	134
3.51- 7.50	61	84	45	56	79	113	73	69	58	23	18	25	16	16	34	48	818
7.51-12.50	112	49	18	6	21	108	137	75	111	45	32	28	21	47	54	96	960
12.51-18.50	68	13	1	0	0	5	33	10	79	44	4	11	16	45	54	67	450
18.51-24.00	11	4	0	0	0	0	1	0	11	5	1	3	1	3	21	7	68
>24.00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	5
TOTAL	260	159	76	79	118	237	251	169	264	121	60	73	59	114	171	224	2435

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JUL-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19

*** JUL-DEC 2019 ***

STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	3
1.01- 3.50	9	8	6	4	8	7	4	6	21	30	17	8	12	18	13	11	182
3.51- 7.50	20	5	4	5	5	12	23	65	133	47	34	21	16	10	29	30	459
7.51-12.50	10	2	0	0	1	2	21	58	132	78	25	8	3	26	29	19	414
12.51-18.50	1	0	0	0	0	1	1	5	32	13	4	0	1	0	1	1	60
18.51-24.00	2	0	0	0	0	0	0	0	2	0	1	0	0	0	2	1	8
>24.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
TOTAL	43	15	10	9	14	22	49	134	320	168	81	37	32	54	74	62	1127

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	24
1.01- 3.50	5	1	1	0	0	2	3	13	44	43	17	20	25	24	21	22	241
3.51- 7.50	4	0	0	0	0	1	1	13	59	18	11	17	12	18	17	9	180
7.51-12.50	0	0	0	0	0	0	0	1	26	8	1	5	3	11	9	0	64
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	9	1	1	0	0	3	4	27	129	69	29	42	40	55	48	31	512

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JUL-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19

*** JUL-DEC 2019 ***

STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	22
1.01- 3.50	8	0	0	1	0	0	0	2	25	16	15	13	11	16	13	9	129
3.51- 7.50	1	0	0	0	0	0	0	1	7	0	6	3	1	15	6	2	42
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	0	5
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	9	0	0	1	0	0	0	3	32	16	21	18	12	33	20	11	198

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	49
1.01- 3.50	28	19	20	26	28	21	14	36	95	93	54	47	53	61	52	48	695
3.51- 7.50	87	91	50	62	92	131	99	149	257	88	69	68	45	59	86	89	1522
7.51-12.50	136	53	18	6	22	111	158	135	283	133	59	44	27	86	93	117	1481
12.51-18.50	70	14	1	0	0	6	36	15	152	57	8	11	17	47	57	71	562
18.51-24.00	20	5	0	0	0	0	1	0	14	5	2	3	1	3	23	11	88
>24.00	11	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	14
TOTAL	352	182	89	94	142	269	308	335	801	376	192	173	143	256	314	336	4411

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JUL-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19

*** JUL-DEC 2019 ***

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 4416

TOTAL NUMBER OF VALID OBSERVATIONS: 4411

TOTAL NUMBER OF MISSING OBSERVATIONS: 5

PERCENT DATA RECOVERY FOR THIS PERIOD: 99.9 %

MEAN WIND SPEED FOR THIS PERIOD: 8.0 MPH

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 0

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
.07	.34	2.74	55.20	25.55	11.61	4.49

DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0
B	3	0	1	1	0	0	0	0	10	0	0	0	0	0	0	0	0
C	28	7	1	4	10	7	4	2	46	2	1	1	0	0	0	8	0
D	260	159	76	79	118	237	251	169	264	121	60	73	59	114	171	224	0
E	43	15	10	9	14	22	49	134	320	168	81	37	32	54	74	62	3
F	9	1	1	0	0	3	4	27	129	69	29	42	40	55	48	31	24
G	9	0	0	1	0	0	0	3	32	16	21	18	12	33	20	11	22
TOTAL	352	182	89	94	142	269	308	335	801	376	192	173	143	256	314	336	49

Stability Classes by Hour of Day

10-Meter Wind vs. Delta T

July-December 2019

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JUL-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19
STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																					
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	7	1	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	7	2	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	7	3	E	E	E	E	E	E	D	D	D	D	D	D	D	D	C	D	D	D	D	E	E	E	D	D
19	7	4	E	E	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	C	D	D	E	E	E
19	7	5	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	F	F
19	7	6	F	F	F	E	E	E	D	D	D	D	C	C	C	D	D	D	D	D	D	E	F	E	F	E
19	7	7	E	D	D	D	D	D	D	D	D	D	C	B	C	C	D	D	D	D	E	E	F	D	D	E
19	7	8	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	7	9	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	G	G	G
19	7	10	G	F	G	F	F	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	F	G	G	G
19	7	11	G	F	G	F	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	G	G	G	G
19	7	12	G	G	G	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F	F
19	7	13	F	F	F	F	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	F	F
19	7	14	F	E	E	E	E	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	D
19	7	15	D	D	D	D	D	D	D	D	D	D	D	D	C	D	D	D	D	D	D	D	-	-	E	E
19	7	16	E	E	E	E	E	E	E	D	E	D	D	D	D	D	D	D	D	D	D	D	D	F	F	F
19	7	17	F	F	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	7	18	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	C	C	D	D	D	E	E	E	E
19	7	19	E	E	E	E	E	E	E	E	D	D	D	D	C	C	B	B	B	C	C	D	D	E	E	E
19	7	20	E	E	E	E	E	E	E	E	D	D	D	C	B	D	D	D	D	D	D	D	D	E	D	D
19	7	21	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	7	22	D	D	E	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E
19	7	23	D	E	E	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	E	E	F	G
19	7	24	G	G	G	G	G	F	G	G	F	E	D	D	D	D	D	D	D	D	D	D	D	E	E	F
19	7	25	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E
19	7	26	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E
19	7	27	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	C	C	D	D	D	D	E	E	E
19	7	28	E	E	E	E	E	E	E	E	D	D	D	D	D	D	C	D	D	D	D	D	D	E	F	E
19	7	29	E	E	E	D	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	G	F	F
19	7	30	E	E	F	F	F	E	F	E	D	D	D	D	D	C	C	B	D	D	D	D	D	D	D	D
19	7	31	D	D	D	D	D	D	E	D	D	D	D	D	D	D	D	C	C	D	D	D	D	D	D	D
19	8	1	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	8	2	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	8	3	D	D	D	D	D	D	E	E	D	D	D	C	C	D	C	D	D	D	D	D	D	D	E	F
19	8	4	F	F	F	F	F	F	F	F	E	D	D	D	D	D	C	D	D	D	D	D	D	G	G	G
19	8	5	G	F	F	E	F	F	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E
19	8	6	F	E	E	E	E	E	D	E	D	D	D	D	D	D	D	D	C	D	D	D	D	E	F	F
19	8	7	F	F	E	E	E	F	E	E	E	F	D	D	D	D	D	D	D	D	D	D	D	E	F	F
19	8	8	E	F	F	F	F	F	E	E	E	D	D	D	C	C	D	D	D	D	D	E	F	F	F	F
19	8	9	D	D	D	D	D	D	D	D	D	D	D	D	D	D	C	D	D	D	D	D	D	D	D	D
19	8	10	D	D	D	E	E	E	E	D	D	D	D	D	D	D	D	D	C	D	C	D	D	E	E	E
19	8	11	E	E	F	E	E	E	E	E	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	8	12	D	D	D	D	D	D	D	E	E	D	D	D	D	D	D	D	D	D	D	D	E	F	G	G
19	8	13	F	E	E	F	E	E	F	F	E	D	D	D	D	D	D	D	D	D	D	D	F	G	G	G

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JUL-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19
STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																					
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	8	14	G	F	E	D	D	D	D	E	E	D	D	D	C	D	C	C	C	C	D	D	D	F	F	F
19	8	15	F	G	G	F	F	F	G	F	F	E	D	D	D	E	D	D	E	D	D	D	D	D	D	D
19	8	16	D	D	D	D	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	8	17	D	D	D	D	D	D	D	D	D	D	D	D	C	C	C	C	D	D	D	D	D	E	E	E
19	8	18	E	D	D	D	E	E	E	E	E	D	D	D	D	C	D	D	D	D	D	D	D	E	E	E
19	8	19	E	E	E	E	E	E	E	F	E	D	D	D	C	D	D	D	D	D	D	D	D	D	D	D
19	8	20	D	E	E	E	E	E	E	E	E	E	E	F	D	D	D	D	D	D	D	D	E	F	F	F
19	8	21	E	E	E	E	E	E	E	E	F	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	8	22	D	D	D	D	D	D	D	D	D	D	D	D	C	C	D	C	D	D	D	D	D	D	D	D
19	8	23	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	8	24	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	8	25	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	8	26	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	G	G
19	8	27	G	F	F	F	F	F	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F
19	8	28	F	F	F	F	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	F	G	G	G
19	8	29	F	F	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	D	D
19	8	30	D	D	D	E	D	E	D	D	E	D	D	D	D	C	C	D	C	D	D	D	D	D	D	D
19	8	31	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	C	D	D	D	D	D
19	9	1	D	D	D	D	D	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	F
19	9	2	E	F	E	E	E	E	E	E	E	D	D	D	D	C	C	B	C	D	D	D	E	E	E	E
19	9	3	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	D
19	9	4	D	D	D	D	E	E	E	E	D	D	D	D	C	C	C	C	C	C	D	D	E	E	E	E
19	9	5	D	D	D	D	D	E	E	E	D	D	D	C	C	C	C	D	D	D	D	E	F	E	F	F
19	9	6	F	G	G	E	D	D	D	D	D	D	D	C	C	C	C	C	D	D	D	D	E	F	E	E
19	9	7	E	E	E	E	E	D	E	E	D	D	D	D	D	C	D	D	D	D	D	D	D	D	D	D
19	9	8	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	9	9	D	D	D	D	D	D	D	E	E	D	D	D	D	D	D	E	E	E	E	G	F	F	F	F
19	9	10	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	C	D	D	D	D	E	E	E	E
19	9	11	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	C	D	D	D	E	E	E	E	E
19	9	12	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	F	F	G	F
19	9	13	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	F	F	E	E
19	9	14	E	E	E	F	F	F	F	F	E	E	D	C	C	C	C	C	D	D	D	E	F	E	E	E
19	9	15	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	F	G	G	F	F
19	9	16	F	F	F	F	E	E	E	F	F	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E
19	9	17	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	9	18	E	E	E	E	E	E	E	E	E	D	D	D	D	D	E	D	D	D	D	E	F	F	F	E
19	9	19	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	E
19	9	20	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	D	D	D
19	9	21	D	D	D	D	D	D	E	E	D	D	D	D	D	D	D	D	E	D	D	D	E	D	D	D
19	9	22	E	E	E	D	D	D	D	D	D	D	D	D	D	C	D	D	D	D	D	E	G	G	G	G
19	9	23	G	F	F	F	F	F	F	F	E	D	D	D	C	C	C	C	D	D	D	E	F	F	E	E
19	9	24	E	E	F	F	F	E	F	F	E	E	D	D	D	C	C	D	D	D	D	E	E	E	E	D
19	9	25	D	D	D	E	F	G	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	9	26	D	D	E	E	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	9	27	E	E	D	D	E	E	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JUL-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19
STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																					
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	9	28	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	9	29	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E
19	9	30	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	E	E	E	E	E	E	E
19	10	1	E	E	E	E	E	E	E	E	E	D	D	D	D	D	E	E	D	E	D	D	D	D	D	D
19	10	2	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	10	3	D	D	D	D	D	D	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	D
19	10	4	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	10	5	D	D	D	D	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	E	F	G	G	G
19	10	6	F	G	G	G	G	G	F	F	F	F	F	E	D	D	E	D	D	D	E	G	G	G	F	G
19	10	7	G	G	F	G	F	F	G	G	G	F	D	D	D	D	D	D	D	D	E	F	G	F	F	F
19	10	8	F	F	F	F	F	E	E	E	E	E	D	D	C	C	C	C	D	D	D	E	E	E	E	E
19	10	9	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E
19	10	10	D	D	D	D	E	E	E	E	E	D	D	D	D	D	D	A	D	D	D	D	D	D	D	D
19	10	11	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	F
19	10	12	F	F	F	E	F	E	E	E	E	E	D	D	C	D	D	D	D	D	D	E	F	G	F	F
19	10	13	F	G	G	G	G	E	E	E	F	E	E	D	D	D	D	D	D	D	D	F	G	G	G	G
19	10	14	G	G	G	G	E	D	D	D	D	D	D	D	D	-	-	-	D	D	E	E	F	F	F	F
19	10	15	F	E	F	F	F	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D
19	10	16	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	F	F
19	10	17	F	F	F	F	F	F	E	E	E	E	D	D	C	D	D	D	D	D	D	E	E	E	E	E
19	10	18	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	F	F	F	F
19	10	19	E	E	E	E	E	E	E	D	D	E	D	D	D	D	D	D	D	D	D	F	G	G	G	G
19	10	20	G	G	G	G	F	F	F	E	E	E	D	D	D	D	D	D	D	E	E	D	D	D	E	E
19	10	21	E	D	E	E	F	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	10	22	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	G	G	G	F
19	10	23	F	F	F	E	E	F	E	E	E	E	E	E	D	D	D	D	D	D	D	E	D	D	D	D
19	10	24	D	D	D	D	D	D	D	D	D	D	D	C	D	D	D	C	C	D	D	E	F	F	E	F
19	10	25	F	F	F	E	E	F	F	G	G	G	E	D	D	D	D	D	D	D	D	E	F	F	F	F
19	10	26	F	F	F	E	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	E	F	G	F	G
19	10	27	G	G	F	E	E	E	D	E	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	10	28	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	10	29	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	10	30	D	D	D	D	D	D	D	D	D	D	D	D	D	C	C	D	D	D	D	D	D	D	D	D
19	10	31	D	D	D	D	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	F	F	F	F
19	11	1	E	E	F	F	F	F	E	E	E	E	D	D	D	D	D	D	D	D	D	F	G	G	F	E
19	11	2	E	E	E	E	F	E	F	E	E	E	D	D	D	D	D	D	D	D	D	E	F	F	F	F
19	11	3	F	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	F	G	G	G	G
19	11	4	G	G	G	G	F	F	F	F	E	E	D	D	D	D	D	D	D	D	D	E	E	F	F	F
19	11	5	F	E	D	D	D	E	E	F	F	E	D	D	D	D	D	D	E	E	F	F	F	F	F	F
19	11	6	E	E	E	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	C	D	D	D	D
19	11	7	C	C	D	C	D	D	D	D	C	C	C	D	D	D	D	D	D	E	F	F	F	F	F	F
19	11	8	F	F	E	E	E	E	E	E	D	D	C	C	C	C	D	D	D	E	E	E	F	F	F	E
19	11	9	E	E	E	E	E	E	F	F	E	E	E	E	E	D	D	E	E	F	F	F	G	F	E	F
19	11	10	F	G	G	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E
19	11	11	E	E	C	D	C	C	C	C	C	B	C	B	C	B	C	C	D	D	D	D	D	D	D	D

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JUL-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19
STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																					
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	11	12	E	E	F	F	F	F	F	E	D	D	B	B	B	B	B	D	D	D	D	D	D	D	D	D
19	11	13	D	D	D	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
19	11	14	E	D	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	F	G	G	G	G	G	F
19	11	15	F	F	F	F	F	G	F	F	E	E	E	E	E	E	D	D	E	F	F	F	F	F	F	F
19	11	16	F	F	F	E	E	E	E	E	E	D	D	D	D	D	D	D	E	E	E	E	E	E	E	E
19	11	17	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	G	G	F	G	G	G
19	11	18	G	G	G	F	E	E	E	E	D	D	D	E	D	D	D	E	E	G	G	E	E	E	E	E
19	11	19	E	E	F	F	F	E	E	E	D	E	E	D	D	D	D	E	E	F	F	F	F	F	F	F
19	11	20	E	E	E	E	E	E	E	E	E	E	E	D	D	D	D	E	E	E	E	E	E	E	E	E
19	11	21	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	11	22	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E
19	11	23	D	D	D	D	D	E	E	E	E	D	D	C	D	D	D	E	F	E	F	F	F	F	F	F
19	11	24	F	G	F	F	F	F	F	F	E	D	D	D	D	D	D	D	E	E	E	E	E	F	F	F
19	11	25	F	G	G	G	G	G	F	F	E	D	D	D	D	D	D	D	E	E	F	F	E	E	E	E
19	11	26	E	E	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E
19	11	27	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	F	F	F	F
19	11	28	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	11	29	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	11	30	D	D	D	D	D	D	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	12	1	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D
19	12	2	D	D	D	D	E	E	D	D	D	D	D	D	D	D	D	D	E	F	F	F	F	F	E	E
19	12	3	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E	E
19	12	4	E	F	F	E	F	F	F	E	F	D	D	D	D	D	D	D	E	G	G	G	G	G	G	G
19	12	5	G	G	G	G	G	G	G	G	G	F	F	E	F	E	D	D	E	F	G	F	E	D	D	E
19	12	6	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	G	F	F	E	
19	12	7	E	F	E	E	E	F	E	E	E	D	D	D	D	D	D	D	E	E	E	E	E	E	E	E
19	12	8	E	E	E	E	E	F	F	E	E	E	D	D	D	D	D	E	E	E	G	G	G	G	F	F
19	12	9	G	G	G	G	E	E	D	D	D	D	D	C	C	C	C	D	D	D	D	E	E	F	F	E
19	12	10	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	F	F	F	E	E
19	12	11	E	E	E	E	E	F	E	F	E	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
19	12	12	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	E	E	E	E	D	D	D	D
19	12	13	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	E	D	D	D	D
19	12	14	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	12	15	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	12	16	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D
19	12	17	D	D	D	D	D	D	D	E	E	E	D	A	A	D	D	D	E	E	E	E	F	F	F	F
19	12	18	E	F	F	F	G	F	G	G	E	D	D	D	D	D	E	D	E	E	E	E	F	F	G	G
19	12	19	G	G	G	G	G	G	G	G	G	F	D	E	F	E	E	E	E	E	E	E	E	F	F	F
19	12	20	E	E	E	F	E	E	E	E	E	E	E	D	D	D	D	D	E	F	F	F	F	G	G	G
19	12	21	G	G	G	G	G	F	G	F	F	E	D	D	D	D	D	E	F	F	F	F	E	E	E	E
19	12	22	E	E	F	E	E	E	E	E	E	E	E	D	D	E	E	E	F	F	F	F	F	F	F	F
19	12	23	F	F	F	F	F	F	F	E	E	E	D	D	D	D	E	E	E	F	F	E	E	F	F	F
19	12	24	F	F	E	E	F	F	F	E	E	E	D	D	D	D	E	E	E	F	F	F	F	F	F	F
19	12	25	F	F	F	F	F	E	E	E	E	E	D	D	D	D	E	E	F	F	G	G	E	E	D	D
19	12	26	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	F	F	F	F	F

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JUL-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19
STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																					
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	12	27	F	G	G	G	G	F	F	G	F	E	D	D	D	D	D	D	E	E	E	D	D	D	D	D
19	12	28	D	D	D	D	D	D	D	E	E	E	E	E	E	E	E	D	E	E	E	E	E	E	E	E
19	12	29	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	12	30	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	D	D	D	D	D	E	E	E
19	12	31	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	F	F	F	F	F	E	E

JFDs of 10-Meter Wind vs. Delta T

January-December 2019

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 12/31/19

*** JAN-DEC ***

STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	2	1	0	1	0	4
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	2	1	0	2	0	5

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
7.51-12.50	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
12.51-18.50	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	8
18.51-24.00	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
>24.00	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	4
TOTAL	3	0	1	1	0	0	0	0	13	0	0	0	1	0	0	0	19

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 12/31/19

*** JAN-DEC ***

STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	1	0	3	2	1	0	0	0	0	0	0	0	0	0	0	7
3.51- 7.50	1	2	1	1	8	5	2	1	0	0	0	0	0	0	0	0	21
7.51-12.50	14	2	0	0	0	1	0	1	12	2	1	1	0	0	0	2	36
12.51-18.50	3	1	0	0	0	0	2	0	36	5	0	0	0	0	0	9	56
18.51-24.00	6	1	0	0	0	0	0	0	4	0	0	0	0	0	0	4	15
>24.00	6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	9
TOTAL	30	7	1	4	10	7	4	2	53	7	1	1	0	0	0	17	144

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	15	22	22	28	35	19	13	22	10	11	8	14	6	6	8	9	248
3.51- 7.50	147	173	98	109	138	202	134	105	80	47	55	37	32	37	59	78	1531
7.51-12.50	305	169	55	49	93	239	255	125	149	90	92	49	44	96	98	188	2096
12.51-18.50	151	37	6	9	22	27	77	22	114	102	28	30	33	67	153	195	1073
18.51-24.00	58	6	0	0	4	2	3	1	18	20	5	6	4	14	58	48	247
>24.00	16	0	0	0	1	0	0	1	9	5	0	0	0	0	11	3	46
TOTAL	692	407	181	195	293	489	482	276	380	275	188	136	119	220	387	521	5241

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 12/31/19

*** JAN-DEC ***

STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	8
1.01- 3.50	22	26	19	12	19	17	15	19	41	44	24	16	17	27	25	22	365
3.51- 7.50	40	32	8	21	22	43	56	118	203	81	47	30	32	45	52	51	881
7.51-12.50	25	8	1	2	8	21	41	108	217	119	43	16	10	34	74	46	773
12.51-18.50	6	1	0	1	1	2	12	18	51	24	6	1	2	3	7	13	148
18.51-24.00	2	0	0	0	1	0	6	2	4	1	1	0	1	0	3	3	24
>24.00	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
TOTAL	96	67	28	36	51	83	130	265	517	269	121	63	62	109	161	135	2201

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	32
1.01- 3.50	20	3	7	1	1	3	5	25	58	54	29	29	35	38	31	37	376
3.51- 7.50	11	4	0	0	0	3	1	24	75	28	18	24	23	32	28	14	285
7.51-12.50	0	0	0	0	0	0	0	1	36	9	4	8	5	12	17	1	93
12.51-18.50	0	0	0	0	0	0	0	0	0	1	1	0	0	2	3	0	7
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	31	7	7	1	1	6	6	50	169	92	52	61	63	84	79	52	793

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 12/31/19

*** JAN-DEC ***

STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	29
1.01- 3.50	16	4	0	1	0	0	2	14	45	29	23	18	20	29	23	24	248
3.51- 7.50	2	0	0	0	0	0	0	2	12	1	7	4	2	18	12	4	64
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	2	1	3	3	0	9
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	18	4	0	1	0	0	2	16	57	30	30	24	23	50	38	30	352

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 10.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	69
1.01- 3.50	73	56	49	46	57	40	35	80	154	138	84	77	78	100	87	92	1246
3.51- 7.50	201	211	107	131	168	253	193	250	370	157	127	97	91	132	152	147	2787
7.51-12.50	344	179	56	51	101	261	296	235	416	220	140	76	60	145	192	237	3009
12.51-18.50	160	39	6	10	23	29	91	40	209	132	35	31	35	72	164	219	1295
18.51-24.00	67	7	0	0	5	2	9	3	27	21	6	6	5	14	61	55	288
>24.00	25	0	0	0	1	0	0	1	13	5	0	0	0	0	11	5	61
TOTAL	870	492	218	238	355	585	624	609	1189	673	392	287	269	463	667	755	8755

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:10M WIND VS 10M DELTA T - JAN-DEC 2019
SITE IDENTIFIER:NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 12/31/19

*** JAN-DEC ***

STABILITY BASED ON: DELTA T BETWEEN 60.0 AND 10.0 METERS
WIND MEASURED AT: 10.0 METERS
WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 8760

TOTAL NUMBER OF VALID OBSERVATIONS: 8755

TOTAL NUMBER OF MISSING OBSERVATIONS: 5

PERCENT DATA RECOVERY FOR THIS PERIOD: 99.9 %

MEAN WIND SPEED FOR THIS PERIOD: 8.6 MPH

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 0

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
.06	.22	1.64	59.86	25.14	9.06	4.02

DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	0	0	0	0	0	0	0	0	0	2	1	0	2	0	0
B	3	0	1	1	0	0	0	0	13	0	0	0	1	0	0	0	0
C	30	7	1	4	10	7	4	2	53	7	1	1	0	0	0	17	0
D	692	407	181	195	293	489	482	276	380	275	188	136	119	220	387	521	0
E	96	67	28	36	51	83	130	265	517	269	121	63	62	109	161	135	8
F	31	7	7	1	1	6	6	50	169	92	52	61	63	84	79	52	32
G	18	4	0	1	0	0	2	16	57	30	30	24	23	50	38	30	29
TOTAL	870	492	218	238	355	585	624	609	1189	673	392	287	269	463	667	755	69

JFDs of 100-Meter Wind vs. Delta T

January-March 2019

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-MAR 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 3/31/19

*** JAN-MAR 2019 ***

STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-MAR 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 3/31/19

*** JAN-MAR 2019 ***

STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	5
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	3	7

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	3	2	3	8	2	0	2	3	1	1	1	0	0	3	1	30
3.51- 7.50	21	16	10	14	5	17	13	7	8	7	12	9	5	12	8	9	173
7.51-12.50	59	42	19	32	21	23	29	10	2	2	32	19	6	11	20	30	357
12.51-18.50	69	44	17	10	25	33	38	4	1	2	22	12	10	18	62	74	441
18.51-24.00	27	17	1	1	3	12	10	5	1	0	2	4	1	9	55	61	209
>24.00	32	3	1	0	1	1	1	1	4	8	1	1	3	13	49	17	136
TOTAL	208	125	50	60	63	88	91	29	19	20	70	46	25	63	197	192	1346

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-MAR 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 3/31/19

*** JAN-MAR 2019 ***

STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	4	1	1	2	4	2	0	0	0	0	0	0	1	0	0	3	18
3.51- 7.50	12	6	17	15	5	3	7	6	3	3	3	2	1	0	1	2	86
7.51-12.50	9	11	6	8	7	11	37	15	8	5	6	3	4	3	7	14	154
12.51-18.50	4	13	6	3	9	19	18	21	32	20	3	6	7	10	14	21	206
18.51-24.00	0	1	0	0	0	9	5	7	24	8	1	6	4	13	23	7	108
>24.00	1	0	0	0	0	0	11	4	3	1	0	1	2	2	4	0	29
TOTAL	30	32	30	28	25	44	78	53	70	37	13	18	19	28	49	47	601

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	1
1.01- 3.50	0	0	1	2	1	3	1	0	0	0	0	0	0	0	0	0	8
3.51- 7.50	2	3	3	1	4	1	0	2	0	0	1	1	0	0	1	1	20
7.51-12.50	2	0	1	1	0	4	1	3	2	2	8	10	3	2	1	5	45
12.51-18.50	0	0	0	0	0	2	3	4	2	3	6	4	9	5	2	1	41
18.51-24.00	0	0	0	0	0	0	0	0	3	2	0	3	6	2	1	1	18
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
TOTAL	4	3	5	4	5	10	5	9	7	7	15	18	20	9	5	8	135

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-MAR 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 3/31/19

*** JAN-MAR 2019 ***

STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	1	0	1	0	0	1	0	0	0	1	0	1	0	1	1	0	7
3.51- 7.50	0	0	0	0	1	4	0	0	0	0	1	4	0	1	2	3	16
7.51-12.50	2	0	0	0	1	1	0	0	0	0	4	6	6	4	3	1	28
12.51-18.50	0	0	0	0	0	0	0	0	5	2	1	2	2	1	2	0	15
18.51-24.00	0	0	0	0	0	0	0	0	1	0	2	0	0	1	1	0	5
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	3	0	1	0	2	6	0	0	6	3	8	13	8	8	9	4	71

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	1
1.01- 3.50	5	4	5	7	13	8	1	2	3	2	1	2	1	1	4	4	63
3.51- 7.50	35	26	30	30	15	25	20	15	11	10	17	16	6	14	13	17	300
7.51-12.50	72	53	26	41	29	39	67	28	12	9	50	38	19	20	31	50	584
12.51-18.50	73	57	23	13	34	54	59	29	40	27	32	24	28	34	80	96	703
18.51-24.00	28	18	1	1	3	21	15	12	29	10	5	13	11	25	80	70	342
>24.00	33	3	1	0	1	1	12	5	7	9	1	2	7	15	53	17	167
TOTAL	246	161	86	92	95	148	174	91	102	67	106	95	72	109	261	254	2160

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-MAR 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 3/31/19

*** JAN-MAR 2019 ***

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 2160

TOTAL NUMBER OF VALID OBSERVATIONS: 2160

TOTAL NUMBER OF MISSING OBSERVATIONS: 0

PERCENT DATA RECOVERY FOR THIS PERIOD: 100.0 %

MEAN WIND SPEED FOR THIS PERIOD: 14.2 MPH

NUMBER OF OBSERVATIONS WITH BACKUP WIND SPEED: 1

NUMBER OF OBSERVATIONS WITH BACKUP WIND DIRECTION: 1

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 1

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
.00	.00	.32	62.31	27.82	6.25	3.29

DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	3	0
D	208	125	50	60	63	88	91	29	19	20	70	46	25	63	197	192	0
E	30	32	30	28	25	44	78	53	70	37	13	18	19	28	49	47	0
F	4	3	5	4	5	10	5	9	7	7	15	18	20	9	5	8	1
G	3	0	1	0	2	6	0	0	6	3	8	13	8	8	9	4	0
TOTAL	246	161	86	92	95	148	174	91	102	67	106	95	72	109	261	254	1

JFDs of 100-Meter Wind vs. Delta T

April-June 2019

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T APR-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 4/ 1/19 - 6/30/19

*** APR-JUN 2019 ***

STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T APR-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 4/ 1/19 - 6/30/19

*** APR-JUN 2019 ***

STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	5	3	1	3	2	5	1	3	2	5	0	0	0	0	0	3	33
3.51- 7.50	21	17	12	11	19	31	30	13	7	6	5	2	5	1	8	7	195
7.51-12.50	56	34	18	21	15	24	69	30	23	19	18	2	11	15	14	29	398
12.51-18.50	58	23	23	12	22	38	51	21	46	50	23	13	13	15	21	55	484
18.51-24.00	20	9	2	11	21	13	18	4	23	34	17	4	4	8	15	21	224
>24.00	19	3	1	3	13	6	0	2	18	7	5	7	10	5	3	10	112
TOTAL	179	89	57	61	92	117	169	73	119	121	68	28	43	44	61	125	1446

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T APR-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 4/ 1/19 - 6/30/19

*** APR-JUN 2019 ***

STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	1	1	2	1	2	1	1	0	0	2	3	2	0	2	0	18
3.51- 7.50	4	1	2	4	4	5	10	13	11	11	4	1	2	0	0	3	75
7.51-12.50	8	3	5	2	2	14	19	26	27	14	4	5	2	4	3	6	144
12.51-18.50	8	2	2	1	3	8	12	39	64	32	13	3	11	9	8	18	233
18.51-24.00	3	0	0	1	6	1	8	9	21	12	5	0	0	0	1	13	80
>24.00	0	0	0	0	2	1	0	1	10	3	2	1	0	0	4	0	24
TOTAL	23	7	10	10	18	31	50	89	133	72	30	13	17	13	18	40	574

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	1	0	0	2	1	0	1	1	0	1	0	1	0	1	0	1	10
3.51- 7.50	1	0	2	2	5	0	1	4	0	1	1	0	0	4	0	5	26
7.51-12.50	2	1	0	1	2	3	4	3	1	10	2	0	1	0	4	5	39
12.51-18.50	0	0	0	0	0	0	0	1	1	9	8	2	2	7	0	8	38
18.51-24.00	0	0	0	0	0	0	0	0	0	0	2	1	1	0	2	8	14
>24.00	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2
TOTAL	4	1	2	5	8	3	6	9	2	22	13	4	5	12	6	27	129

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T APR-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 4/ 1/19 - 6/30/19

*** APR-JUN 2019 ***

STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	1	0	0	1	1	0	0	1	0	1	0	1	6
3.51- 7.50	2	0	1	2	1	1	0	0	2	3	1	0	0	0	0	0	13
7.51-12.50	0	1	1	0	0	0	0	0	2	3	0	0	0	1	1	2	11
12.51-18.50	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
TOTAL	2	1	2	2	2	1	0	1	5	6	2	2	0	2	3	4	35

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	6	4	2	7	5	7	3	6	3	6	2	5	2	2	2	5	67
3.51- 7.50	28	18	17	19	29	37	41	30	20	21	11	3	7	5	8	15	309
7.51-12.50	66	39	24	24	19	41	92	59	53	46	24	7	14	20	22	42	592
12.51-18.50	66	25	25	13	25	46	63	61	111	91	45	18	26	31	30	81	757
18.51-24.00	23	9	2	12	27	14	26	13	44	46	24	6	5	8	18	42	319
>24.00	19	3	1	3	15	7	0	3	28	11	7	8	11	5	8	11	140
TOTAL	208	98	71	78	120	152	225	172	259	221	113	47	65	71	88	196	2184

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T APR-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 4/ 1/19 - 6/30/19

*** APR-JUN 2019 ***

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 2184

TOTAL NUMBER OF VALID OBSERVATIONS: 2184

TOTAL NUMBER OF MISSING OBSERVATIONS: 0

PERCENT DATA RECOVERY FOR THIS PERIOD: 100.0 %

MEAN WIND SPEED FOR THIS PERIOD: 13.8 MPH

NUMBER OF OBSERVATIONS WITH BACKUP WIND SPEED: 1

NUMBER OF OBSERVATIONS WITH BACKUP WIND DIRECTION: 1

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 1

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
.00	.00	.00	66.21	26.28	5.91	1.60

DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D	179	89	57	61	92	117	169	73	119	121	68	28	43	44	61	125	0
E	23	7	10	10	18	31	50	89	133	72	30	13	17	13	18	40	0
F	4	1	2	5	8	3	6	9	2	22	13	4	5	12	6	27	0
G	2	1	2	2	2	1	0	1	5	6	2	2	0	2	3	4	0
TOTAL	208	98	71	78	120	152	225	172	259	221	113	47	65	71	88	196	0

JFDs of 100-Meter Wind vs. Delta T

January-June 2019

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 6/30/19

*** JAN-JUN 2019 ***

STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 6/30/19

*** JAN-JUN 2019 ***

STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	5
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	3	7

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	5	6	3	6	10	7	1	5	5	6	1	1	0	0	3	4	63
3.51- 7.50	42	33	22	25	24	48	43	20	15	13	17	11	10	13	16	16	368
7.51-12.50	115	76	37	53	36	47	98	40	25	21	50	21	17	26	34	59	755
12.51-18.50	127	67	40	22	47	71	89	25	47	52	45	25	23	33	83	129	925
18.51-24.00	47	26	3	12	24	25	28	9	24	34	19	8	5	17	70	82	433
>24.00	51	6	2	3	14	7	1	3	22	15	6	8	13	18	52	27	248
TOTAL	387	214	107	121	155	205	260	102	138	141	138	74	68	107	258	317	2792

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 6/30/19

*** JAN-JUN 2019 ***

STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	4	2	2	4	5	4	1	1	0	0	2	3	3	0	2	3	36
3.51- 7.50	16	7	19	19	9	8	17	19	14	14	7	3	3	0	1	5	161
7.51-12.50	17	14	11	10	9	25	56	41	35	19	10	8	6	7	10	20	298
12.51-18.50	12	15	8	4	12	27	30	60	96	52	16	9	18	19	22	39	439
18.51-24.00	3	1	0	1	6	10	13	16	45	20	6	6	4	13	24	20	188
>24.00	1	0	0	0	2	1	11	5	13	4	2	2	2	2	8	0	53
TOTAL	53	39	40	38	43	75	128	142	203	109	43	31	36	41	67	87	1175

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	1
1.01- 3.50	1	0	1	4	2	3	2	1	0	1	0	1	0	1	0	1	18
3.51- 7.50	3	3	5	3	9	1	1	6	0	1	2	1	0	4	1	6	46
7.51-12.50	4	1	1	2	2	7	5	6	3	12	10	10	4	2	5	10	84
12.51-18.50	0	0	0	0	0	2	3	5	3	12	14	6	11	12	2	9	79
18.51-24.00	0	0	0	0	0	0	0	0	3	2	2	4	7	2	3	9	32
>24.00	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0	0	4
TOTAL	8	4	7	9	13	13	11	18	9	29	28	22	25	21	11	35	264

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 6/30/19

*** JAN-JUN 2019 ***

STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	1	0	1	0	1	1	0	1	1	1	0	2	0	2	1	1	13
3.51- 7.50	2	0	1	2	2	5	0	0	2	3	2	4	0	1	2	3	29
7.51-12.50	2	1	1	0	1	1	0	0	2	3	4	6	6	5	4	3	39
12.51-18.50	0	0	0	0	0	0	0	0	5	2	2	2	2	1	3	0	17
18.51-24.00	0	0	0	0	0	0	0	0	1	0	2	1	0	1	1	0	6
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
TOTAL	5	1	3	2	4	7	0	1	11	9	10	15	8	10	12	8	106

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	1
1.01- 3.50	11	8	7	14	18	15	4	8	6	8	3	7	3	3	6	9	130
3.51- 7.50	63	44	47	49	44	62	61	45	31	31	28	19	13	19	21	32	609
7.51-12.50	138	92	50	65	48	80	159	87	65	55	74	45	33	40	53	92	1176
12.51-18.50	139	82	48	26	59	100	122	90	151	118	77	42	54	65	110	177	1460
18.51-24.00	51	27	3	13	30	35	41	25	73	56	29	19	16	33	98	112	661
>24.00	52	6	2	3	16	8	12	8	35	20	8	10	18	20	61	28	307
TOTAL	454	259	157	170	215	300	399	263	361	288	219	142	137	180	349	450	4344

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 6/30/19

*** JAN-JUN 2019 ***

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 4344

TOTAL NUMBER OF VALID OBSERVATIONS: 4344

TOTAL NUMBER OF MISSING OBSERVATIONS: 0

PERCENT DATA RECOVERY FOR THIS PERIOD: 100.0 %

MEAN WIND SPEED FOR THIS PERIOD: 14.0 MPH

NUMBER OF OBSERVATIONS WITH BACKUP WIND SPEED: 2

NUMBER OF OBSERVATIONS WITH BACKUP WIND DIRECTION: 2

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 2

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
.00	.00	.16	64.27	27.05	6.08	2.44

DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	3	0
D	387	214	107	121	155	205	260	102	138	141	138	74	68	107	258	317	0
E	53	39	40	38	43	75	128	142	203	109	43	31	36	41	67	87	0
F	8	4	7	9	13	13	11	18	9	29	28	22	25	21	11	35	1
G	5	1	3	2	4	7	0	1	11	9	10	15	8	10	12	8	0
TOTAL	454	259	157	170	215	300	399	263	361	288	219	142	137	180	349	450	1

Stability Classes by Hour of Day

100-Meter Wind vs. Delta T

January-June 2019

B203

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 6/30/19
STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																					
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	1	1	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	2	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F	F	F	F
19	1	3	E	E	E	F	E	F	G	F	F	E	D	D	D	D	D	D	E	E	F	F	G	G	G	G
19	1	4	F	G	G	G	G	F	F	G	F	E	D	D	D	D	D	D	D	E	F	G	G	G	G	F
19	1	5	F	F	G	G	G	G	G	G	G	F	E	E	E	D	D	E	E	F	G	G	G	G	G	G
19	1	6	G	G	G	F	F	E	E	F	E	E	E	D	D	D	D	D	E	E	E	E	E	E	E	E
19	1	7	E	E	E	E	F	E	F	E	E	E	D	D	D	D	D	D	E	E	E	F	E	E	E	E
19	1	8	E	E	E	E	E	D	E	E	E	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
19	1	9	E	E	D	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E
19	1	10	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
19	1	11	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	D	D
19	1	12	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	13	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F	F	F	E	E
19	1	14	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	15	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	16	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	17	D	D	D	D	D	D	D	D	D	D	D	D	D	D	C	C	C	C	C	D	D	D	D	D
19	1	18	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	19	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
19	1	20	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	21	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D	D
19	1	22	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	23	D	D	D	D	D	E	E	F	F	F	E	D	D	D	D	D	D	E	F	F	F	F	F	G
19	1	24	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	F	F	G
19	1	25	G	G	G	G	G	F	E	F	E	E	D	D	D	D	D	D	D	E	E	E	E	E	E	E
19	1	26	E	D	D	D	D	D	D	E	E	E	E	D	D	D	D	D	E	E	E	E	E	D	D	D
19	1	27	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
19	1	28	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E
19	1	29	F	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	E	D	E	E	D	D
19	1	30	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	1	31	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
19	2	1	E	E	E	E	F	F	E	E	E	E	E	E	E	E	D	E	E	E	F	F	G	G	E	E
19	2	2	E	E	F	F	E	E	E	E	E	E	E	E	E	E	E	E	E	F	F	E	E	F	F	E
19	2	3	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	F	F
19	2	4	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	5	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	6	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	7	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	8	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
19	2	9	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	10	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D	D	D
19	2	11	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	12	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F	F	F
19	2	13	G	F	F	F	F	F	F	E	E	E	D	D	D	D	D	E	E	E	E	F	F	G	G	G
19	2	14	G	F	E	E	E	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D

B204

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 6/30/19
STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																					
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	2	15	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	16	D	E	E	E	E	E	F	F	F	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	17	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E
19	2	18	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
19	2	19	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	20	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	F	F	F
19	2	21	F	G	G	G	G	G	G	G	G	G	F	F	E	D	D	D	D	E	E	E	E	E	E	E
19	2	22	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	23	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	24	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	2	25	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	26	D	D	D	D	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	2	27	D	D	D	D	D	D	D	D	D	D	C	C	D	D	D	D	D	D	D	D	E	E	E	E
19	2	28	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
19	3	1	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	3	2	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	3	3	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	3	4	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
19	3	5	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	F	F	F	F	F
19	3	6	F	F	F	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	E	E	E	E	E	E
19	3	7	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	3	8	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D	D	D	E
19	3	9	D	D	D	D	E	E	D	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D
19	3	10	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
19	3	11	E	F	F	F	F	F	F	F	E	E	D	D	D	D	D	D	D	D	E	E	F	F	F	F
19	3	12	F	E	E	F	E	F	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
19	3	13	E	E	E	E	E	E	E	E	E	E	E	E	E	D	D	D	D	E	E	E	E	E	E	E
19	3	14	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	3	15	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	F	F	G
19	3	16	G	G	G	G	G	G	F	F	E	D	D	D	D	E	D	D	D	D	E	E	E	E	E	D
19	3	17	D	D	E	E	E	E	E	E	D	D	D	D	D	D	D	D	E	E	E	E	F	F	E	
19	3	18	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	F	F	E	E
19	3	19	E	E	E	E	E	E	E	D	D	D	D	D	D	E	E	E	E	E	D	D	D	E	D	D
19	3	20	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	E	E	E
19	3	21	E	D	E	E	E	E	E	D	D	D	E	D	D	E	D	D	D	D	E	F	F	G	G	G
19	3	22	G	G	G	G	G	G	G	F	E	E	D	D	E	E	D	D	D	E	F	F	G	F	E	E
19	3	23	E	E	E	E	E	E	D	D	D	D	D	E	E	E	E	E	E	E	E	E	E	E	D	D
19	3	24	D	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	3	25	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	D
19	3	26	D	D	D	D	D	D	D	D	D	D	E	E	D	E	E	E	E	E	E	E	E	E	E	E
19	3	27	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
19	3	28	E	E	E	E	E	E	D	D	D	D	D	D	E	E	D	D	D	D	E	E	E	E	D	D
19	3	29	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	3	30	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	3	31	D	D	D	D	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 6/30/19
STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																					
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	4	1	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
19	4	2	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	E	E	E
19	4	3	E	E	E	E	E	E	E	D	D	D	D	D	D	E	D	E	E	E	D	D	D	D	D	D
19	4	4	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	D	D	E	E	E	E	E	E	E
19	4	5	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E	E	E	E	E	E
19	4	6	E	E	E	D	E	E	E	D	D	E	D	D	D	D	D	D	D	E	E	E	E	D	F	E
19	4	7	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	F	F	G
19	4	8	G	G	G	G	G	G	F	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
19	4	9	E	E	E	E	F	F	F	D	D	D	D	D	D	D	D	D	D	D	E	E	E	D	D	D
19	4	10	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D	D	D	D	D	D	D
19	4	11	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	4	12	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	4	13	E	E	E	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	4	14	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	D
19	4	15	D	D	D	D	D	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	F	E
19	4	16	E	F	F	F	F	F	F	E	E	E	D	D	D	D	D	D	D	E	E	E	E	E	E	E
19	4	17	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	4	18	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	4	19	D	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	G	G	G
19	4	20	G	G	G	G	G	F	F	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
19	4	21	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	4	22	D	E	E	F	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	4	23	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E
19	4	24	E	E	E	E	E	F	F	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	4	25	E	E	E	E	E	F	F	D	D	D	D	D	D	D	D	D	D	D	D	E	F	E	E	E
19	4	26	E	E	E	D	D	E	F	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D	D	D
19	4	27	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	4	28	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	4	29	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	4	30	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	5	1	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	5	2	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	E	E	E
19	5	3	E	E	D	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F
19	5	4	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	5	5	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	D	E	F	E	E	E
19	5	6	E	E	E	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	5	7	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	5	8	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	5	9	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E
19	5	10	E	F	F	F	F	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E
19	5	11	E	D	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	5	12	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D
19	5	13	D	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	E	E	E
19	5	14	E	E	E	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	G	G	G	G
19	5	15	G	G	G	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-JUN 2019
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STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																					
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	5	16	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	5	17	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	D	E	E
19	5	18	E	E	E	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	5	19	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E
19	5	20	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	5	21	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E
19	5	22	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	F	F
19	5	23	F	G	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E
19	5	24	E	D	D	D	E	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	5	25	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	E	E	E	E	E	E	F	E	E
19	5	26	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	D
19	5	27	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	D	D
19	5	28	D	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	5	29	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E
19	5	30	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	E	E	E
19	5	31	F	F	F	G	F	F	F	E	E	D	D	D	D	D	D	D	D	D	E	F	F	F	F	F
19	6	1	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	E	E
19	6	2	E	E	E	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	E	E
19	6	3	E	E	E	E	D	D	D	D	D	E	E	D	D	D	D	D	D	D	D	D	D	E	E	D
19	6	4	D	D	D	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	F	F
19	6	5	F	F	F	E	E	F	E	D	D	D	D	E	D	D	D	D	D	D	E	F	F	E	E	F
19	6	6	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	G	F
19	6	7	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D	D	D
19	6	8	E	E	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	E	E	E
19	6	9	E	F	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F
19	6	10	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	G	G	F
19	6	11	F	F	F	F	F	F	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E	D	E
19	6	12	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F	F
19	6	13	G	F	F	G	G	F	F	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	6	14	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	D
19	6	15	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	D	D	E	F	F	F	F
19	6	16	G	G	F	E	F	F	E	D	D	D	D	D	D	D	D	D	D	D	E	E	F	E	E	D
19	6	17	D	D	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D	D	D
19	6	18	D	D	D	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	6	19	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	F	F
19	6	20	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	6	21	D	D	D	D	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D
19	6	22	D	D	D	D	D	D	E	D	E	D	D	D	D	D	D	D	D	D	D	D	E	E	D	D
19	6	23	D	D	D	D	D	D	D	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	6	24	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	E	E	E
19	6	25	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	F	F	E	E	E
19	6	26	E	E	F	F	G	F	E	E	E	G	G	F	F	E	D	D	D	D	E	E	E	E	E	E
19	6	27	E	E	E	E	E	E	D	D	D	D	D	D	D	E	D	D	D	D	D	E	E	E	E	E
19	6	28	E	E	E	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	6	29	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-JUN 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 6/30/19
STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																						
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	6	30	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E

B208

JFDs of 100-Meter Wind vs. Delta T

July-September 2019

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JUL-SEP 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 9/30/19

*** JUL-SEP 2019 ***

STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JUL-SEP 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 9/30/19

*** JUL-SEP 2019 ***

STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	2	3	4	2	4	1	3	2	2	1	0	1	0	0	2	2	29
3.51- 7.50	18	16	12	25	32	31	25	26	30	8	8	3	5	1	4	7	251
7.51-12.50	28	16	9	28	33	77	83	57	46	28	16	16	6	3	7	31	484
12.51-18.50	52	20	3	4	15	70	66	39	92	43	9	2	7	9	9	16	456
18.51-24.00	15	8	1	2	2	4	7	4	42	23	2	0	0	0	2	0	112
>24.00	2	0	0	0	0	1	0	0	17	8	0	1	0	0	0	0	29
TOTAL	117	63	29	61	86	184	184	128	229	111	35	23	18	13	24	56	1361

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JUL-SEP 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 9/30/19

*** JUL-SEP 2019 ***

STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	4	1	0	3	6	1	1	0	1	0	2	2	0	0	21
3.51- 7.50	4	11	10	7	6	7	16	8	4	5	2	1	2	0	0	7	90
7.51-12.50	14	13	1	5	6	10	11	23	33	19	5	9	1	1	3	14	168
12.51-18.50	10	3	2	0	5	1	6	32	85	45	20	5	9	6	5	4	238
18.51-24.00	1	0	0	0	1	0	1	15	53	37	1	0	0	6	0	0	115
>24.00	0	0	0	0	1	0	0	2	15	3	2	0	0	2	0	0	25
TOTAL	29	27	17	13	19	21	40	81	191	109	31	15	14	17	8	25	657

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	2	1	0	2	3	1	1	0	1	2	0	0	0	0	0	1	14
3.51- 7.50	2	2	8	1	0	1	8	9	3	5	1	2	0	0	5	3	50
7.51-12.50	6	1	0	0	0	3	2	4	14	9	3	5	1	4	7	4	63
12.51-18.50	0	0	0	0	0	0	1	3	2	7	2	2	1	2	3	6	29
18.51-24.00	0	0	0	0	0	0	0	0	0	3	0	1	0	5	5	4	18
>24.00	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
TOTAL	10	4	8	3	3	5	12	16	20	27	7	10	2	11	20	18	176

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JUL-SEP 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 9/30/19

*** JUL-SEP 2019 ***

STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
3.51- 7.50	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2
7.51-12.50	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3	0	5
12.51-18.50	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	1	0	0	0	0	1	0	1	2	0	0	0	2	3	1	11

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	4	5	8	5	7	5	11	3	4	3	1	1	2	2	2	3	66
3.51- 7.50	24	29	30	33	38	39	49	43	38	18	11	6	7	2	9	17	393
7.51-12.50	48	30	10	33	39	90	96	84	93	57	24	30	8	9	20	49	720
12.51-18.50	62	23	5	4	20	71	73	74	179	96	31	9	17	17	17	26	724
18.51-24.00	16	8	1	2	3	4	8	19	96	63	3	1	0	11	7	5	247
>24.00	2	0	0	0	1	1	0	2	32	12	3	1	0	2	0	0	56
TOTAL	156	95	54	77	108	210	237	225	442	249	73	48	34	43	55	100	2206

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JUL-SEP 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 9/30/19

*** JUL-SEP 2019 ***

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 2208

TOTAL NUMBER OF VALID OBSERVATIONS: 2206

TOTAL NUMBER OF MISSING OBSERVATIONS: 2

PERCENT DATA RECOVERY FOR THIS PERIOD: 99.9 %

MEAN WIND SPEED FOR THIS PERIOD: 12.4 MPH

NUMBER OF OBSERVATIONS WITH BACKUP WIND SPEED: 0

NUMBER OF OBSERVATIONS WITH BACKUP WIND DIRECTION: 0

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 0

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
.00	.00	.05	61.70	29.78	7.98	.50

DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
D	117	63	29	61	86	184	184	128	229	111	35	23	18	13	24	56	0
E	29	27	17	13	19	21	40	81	191	109	31	15	14	17	8	25	0
F	10	4	8	3	3	5	12	16	20	27	7	10	2	11	20	18	0
G	0	1	0	0	0	0	1	0	1	2	0	0	0	2	3	1	0
TOTAL	156	95	54	77	108	210	237	225	442	249	73	48	34	43	55	100	0

JFDs of 100-Meter Wind vs. Delta T

October-December 2019

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T OCT-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 10/ 1/19 - 12/31/19

*** OCT-DEC 2019 ***

STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T OCT-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 10/ 1/19 - 12/31/19

*** OCT-DEC 2019 ***

STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	1	3	5	4	3	3	1	0	1	1	3	0	2	0	4	31
3.51- 7.50	20	16	6	11	8	16	8	6	7	6	6	9	3	11	8	21	162
7.51-12.50	45	25	7	4	6	24	20	5	5	12	6	7	5	12	36	63	282
12.51-18.50	34	2	8	5	2	18	23	13	29	12	5	18	13	24	41	69	316
18.51-24.00	25	3	0	0	0	2	11	5	29	5	3	9	11	32	41	46	222
>24.00	33	4	0	0	0	0	3	2	11	2	1	7	7	24	30	6	130
TOTAL	157	51	24	25	20	63	68	32	81	38	22	53	39	105	156	209	1143

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T OCT-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 10/ 1/19 - 12/31/19

*** OCT-DEC 2019 ***

STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	2
1.01- 3.50	3	0	1	1	3	0	3	2	2	2	0	0	0	0	1	0	18
3.51- 7.50	3	5	2	1	2	1	7	9	9	4	2	4	7	8	4	5	73
7.51-12.50	3	1	2	6	2	2	9	21	22	11	7	10	8	6	8	17	135
12.51-18.50	7	4	4	1	4	3	18	43	75	37	15	15	12	6	13	24	281
18.51-24.00	0	0	0	0	1	0	10	15	28	11	9	9	1	10	17	2	113
>24.00	0	0	0	0	0	1	2	0	7	4	1	0	0	3	0	0	18
TOTAL	16	10	9	9	12	7	49	90	143	69	34	38	28	33	43	48	640

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	2
1.01- 3.50	3	0	1	0	0	2	0	0	1	1	2	0	0	0	1	0	11
3.51- 7.50	2	1	3	1	1	0	3	7	6	5	3	2	2	2	6	8	52
7.51-12.50	3	0	0	1	0	0	2	24	15	14	7	6	7	3	5	7	94
12.51-18.50	1	0	0	0	0	0	6	19	19	21	6	13	12	6	7	4	114
18.51-24.00	0	0	0	0	0	0	1	0	5	4	6	3	7	9	9	1	45
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	3	7	0	0	10
TOTAL	9	1	4	2	1	2	12	50	46	45	24	24	31	27	28	20	328

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T OCT-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 10/ 1/19 - 12/31/19

*** OCT-DEC 2019 ***

STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	3
3.51- 7.50	3	0	2	0	0	0	0	4	2	3	4	2	1	2	1	1	25
7.51-12.50	0	1	0	0	0	0	0	3	6	7	10	3	5	4	3	2	44
12.51-18.50	0	0	0	0	0	0	0	0	1	4	7	0	1	1	2	0	16
18.51-24.00	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2
>24.00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
TOTAL	3	1	2	0	0	1	0	7	9	14	24	6	7	7	7	4	92

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	4
1.01- 3.50	6	1	5	6	7	6	6	3	3	4	3	3	0	2	3	5	63
3.51- 7.50	28	22	13	13	11	17	18	26	24	18	15	17	13	23	19	35	312
7.51-12.50	51	27	9	11	8	26	31	53	48	44	30	28	25	25	52	89	557
12.51-18.50	42	6	12	6	6	21	47	75	124	74	33	46	38	37	63	97	727
18.51-24.00	25	3	0	0	1	2	22	20	62	20	19	22	19	51	67	49	382
>24.00	33	4	0	0	0	1	5	2	18	6	4	7	10	34	30	6	160
TOTAL	185	63	39	36	33	73	129	179	279	166	104	123	105	172	234	281	2205

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T OCT-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 10/ 1/19 - 12/31/19

*** OCT-DEC 2019 ***

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 2208

TOTAL NUMBER OF VALID OBSERVATIONS: 2205

TOTAL NUMBER OF MISSING OBSERVATIONS: 3

PERCENT DATA RECOVERY FOR THIS PERIOD: 99.9 %

MEAN WIND SPEED FOR THIS PERIOD: 14.2 MPH

NUMBER OF OBSERVATIONS WITH BACKUP WIND SPEED: 105

NUMBER OF OBSERVATIONS WITH BACKUP WIND DIRECTION: 105

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 105

B220

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
.05	.00	.05	51.84	29.02	14.88	4.17

DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
D	157	51	24	25	20	63	68	32	81	38	22	53	39	105	156	209	0
E	16	10	9	9	12	7	49	90	143	69	34	38	28	33	43	48	2
F	9	1	4	2	1	2	12	50	46	45	24	24	31	27	28	20	2
G	3	1	2	0	0	1	0	7	9	14	24	6	7	7	7	4	0
TOTAL	185	63	39	36	33	73	129	179	279	166	104	123	105	172	234	281	4

JFDs of 100-Meter Wind vs. Delta T

July-December 2019

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JUL-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19

*** JUL-DEC 2019 ***

STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JUL-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19

*** JUL-DEC 2019 ***

STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	2	4	7	7	8	4	6	3	2	2	1	4	0	2	2	6	60
3.51- 7.50	38	32	18	36	40	47	33	32	37	14	14	12	8	12	12	28	413
7.51-12.50	73	41	16	32	39	101	103	62	51	40	22	23	11	15	43	94	766
12.51-18.50	86	22	11	9	17	88	89	52	121	55	14	20	20	33	50	85	772
18.51-24.00	40	11	1	2	2	6	18	9	71	28	5	9	11	32	43	46	334
>24.00	35	4	0	0	0	1	3	2	28	10	1	8	7	24	30	6	159
TOTAL	274	114	53	86	106	247	252	160	310	149	57	76	57	118	180	265	2504

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JUL-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19

*** JUL-DEC 2019 ***

STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	2
1.01- 3.50	3	0	5	2	3	3	9	3	3	2	1	0	2	2	1	0	39
3.51- 7.50	7	16	12	8	8	8	23	17	13	9	4	5	9	8	4	12	163
7.51-12.50	17	14	3	11	8	12	20	44	55	30	12	19	9	7	11	31	303
12.51-18.50	17	7	6	1	9	4	24	75	160	82	35	20	21	12	18	28	519
18.51-24.00	1	0	0	0	2	0	11	30	81	48	10	9	1	16	17	2	228
>24.00	0	0	0	0	1	1	2	2	22	7	3	0	0	5	0	0	43
TOTAL	45	37	26	22	31	28	89	171	334	178	65	53	42	50	51	73	1297

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	2
1.01- 3.50	5	1	1	2	3	3	1	0	2	3	2	0	0	0	1	1	25
3.51- 7.50	4	3	11	2	1	1	11	16	9	10	4	4	2	2	11	11	102
7.51-12.50	9	1	0	1	0	3	4	28	29	23	10	11	8	7	12	11	157
12.51-18.50	1	0	0	0	0	0	7	22	21	28	8	15	13	8	10	10	143
18.51-24.00	0	0	0	0	0	0	1	0	5	7	6	4	7	14	14	5	63
>24.00	0	0	0	0	0	0	0	0	0	1	1	0	3	7	0	0	12
TOTAL	19	5	12	5	4	7	24	66	66	72	31	34	33	38	48	38	504

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JUL-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19

*** JUL-DEC 2019 ***

STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	1	0	0	0	1	1	0	0	0	0	0	0	0	1	1	5
3.51- 7.50	3	0	2	0	0	0	0	4	3	3	4	2	1	3	1	1	27
7.51-12.50	0	1	0	0	0	0	0	3	6	8	10	3	5	5	6	2	49
12.51-18.50	0	0	0	0	0	0	0	0	1	5	7	0	1	1	2	0	17
18.51-24.00	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	3
>24.00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
TOTAL	3	2	2	0	0	1	1	7	10	16	24	6	7	9	10	5	103

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	4
1.01- 3.50	10	6	13	11	14	11	17	6	7	7	4	4	2	4	5	8	129
3.51- 7.50	52	51	43	46	49	56	67	69	62	36	26	23	20	25	28	52	705
7.51-12.50	99	57	19	44	47	116	127	137	141	101	54	58	33	34	72	138	1277
12.51-18.50	104	29	17	10	26	92	120	149	303	170	64	55	55	54	80	123	1451
18.51-24.00	41	11	1	2	4	6	30	39	158	83	22	23	19	62	74	54	629
>24.00	35	4	0	0	1	2	5	4	50	18	7	8	10	36	30	6	216
TOTAL	341	158	93	113	141	283	366	404	721	415	177	171	139	215	289	381	4411

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JUL-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19

*** JUL-DEC 2019 ***

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 4416

TOTAL NUMBER OF VALID OBSERVATIONS: 4411

TOTAL NUMBER OF MISSING OBSERVATIONS: 5

PERCENT DATA RECOVERY FOR THIS PERIOD: 99.9 %

MEAN WIND SPEED FOR THIS PERIOD: 13.3 MPH

NUMBER OF OBSERVATIONS WITH BACKUP WIND SPEED: 105

NUMBER OF OBSERVATIONS WITH BACKUP WIND DIRECTION: 105

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 105

B226

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
.02	.00	.05	56.77	29.40	11.43	2.34

DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
D	274	114	53	86	106	247	252	160	310	149	57	76	57	118	180	265	0
E	45	37	26	22	31	28	89	171	334	178	65	53	42	50	51	73	2
F	19	5	12	5	4	7	24	66	66	72	31	34	33	38	48	38	2
G	3	2	2	0	0	1	1	7	10	16	24	6	7	9	10	5	0
TOTAL	341	158	93	113	141	283	366	404	721	415	177	171	139	215	289	381	4

Stability Classes by Hour of Day

100-Meter Wind vs. Delta T

July-December 2019

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JUL-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19
STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																					
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	7	1	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	7	2	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	7	3	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D
19	7	4	E	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E
19	7	5	E	E	E	E	E	E	D	D	D	D	D	E	D	D	D	D	D	D	D	E	F	F	F	F
19	7	6	F	F	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	7	7	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	D	D	E
19	7	8	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	7	9	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F	F
19	7	10	G	F	G	F	F	E	F	E	E	D	D	D	D	D	D	D	D	D	D	E	F	F	F	F
19	7	11	G	F	F	F	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	F	F
19	7	12	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F	F
19	7	13	F	F	F	F	F	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	F	E	F	F
19	7	14	F	E	E	E	E	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E
19	7	15	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	-	-	E	E
19	7	16	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	F
19	7	17	F	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	7	18	E	E	E	E	E	D	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E
19	7	19	E	E	E	D	E	E	E	E	D	D	D	D	D	D	C	D	D	D	D	D	D	E	E	E
19	7	20	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D
19	7	21	D	D	D	D	D	E	D	D	E	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D
19	7	22	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E
19	7	23	D	D	E	E	E	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F
19	7	24	F	F	F	F	F	F	F	F	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	F
19	7	25	F	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E
19	7	26	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E
19	7	27	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E
19	7	28	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	F	E
19	7	29	E	E	E	D	D	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	F	F	E
19	7	30	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	7	31	D	D	D	D	D	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	8	1	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	8	2	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	8	3	E	D	D	E	D	D	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E
19	8	4	F	F	F	E	E	F	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	F	F	F
19	8	5	F	F	F	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	8	6	E	E	E	E	E	E	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E
19	8	7	E	E	E	E	E	F	F	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	F
19	8	8	E	F	F	F	F	F	F	F	F	E	E	D	D	D	D	D	D	D	D	E	E	F	F	E
19	8	9	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	8	10	D	D	D	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E
19	8	11	E	E	F	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	8	12	D	D	D	D	D	D	D	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F
19	8	13	F	F	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	F	F	G	G

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JUL-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19
STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																					
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	8	14	F	F	E	D	D	D	D	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E
19	8	15	F	F	F	F	F	F	F	F	E	E	D	D	D	E	D	D	D	E	D	D	D	D	D	D
19	8	16	D	D	D	D	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E
19	8	17	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E
19	8	18	E	D	D	D	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E
19	8	19	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	8	20	D	E	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	E	F	F	F
19	8	21	E	E	E	E	E	E	F	E	G	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D
19	8	22	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	8	23	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D
19	8	24	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	8	25	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	8	26	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	F
19	8	27	F	F	F	F	F	F	E	F	F	E	D	D	D	D	D	D	D	D	D	E	E	E	E	F
19	8	28	F	F	F	F	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	F	F	F
19	8	29	F	F	F	F	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	D	D
19	8	30	D	D	E	E	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E
19	8	31	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D
19	9	1	D	D	D	D	D	D	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E
19	9	2	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E
19	9	3	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	D
19	9	4	D	D	D	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E
19	9	5	D	D	D	D	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	F
19	9	6	F	F	G	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	E	E
19	9	7	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	9	8	D	D	D	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	9	9	D	D	D	D	D	D	D	E	E	D	D	D	D	D	D	E	E	E	E	G	F	F	E	E
19	9	10	E	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E
19	9	11	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	9	12	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	F	F	F
19	9	13	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	F	F	E	E
19	9	14	E	E	E	E	F	F	F	F	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	9	15	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	F	F	F	F
19	9	16	F	F	F	E	E	E	E	F	F	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E
19	9	17	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	9	18	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	F	E
19	9	19	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E
19	9	20	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	9	21	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	D	D	D	D
19	9	22	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	G	G
19	9	23	G	F	F	F	F	F	F	E	E	E	E	D	D	D	D	D	D	D	D	E	E	E	E	E
19	9	24	E	E	E	F	E	E	F	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	D	D
19	9	25	E	D	E	E	E	F	F	F	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	9	26	D	D	E	E	F	F	F	F	F	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	9	27	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JUL-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19
STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																						
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	9	28	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	9	29	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	9	30	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	E	E	E	E	E	E	E
19	10	1	E	E	E	E	E	E	E	E	E	D	D	D	D	D	E	E	D	E	D	E	E	E	D	D
19	10	2	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	10	3	D	D	D	D	D	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	E	E	E	D
19	10	4	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	10	5	D	D	D	D	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	E	F	F	F	G
19	10	6	F	G	G	G	G	G	F	F	F	F	F	E	D	D	E	D	D	D	E	F	G	G	G	F
19	10	7	G	G	G	G	G	G	G	G	G	F	E	D	D	D	D	D	D	D	E	F	F	F	F	F
19	10	8	F	F	F	F	F	E	F	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	10	9	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E
19	10	10	E	E	E	E	E	E	E	E	E	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D
19	10	11	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	F
19	10	12	F	F	E	F	F	E	E	E	E	E	E	D	D	D	D	D	D	D	D	E	F	F	F	F
19	10	13	F	F	F	F	F	F	F	F	G	E	E	D	D	D	D	D	D	D	D	E	G	G	G	G
19	10	14	G	G	G	F	E	E	D	D	D	D	D	D	D	-	-	-	D	D	E	E	F	F	F	F
19	10	15	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	E	D
19	10	16	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F	F
19	10	17	F	F	F	F	F	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	10	18	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	F	F	E
19	10	19	E	E	D	E	E	E	E	D	E	E	D	D	D	D	D	D	D	D	D	F	G	G	G	G
19	10	20	G	G	F	F	E	F	F	E	E	E	D	D	D	D	D	D	D	E	E	D	D	D	E	E
19	10	21	E	E	E	E	F	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	10	22	D	D	D	D	D	E	E	D	E	D	D	D	D	D	D	D	D	D	D	E	F	F	G	G
19	10	23	G	G	F	F	F	F	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D
19	10	24	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E
19	10	25	F	F	F	F	F	F	F	F	F	F	E	D	D	D	D	D	D	D	D	E	F	F	F	F
19	10	26	F	F	F	F	F	E	F	F	F	F	E	D	D	D	D	D	D	D	D	E	F	F	F	F
19	10	27	G	F	F	E	E	E	D	D	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	10	28	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	10	29	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	10	30	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	10	31	D	D	D	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	F	F	F
19	11	1	F	F	F	F	F	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	F	F	F	E
19	11	2	E	E	E	F	F	F	F	E	E	E	D	D	D	D	D	D	D	D	D	E	F	F	F	F
19	11	3	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	F	F	G	G	G
19	11	4	G	G	G	F	E	F	F	E	E	E	E	D	D	D	D	D	D	D	D	E	E	E	F	F
19	11	5	F	E	D	D	D	E	E	E	F	E	D	D	D	D	D	D	E	E	E	F	F	F	F	E
19	11	6	E	E	E	E	E	F	F	F	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	11	7	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	F	F	F
19	11	8	E	F	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
19	11	9	E	E	E	E	E	E	F	F	E	E	E	E	E	D	D	E	E	E	F	F	G	F	E	F
19	11	10	F	G	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	11	11	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JUL-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19
STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																						
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	11	12	E	E	F	F	F	F	F	E	E	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D
19	11	13	D	D	D	E	E	E	E	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
19	11	14	E	D	E	E	F	F	F	E	D	D	D	D	D	D	D	D	D	E	F	F	G	G	G	F
19	11	15	F	F	F	F	F	G	G	F	F	F	E	E	E	E	D	D	E	F	F	F	F	F	F	F
19	11	16	F	F	F	E	E	E	E	E	E	D	D	D	D	D	D	D	E	E	E	E	E	E	E	E
19	11	17	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	E	F	F	F	F	F	G
19	11	18	G	G	F	F	G	F	E	E	E	E	E	E	D	D	D	E	E	F	F	E	E	E	E	E
19	11	19	E	E	F	F	F	F	E	F	E	E	E	D	D	D	D	D	E	E	F	F	F	F	F	F
19	11	20	F	E	E	E	E	E	F	E	E	E	E	E	D	D	D	D	D	E	E	E	E	E	E	E
19	11	21	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	11	22	D	D	D	D	D	D	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D	E	E	E
19	11	23	E	D	D	D	E	E	E	E	D	D	D	D	D	D	D	D	D	E	F	F	F	F	F	F
19	11	24	F	F	F	F	F	F	F	F	E	D	D	D	D	D	D	D	E	E	E	E	F	F	F	F
19	11	25	F	G	F	G	G	G	F	F	E	D	D	D	D	D	D	D	E	E	F	F	E	E	E	E
19	11	26	E	E	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	11	27	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	E	E	F	F
19	11	28	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	11	29	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	11	30	D	D	D	D	D	E	E	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	12	1	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	12	2	D	D	D	D	E	E	E	E	D	D	D	D	D	D	D	E	E	F	F	F	F	F	F	E
19	12	3	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	E	E	E	E	E	E	F	F
19	12	4	F	F	F	F	F	F	F	F	E	E	D	D	D	D	D	E	E	F	G	G	G	G	G	G
19	12	5	G	G	G	G	G	G	G	G	G	F	F	E	E	E	D	D	E	F	F	E	E	D	D	D
19	12	6	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F	F	F	F
19	12	7	F	F	F	E	E	E	E	E	E	D	D	D	D	D	D	D	E	E	E	E	E	E	E	E
19	12	8	E	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	E	E	F	F	F	F	F	F
19	12	9	F	F	G	G	F	E	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	F	F
19	12	10	E	F	E	E	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	F	F	F	E
19	12	11	E	E	E	E	E	F	E	F	E	D	D	D	D	D	D	D	D	E	E	E	E	E	E	E
19	12	12	E	E	E	E	E	E	E	E	E	D	D	D	D	D	D	D	E	E	E	E	D	D	D	D
19	12	13	D	D	E	E	E	E	D	D	D	D	D	D	D	D	D	E	E	E	E	E	D	D	D	D
19	12	14	D	D	D	D	D	D	D	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	12	15	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	12	16	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	12	17	D	D	D	D	D	D	D	E	E	E	E	D	A	C	D	D	E	E	E	E	F	F	F	F
19	12	18	F	F	F	F	F	F	F	F	E	E	D	E	D	D	D	D	E	E	E	E	F	F	F	G
19	12	19	G	G	G	G	G	G	G	G	G	F	E	E	D	E	E	E	E	E	E	E	E	F	F	E
19	12	20	E	E	E	E	E	E	E	E	E	E	E	D	D	D	D	D	E	F	F	F	F	F	G	G
19	12	21	G	F	G	G	G	F	G	F	F	E	E	D	D	D	D	E	E	E	F	E	E	E	E	E
19	12	22	E	E	F	E	E	E	E	E	E	E	E	D	D	E	E	E	E	F	E	E	E	E	E	F
19	12	23	F	E	E	F	F	F	F	E	E	E	E	E	D	D	E	E	E	E	E	E	E	E	E	E
19	12	24	E	F	E	E	E	E	F	E	E	E	D	D	D	D	E	E	E	F	F	F	E	E	E	E
19	12	25	E	E	E	E	E	E	E	E	E	E	D	D	D	D	E	E	E	E	F	F	E	E	D	D
19	12	26	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	F	F	E

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JUL-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 7/ 1/19 - 12/31/19
STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS

HOURLY STABILITIES

			HOURS																					
YR	MN	DY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
19	12	27	F	F	F	F	F	F	F	F	F	E	E	D	D	D	D	D	E	E	E	E	D	D	D	D
19	12	28	D	D	D	D	D	D	D	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E	E
19	12	29	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
19	12	30	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E
19	12	31	E	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	E	E	E	F	F	F	F	F

JFDs of 100-Meter Wind vs. Delta T

January-December 2019

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 12/31/19

*** JAN-DEC 2019 ***

STABILITY CLASS A

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1

STABILITY CLASS B

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 12/31/19

*** JAN-DEC 2019 ***

STABILITY CLASS C

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.51- 7.50	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	5
7.51-12.50	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
12.51-18.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18.51-24.00	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	3
>24.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	1	1	0	0	0	0	0	0	1	0	0	1	0	1	1	3	9

STABILITY CLASS D

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	7	10	10	13	18	11	7	8	7	8	2	5	0	2	5	10	123
3.51- 7.50	80	65	40	61	64	95	76	52	52	27	31	23	18	25	28	44	781
7.51-12.50	188	117	53	85	75	148	201	102	76	61	72	44	28	41	77	153	1521
12.51-18.50	213	89	51	31	64	159	178	77	168	107	59	45	43	66	133	214	1697
18.51-24.00	87	37	4	14	26	31	46	18	95	62	24	17	16	49	113	128	767
>24.00	86	10	2	3	14	8	4	5	50	25	7	16	20	42	82	33	407
TOTAL	661	328	160	207	261	452	512	262	448	290	195	150	125	225	438	582	5296

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 12/31/19

*** JAN-DEC 2019 ***

STABILITY CLASS E

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	2
1.01- 3.50	7	2	7	6	8	7	10	4	3	2	3	3	5	2	3	3	75
3.51- 7.50	23	23	31	27	17	16	40	36	27	23	11	8	12	8	5	17	324
7.51-12.50	34	28	14	21	17	37	76	85	90	49	22	27	15	14	21	51	601
12.51-18.50	29	22	14	5	21	31	54	135	256	134	51	29	39	31	40	67	958
18.51-24.00	4	1	0	1	8	10	24	46	126	68	16	15	5	29	41	22	416
>24.00	1	0	0	0	3	2	13	7	35	11	5	2	2	7	8	0	96
TOTAL	98	76	66	60	74	103	217	313	537	287	108	84	78	91	118	160	2472

STABILITY CLASS F

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	3
1.01- 3.50	6	1	2	6	5	6	3	1	2	4	2	1	0	1	1	2	43
3.51- 7.50	7	6	16	5	10	2	12	22	9	11	6	5	2	6	12	17	148
7.51-12.50	13	2	1	3	2	10	9	34	32	35	20	21	12	9	17	21	241
12.51-18.50	1	0	0	0	0	2	10	27	24	40	22	21	24	20	12	19	222
18.51-24.00	0	0	0	0	0	0	1	0	8	9	8	8	14	16	17	14	95
>24.00	0	0	0	0	0	0	0	0	0	2	1	0	6	7	0	0	16
TOTAL	27	9	19	14	17	20	35	84	75	101	59	56	58	59	59	73	768

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 12/31/19

*** JAN-DEC 2019 ***

STABILITY CLASS G

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	0
1.01- 3.50	1	1	1	0	1	2	1	1	1	1	0	2	0	2	2	2	18
3.51- 7.50	5	0	3	2	2	5	0	4	5	6	6	6	1	4	3	4	56
7.51-12.50	2	2	1	0	1	1	0	3	8	11	14	9	11	10	10	5	88
12.51-18.50	0	0	0	0	0	0	0	0	6	7	9	2	3	2	5	0	34
18.51-24.00	0	0	0	0	0	0	0	0	1	0	3	2	0	1	1	1	9
>24.00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	1	4
TOTAL	8	3	5	2	4	8	1	8	21	25	34	21	15	19	22	13	209

STABILITY CLASS ALL

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH
JOINT FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION IN HOURS AT 100.00 METERS

SPEED (MPH)	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
CALM																	5
1.01- 3.50	21	14	20	25	32	26	21	14	13	15	7	11	5	7	11	17	259
3.51- 7.50	115	95	90	95	93	118	128	114	93	67	54	42	33	44	49	84	1314
7.51-12.50	237	149	69	109	95	196	286	224	206	156	128	103	66	74	125	230	2453
12.51-18.50	243	111	65	36	85	192	242	239	454	288	141	97	109	119	190	300	2911
18.51-24.00	92	38	4	15	34	41	71	64	231	139	51	42	35	95	172	166	1290
>24.00	87	10	2	3	17	10	17	12	85	38	15	18	28	56	91	34	523
TOTAL	795	417	250	283	356	583	765	667	1082	703	396	313	276	395	638	831	8755

PROGRAM: JFD VERSION: PC-1.2
NPPD-COOPER NUCLEAR STATION JFD:100M WIND VS 10M DELTA T JAN-DEC 2019
SITE IDENTIFIER: NPPD
DATA PERIOD EXAMINED: 1/ 1/19 - 12/31/19

*** JAN-DEC 2019 ***

STABILITY BASED ON: DELTA T BETWEEN 100.0 AND 10.0 METERS
WIND MEASURED AT: 100.0 METERS
WIND THRESHOLD AT: 1.00 MPH

TOTAL NUMBER OF OBSERVATIONS: 8760

TOTAL NUMBER OF VALID OBSERVATIONS: 8755

TOTAL NUMBER OF MISSING OBSERVATIONS: 5

PERCENT DATA RECOVERY FOR THIS PERIOD: 99.9 %

MEAN WIND SPEED FOR THIS PERIOD: 13.6 MPH

NUMBER OF OBSERVATIONS WITH BACKUP WIND SPEED: 107

NUMBER OF OBSERVATIONS WITH BACKUP WIND DIRECTION: 107

TOTAL NUMBER OF OBSERVATIONS WITH BACKUP DATA: 107

PERCENTAGE OCCURRENCE OF STABILITY CLASSES

A	B	C	D	E	F	G
.01	.00	.10	60.49	28.24	8.77	2.39

DISTRIBUTION OF WIND DIRECTION VS STABILITY

	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	CALM
A	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C	1	1	0	0	0	0	0	0	1	0	0	1	0	1	1	3	0
D	661	328	160	207	261	452	512	262	448	290	195	150	125	225	438	582	0
E	98	76	66	60	74	103	217	313	537	287	108	84	78	91	118	160	2
F	27	9	19	14	17	20	35	84	75	101	59	56	58	59	59	73	3
G	8	3	5	2	4	8	1	8	21	25	34	21	15	19	22	13	0
TOTAL	795	417	250	283	356	583	765	667	1082	703	396	313	276	395	638	831	5

ATMOSPHERIC DIFFUSION ESTIMATES

The tables of atmospheric diffusion estimates in this section were generated using the latest version of the computer code XOQDOQ included as part of NRCDose 2.3.20 (ORNL 2015). Data are given for 22 distances and 16 compass points (directions from site) centered on the Cooper Nuclear Station (CNS). Tables are presented for the ground-level (vent) and elevated (stack) release options separately, and for the following time periods in 2019: January-March, April-June, January-June, July-September, October-December, July-December, and January-December.

The most recent 5-year average X/Q, depleted X/Q, and D/Q values for CNS have been calculated and compared to the 2018 annual values provided herein. The differences in both peak directions and magnitudes were small and were likely the result of minor year-to-year climatological fluctuations. The most recent 5-year average X/Q, depleted X/Q, and D/Q values are representative of conditions around CNS and are available for use in dose calculations as necessary.

Atmospheric Diffusion Estimates

Ground Level Releases

January-March 2019

VENTS GROUND LEVEL RELEASES - JAN-MAR 2019
NO DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	4.770E-05	1.610E-05	8.600E-06	4.304E-06	1.719E-06	9.268E-07	5.853E-07	4.072E-07	3.024E-07	2.353E-07	1.896E-07
SSW	4.033E-05	1.432E-05	7.702E-06	3.837E-06	1.509E-06	8.049E-07	5.041E-07	3.484E-07	2.572E-07	1.991E-07	1.597E-07
SW	1.613E-05	5.782E-06	3.168E-06	1.592E-06	6.231E-07	3.309E-07	2.066E-07	1.424E-07	1.049E-07	8.101E-08	6.485E-08
WSW	1.609E-05	5.857E-06	3.201E-06	1.602E-06	6.238E-07	3.301E-07	2.054E-07	1.412E-07	1.038E-07	8.003E-08	6.396E-08
W	1.540E-05	5.688E-06	3.087E-06	1.537E-06	5.931E-07	3.118E-07	1.931E-07	1.321E-07	9.677E-08	7.436E-08	5.925E-08
WNW	2.478E-05	9.042E-06	4.939E-06	2.471E-06	9.612E-07	5.082E-07	3.161E-07	2.172E-07	1.596E-07	1.230E-07	9.829E-08
NW	2.732E-05	9.789E-06	5.322E-06	2.662E-06	1.049E-06	5.597E-07	3.508E-07	2.426E-07	1.793E-07	1.389E-07	1.114E-07
NNW	4.431E-05	1.395E-05	7.444E-06	3.767E-06	1.562E-06	8.644E-07	5.567E-07	3.936E-07	2.962E-07	2.332E-07	1.897E-07
N	5.891E-05	1.830E-05	9.618E-06	4.839E-06	2.024E-06	1.126E-06	7.280E-07	5.164E-07	3.897E-07	3.075E-07	2.507E-07
NNE	2.503E-05	7.912E-06	4.118E-06	2.055E-06	8.503E-07	4.698E-07	3.023E-07	2.135E-07	1.606E-07	1.264E-07	1.028E-07
NE	2.013E-05	6.646E-06	3.547E-06	1.781E-06	7.181E-07	3.895E-07	2.472E-07	1.727E-07	1.286E-07	1.004E-07	8.108E-08
ENE	2.349E-05	7.495E-06	3.988E-06	2.011E-06	8.253E-07	4.533E-07	2.904E-07	2.044E-07	1.533E-07	1.203E-07	9.761E-08
E	1.782E-05	5.539E-06	2.916E-06	1.468E-06	6.087E-07	3.366E-07	2.167E-07	1.532E-07	1.153E-07	9.071E-08	7.381E-08
ESE	3.039E-05	9.878E-06	5.253E-06	2.639E-06	1.077E-06	5.895E-07	3.766E-07	2.646E-07	1.981E-07	1.552E-07	1.258E-07
SE	3.682E-05	1.250E-05	6.700E-06	3.355E-06	1.346E-06	7.280E-07	4.609E-07	3.214E-07	2.392E-07	1.864E-07	1.504E-07
SSE	3.857E-05	1.289E-05	6.819E-06	3.399E-06	1.369E-06	7.428E-07	4.714E-07	3.293E-07	2.455E-07	1.916E-07	1.548E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	1.569E-07	8.062E-08	5.224E-08	2.996E-08	2.027E-08	1.501E-08	1.176E-08	9.574E-09	8.019E-09	6.862E-09	5.971E-09
SSW	1.317E-07	6.661E-08	4.268E-08	2.408E-08	1.610E-08	1.181E-08	9.179E-09	7.425E-09	6.183E-09	5.263E-09	4.559E-09
SW	5.336E-08	2.679E-08	1.707E-08	9.543E-09	6.337E-09	4.621E-09	3.574E-09	2.878E-09	2.387E-09	2.025E-09	1.748E-09
WSW	5.255E-08	2.623E-08	1.663E-08	9.241E-09	6.107E-09	4.437E-09	3.420E-09	2.747E-09	2.273E-09	1.924E-09	1.658E-09
W	4.855E-08	2.397E-08	1.508E-08	8.276E-09	5.421E-09	3.910E-09	2.997E-09	2.394E-09	1.972E-09	1.663E-09	1.427E-09
WNW	8.074E-08	4.025E-08	2.551E-08	1.416E-08	9.348E-09	6.786E-09	5.229E-09	4.197E-09	3.471E-09	2.937E-09	2.530E-09
NW	9.192E-08	4.657E-08	2.987E-08	1.687E-08	1.129E-08	8.284E-09	6.440E-09	5.210E-09	4.338E-09	3.693E-09	3.198E-09
NNW	1.584E-07	8.418E-08	5.583E-08	3.305E-08	2.286E-08	1.720E-08	1.365E-08	1.124E-08	9.500E-09	8.195E-09	7.182E-09
N	2.098E-07	1.122E-07	7.477E-08	4.455E-08	3.095E-08	2.338E-08	1.861E-08	1.535E-08	1.300E-08	1.124E-08	9.866E-09
NNE	8.583E-08	4.557E-08	3.021E-08	1.789E-08	1.238E-08	9.323E-09	7.404E-09	6.099E-09	5.159E-09	4.454E-09	3.906E-09
NE	6.726E-08	3.485E-08	2.272E-08	1.314E-08	8.943E-09	6.651E-09	5.229E-09	4.270E-09	3.586E-09	3.076E-09	2.682E-09
ENE	8.132E-08	4.282E-08	2.823E-08	1.658E-08	1.141E-08	8.552E-09	6.767E-09	5.557E-09	4.688E-09	4.037E-09	3.532E-09
E	6.163E-08	3.275E-08	2.172E-08	1.287E-08	8.904E-09	6.706E-09	5.325E-09	4.386E-09	3.709E-09	3.201E-09	2.807E-09
ESE	1.047E-07	5.491E-08	3.610E-08	2.113E-08	1.450E-08	1.085E-08	8.572E-09	7.030E-09	5.924E-09	5.097E-09	4.457E-09
SE	1.247E-07	6.438E-08	4.187E-08	2.413E-08	1.638E-08	1.216E-08	9.544E-09	7.784E-09	6.528E-09	5.593E-09	4.872E-09
SSE	1.284E-07	6.664E-08	4.349E-08	2.519E-08	1.718E-08	1.279E-08	1.007E-08	8.233E-09	6.920E-09	5.940E-09	5.183E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

	SEGMENT BOUNDARIES IN MILES FROM THE SITE									
DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	8.358E-06	1.941E-06	6.051E-07	3.068E-07	1.910E-07	8.496E-08	3.061E-08	1.511E-08	9.605E-09	6.875E-09
SSW	7.454E-06	1.714E-06	5.220E-07	2.611E-07	1.610E-07	7.044E-08	2.467E-08	1.190E-08	7.453E-09	5.275E-09
SW	3.048E-06	7.085E-07	2.141E-07	1.065E-07	6.538E-08	2.837E-08	9.790E-09	4.660E-09	2.890E-09	2.030E-09
WSW	3.080E-06	7.107E-07	2.130E-07	1.054E-07	6.450E-08	2.781E-08	9.491E-09	4.476E-09	2.759E-09	1.929E-09
W	2.976E-06	6.777E-07	2.004E-07	9.834E-08	5.977E-08	2.548E-08	8.519E-09	3.948E-09	2.406E-09	1.667E-09
WNW	4.754E-06	1.095E-06	3.278E-07	1.621E-07	9.912E-08	4.270E-08	1.454E-08	6.846E-09	4.215E-09	2.944E-09
NW	5.133E-06	1.190E-06	3.633E-07	1.820E-07	1.123E-07	4.923E-08	1.728E-08	8.349E-09	5.229E-09	3.701E-09
NNW	7.255E-06	1.742E-06	5.735E-07	3.000E-07	1.910E-07	8.808E-08	3.358E-08	1.729E-08	1.127E-08	8.206E-09
N	9.423E-06	2.250E-06	7.494E-07	3.946E-07	2.524E-07	1.172E-07	4.522E-08	2.349E-08	1.539E-08	1.125E-08
NNE	4.044E-06	9.488E-07	3.114E-07	1.627E-07	1.035E-07	4.769E-08	1.818E-08	9.370E-09	6.114E-09	4.460E-09
NE	3.451E-06	8.084E-07	2.553E-07	1.305E-07	8.168E-08	3.666E-08	1.340E-08	6.693E-09	4.283E-09	3.081E-09
ENE	3.889E-06	9.234E-07	2.994E-07	1.553E-07	9.829E-08	4.489E-08	1.687E-08	8.600E-09	5.572E-09	4.043E-09
E	2.855E-06	6.787E-07	2.233E-07	1.167E-07	7.431E-08	3.427E-08	1.307E-08	6.740E-09	4.397E-09	3.206E-09
ESE	5.119E-06	1.207E-06	3.886E-07	2.007E-07	1.267E-07	5.761E-08	2.151E-08	1.091E-08	7.049E-09	5.105E-09
SE	6.502E-06	1.518E-06	4.764E-07	2.426E-07	1.515E-07	6.777E-08	2.463E-08	1.224E-08	7.808E-09	5.603E-09
SSE	6.648E-06	1.542E-06	4.869E-07	2.489E-07	1.559E-07	7.008E-08	2.570E-08	1.287E-08	8.257E-09	5.950E-09

VENTS GROUND LEVEL RELEASES - JAN-MAR 2019
2.260 DAY DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	4.764E-05	1.606E-05	8.568E-06	4.282E-06	1.706E-06	9.169E-07	5.773E-07	4.005E-07	2.966E-07	2.301E-07	1.848E-07
SSW	4.028E-05	1.428E-05	7.676E-06	3.820E-06	1.499E-06	7.973E-07	4.981E-07	3.434E-07	2.529E-07	1.953E-07	1.563E-07
SW	1.611E-05	5.764E-06	3.153E-06	1.582E-06	6.171E-07	3.267E-07	2.033E-07	1.396E-07	1.025E-07	7.891E-08	6.295E-08
WSW	1.607E-05	5.843E-06	3.189E-06	1.595E-06	6.192E-07	3.268E-07	2.029E-07	1.391E-07	1.020E-07	7.844E-08	6.253E-08
W	1.539E-05	5.677E-06	3.078E-06	1.530E-06	5.895E-07	3.093E-07	1.911E-07	1.305E-07	9.538E-08	7.314E-08	5.816E-08
WNW	2.475E-05	9.025E-06	4.925E-06	2.462E-06	9.555E-07	5.042E-07	3.130E-07	2.146E-07	1.574E-07	1.211E-07	9.652E-08
NW	2.729E-05	9.768E-06	5.305E-06	2.651E-06	1.042E-06	5.547E-07	3.468E-07	2.393E-07	1.764E-07	1.363E-07	1.091E-07
NNW	4.422E-05	1.390E-05	7.403E-06	3.739E-06	1.545E-06	8.518E-07	5.466E-07	3.850E-07	2.887E-07	2.264E-07	1.835E-07
N	5.881E-05	1.824E-05	9.570E-06	4.806E-06	2.003E-06	1.110E-06	7.158E-07	5.060E-07	3.806E-07	2.992E-07	2.431E-07
NNE	2.499E-05	7.888E-06	4.100E-06	2.043E-06	8.426E-07	4.640E-07	2.976E-07	2.096E-07	1.572E-07	1.232E-07	9.994E-08
NE	2.010E-05	6.628E-06	3.533E-06	1.772E-06	7.121E-07	3.851E-07	2.436E-07	1.697E-07	1.260E-07	9.803E-08	7.894E-08
ENE	2.344E-05	7.470E-06	3.968E-06	1.997E-06	8.168E-07	4.470E-07	2.853E-07	2.001E-07	1.495E-07	1.169E-07	9.453E-08
E	1.779E-05	5.522E-06	2.903E-06	1.459E-06	6.031E-07	3.325E-07	2.134E-07	1.503E-07	1.128E-07	8.845E-08	7.174E-08
ESE	3.034E-05	9.852E-06	5.232E-06	2.624E-06	1.068E-06	5.830E-07	3.714E-07	2.601E-07	1.942E-07	1.517E-07	1.226E-07
SE	3.677E-05	1.247E-05	6.676E-06	3.339E-06	1.336E-06	7.208E-07	4.551E-07	3.165E-07	2.349E-07	1.826E-07	1.469E-07
SSE	3.852E-05	1.285E-05	6.793E-06	3.382E-06	1.358E-06	7.347E-07	4.649E-07	3.239E-07	2.407E-07	1.873E-07	1.509E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	1.525E-07	7.720E-08	4.928E-08	2.743E-08	1.802E-08	1.296E-08	9.870E-09	7.816E-09	6.371E-09	5.308E-09	4.500E-09
SSW	1.285E-07	6.417E-08	4.060E-08	2.233E-08	1.456E-08	1.042E-08	7.900E-09	6.238E-09	5.072E-09	4.217E-09	3.569E-09
SW	5.163E-08	2.548E-08	1.596E-08	8.630E-09	5.545E-09	3.914E-09	2.933E-09	2.290E-09	1.842E-09	1.517E-09	1.272E-09
WSW	5.125E-08	2.525E-08	1.581E-08	8.562E-09	5.519E-09	3.912E-09	2.944E-09	2.309E-09	1.867E-09	1.544E-09	1.301E-09
W	4.756E-08	2.323E-08	1.446E-08	7.775E-09	4.990E-09	3.527E-09	2.650E-09	2.076E-09	1.677E-09	1.387E-09	1.169E-09
WNW	7.913E-08	3.904E-08	2.449E-08	1.331E-08	8.618E-09	6.134E-09	4.635E-09	3.651E-09	2.964E-09	2.462E-09	2.083E-09
NW	8.979E-08	4.495E-08	2.849E-08	1.571E-08	1.027E-08	7.361E-09	5.593E-09	4.424E-09	3.604E-09	3.002E-09	2.545E-09
NNW	1.527E-07	7.965E-08	5.188E-08	2.964E-08	1.981E-08	1.442E-08	1.108E-08	8.832E-09	7.239E-09	6.058E-09	5.155E-09
N	2.027E-07	1.066E-07	6.987E-08	4.029E-08	2.711E-08	1.985E-08	1.533E-08	1.228E-08	1.010E-08	8.488E-09	7.248E-09
NNE	8.317E-08	4.345E-08	2.836E-08	1.627E-08	1.092E-08	7.976E-09	6.150E-09	4.921E-09	4.046E-09	3.396E-09	2.898E-09
NE	6.528E-08	3.330E-08	2.137E-08	1.199E-08	7.917E-09	5.716E-09	4.367E-09	3.468E-09	2.833E-09	2.366E-09	2.009E-09
ENE	7.847E-08	4.059E-08	2.629E-08	1.491E-08	9.920E-09	7.196E-09	5.515E-09	4.389E-09	3.591E-09	3.001E-09	2.551E-09
E	5.971E-08	3.122E-08	2.038E-08	1.170E-08	7.851E-09	5.738E-09	4.425E-09	3.542E-09	2.913E-09	2.446E-09	2.087E-09
ESE	1.017E-07	5.259E-08	3.408E-08	1.938E-08	1.293E-08	9.415E-09	7.242E-09	5.786E-09	4.752E-09	3.987E-09	3.401E-09
SE	1.214E-07	6.185E-08	3.967E-08	2.224E-08	1.470E-08	1.063E-08	8.126E-09	6.461E-09	5.285E-09	4.418E-09	3.758E-09
SSE	1.248E-07	6.380E-08	4.102E-08	2.307E-08	1.528E-08	1.105E-08	8.460E-09	6.728E-09	5.504E-09	4.600E-09	3.911E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
	SEGMENT BOUNDARIES IN MILES FROM THE SITE									
S	8.329E-06	1.928E-06	5.972E-07	3.010E-07	1.863E-07	8.153E-08	2.810E-08	1.307E-08	7.852E-09	5.324E-09
SSW	7.430E-06	1.703E-06	5.160E-07	2.568E-07	1.575E-07	6.799E-08	2.294E-08	1.051E-08	6.268E-09	4.231E-09
SW	3.035E-06	7.025E-07	2.107E-07	1.041E-07	6.349E-08	2.706E-08	8.888E-09	3.957E-09	2.303E-09	1.523E-09
WSW	3.070E-06	7.060E-07	2.104E-07	1.036E-07	6.307E-08	2.683E-08	8.820E-09	3.953E-09	2.322E-09	1.550E-09
W	2.968E-06	6.740E-07	1.984E-07	9.695E-08	5.867E-08	2.474E-08	8.023E-09	3.567E-09	2.088E-09	1.392E-09
WNW	4.741E-06	1.090E-06	3.246E-07	1.599E-07	9.735E-08	4.148E-08	1.371E-08	6.197E-09	3.670E-09	2.470E-09
NW	5.117E-06	1.183E-06	3.592E-07	1.791E-07	1.100E-07	4.760E-08	1.613E-08	7.429E-09	4.446E-09	3.011E-09
NNW	7.218E-06	1.725E-06	5.633E-07	2.924E-07	1.848E-07	8.354E-08	3.021E-08	1.452E-08	8.866E-09	6.074E-09
N	9.379E-06	2.229E-06	7.371E-07	3.854E-07	2.448E-07	1.116E-07	4.100E-08	1.998E-08	1.232E-08	8.508E-09
NNE	4.027E-06	9.410E-07	3.068E-07	1.592E-07	1.006E-07	4.557E-08	1.658E-08	8.030E-09	4.939E-09	3.404E-09
NE	3.438E-06	8.022E-07	2.518E-07	1.278E-07	7.954E-08	3.511E-08	1.226E-08	5.763E-09	3.483E-09	2.372E-09
ENE	3.870E-06	9.147E-07	2.943E-07	1.515E-07	9.521E-08	4.266E-08	1.522E-08	7.250E-09	4.407E-09	3.009E-09
E	2.843E-06	6.731E-07	2.199E-07	1.142E-07	7.223E-08	3.274E-08	1.192E-08	5.776E-09	3.554E-09	2.451E-09
ESE	5.100E-06	1.198E-06	3.833E-07	1.968E-07	1.235E-07	5.529E-08	1.978E-08	9.484E-09	5.808E-09	3.997E-09
SE	6.480E-06	1.508E-06	4.705E-07	2.383E-07	1.480E-07	6.523E-08	2.276E-08	1.071E-08	6.489E-09	4.430E-09
SSE	6.624E-06	1.531E-06	4.804E-07	2.441E-07	1.520E-07	6.723E-08	2.359E-08	1.114E-08	6.756E-09	4.613E-09

VENTS GROUND LEVEL RELEASES - JAN-MAR 2019
8.000 DAY DECAY, DEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	4.513E-05	1.470E-05	7.656E-06	3.762E-06	1.457E-06	7.651E-07	4.722E-07	3.219E-07	2.347E-07	1.795E-07	1.423E-07
SSW	3.816E-05	1.307E-05	6.857E-06	3.355E-06	1.279E-06	6.647E-07	4.069E-07	2.756E-07	1.997E-07	1.520E-07	1.200E-07
SW	1.526E-05	5.275E-06	2.819E-06	1.391E-06	5.277E-07	2.730E-07	1.666E-07	1.125E-07	8.129E-08	6.172E-08	4.862E-08
WSW	1.522E-05	5.345E-06	2.849E-06	1.401E-06	5.287E-07	2.725E-07	1.658E-07	1.117E-07	8.059E-08	6.108E-08	4.805E-08
W	1.457E-05	5.191E-06	2.749E-06	1.343E-06	5.028E-07	2.576E-07	1.559E-07	1.046E-07	7.520E-08	5.682E-08	4.456E-08
WNW	2.344E-05	8.253E-06	4.398E-06	2.161E-06	8.149E-07	4.199E-07	2.553E-07	1.720E-07	1.240E-07	9.401E-08	7.393E-08
NW	2.585E-05	8.934E-06	4.739E-06	2.328E-06	8.888E-07	4.623E-07	2.833E-07	1.920E-07	1.392E-07	1.060E-07	8.376E-08
NNW	4.191E-05	1.273E-05	6.623E-06	3.290E-06	1.323E-06	7.128E-07	4.486E-07	3.107E-07	2.295E-07	1.775E-07	1.421E-07
N	5.573E-05	1.669E-05	8.559E-06	4.228E-06	1.714E-06	9.285E-07	5.869E-07	4.078E-07	3.021E-07	2.342E-07	1.879E-07
NNE	2.368E-05	7.219E-06	3.665E-06	1.796E-06	7.203E-07	3.876E-07	2.438E-07	1.687E-07	1.246E-07	9.632E-08	7.710E-08
NE	1.904E-05	6.065E-06	3.157E-06	1.557E-06	6.084E-07	3.215E-07	1.994E-07	1.365E-07	9.979E-08	7.654E-08	6.083E-08
ENE	2.222E-05	6.838E-06	3.549E-06	1.757E-06	6.989E-07	3.739E-07	2.340E-07	1.614E-07	1.188E-07	9.157E-08	7.313E-08
E	1.685E-05	5.054E-06	2.595E-06	1.283E-06	5.156E-07	2.777E-07	1.748E-07	1.210E-07	8.938E-08	6.913E-08	5.535E-08
ESE	2.875E-05	9.014E-06	4.676E-06	2.306E-06	9.126E-07	4.866E-07	3.039E-07	2.091E-07	1.537E-07	1.184E-07	9.442E-08
SE	3.483E-05	1.140E-05	5.964E-06	2.933E-06	1.141E-06	6.011E-07	3.720E-07	2.542E-07	1.857E-07	1.423E-07	1.130E-07
SSE	3.649E-05	1.176E-05	6.070E-06	2.971E-06	1.160E-06	6.131E-07	3.803E-07	2.604E-07	1.905E-07	1.461E-07	1.162E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	1.160E-07	5.613E-08	3.451E-08	1.815E-08	1.143E-08	7.946E-09	5.879E-09	4.541E-09	3.620E-09	2.956E-09	2.460E-09
SSW	9.748E-08	4.646E-08	2.826E-08	1.465E-08	9.129E-09	6.296E-09	4.629E-09	3.557E-09	2.823E-09	2.296E-09	1.905E-09
SW	3.940E-08	1.862E-08	1.125E-08	5.762E-09	3.557E-09	2.433E-09	1.775E-09	1.355E-09	1.068E-09	8.639E-10	7.126E-10
WSW	3.889E-08	1.829E-08	1.101E-08	5.619E-09	3.462E-09	2.364E-09	1.724E-09	1.316E-09	1.038E-09	8.393E-10	6.926E-10
W	3.598E-08	1.675E-08	1.001E-08	5.054E-09	3.091E-09	2.099E-09	1.524E-09	1.159E-09	9.110E-10	7.351E-10	6.054E-10
WNW	5.984E-08	2.813E-08	1.694E-08	8.646E-09	5.330E-09	3.644E-09	2.660E-09	2.031E-09	1.604E-09	1.299E-09	1.073E-09
NW	6.806E-08	3.250E-08	1.979E-08	1.028E-08	6.412E-09	4.425E-09	3.255E-09	2.503E-09	1.987E-09	1.617E-09	1.342E-09
NNW	1.169E-07	5.841E-08	3.672E-08	1.990E-08	1.279E-08	9.027E-09	6.758E-09	5.271E-09	4.236E-09	3.483E-09	2.916E-09
N	1.548E-07	7.795E-08	4.925E-08	2.690E-08	1.738E-08	1.232E-08	9.255E-09	7.241E-09	5.836E-09	4.811E-09	4.038E-09
NNE	6.340E-08	3.169E-08	1.993E-08	1.082E-08	6.966E-09	4.924E-09	3.693E-09	2.886E-09	2.323E-09	1.913E-09	1.604E-09
NE	4.971E-08	2.425E-08	1.499E-08	7.951E-09	5.036E-09	3.515E-09	2.610E-09	2.022E-09	1.615E-09	1.322E-09	1.102E-09
ENE	6.000E-08	2.973E-08	1.858E-08	9.995E-09	6.392E-09	4.494E-09	3.355E-09	2.610E-09	2.094E-09	1.719E-09	1.437E-09
E	4.553E-08	2.277E-08	1.433E-08	7.781E-09	5.010E-09	3.541E-09	2.656E-09	2.074E-09	1.670E-09	1.375E-09	1.153E-09
ESE	7.740E-08	3.823E-08	2.385E-08	1.281E-08	8.185E-09	5.754E-09	4.296E-09	3.345E-09	2.684E-09	2.205E-09	1.845E-09
SE	9.223E-08	4.486E-08	2.769E-08	1.465E-08	9.264E-09	6.461E-09	4.793E-09	3.711E-09	2.965E-09	2.426E-09	2.022E-09
SSE	9.496E-08	4.639E-08	2.872E-08	1.527E-08	9.689E-09	6.776E-09	5.038E-09	3.908E-09	3.126E-09	2.561E-09	2.138E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
	SEGMENT BOUNDARIES IN MILES FROM THE SITE									
S	7.490E-06	1.662E-06	4.902E-07	2.386E-07	1.436E-07	5.983E-08	1.880E-08	8.049E-09	4.572E-09	2.969E-09
SSW	6.680E-06	1.467E-06	4.231E-07	2.032E-07	1.212E-07	4.971E-08	1.522E-08	6.384E-09	3.583E-09	2.307E-09
SW	2.730E-06	6.064E-07	1.733E-07	8.274E-08	4.909E-08	1.996E-08	6.001E-09	2.470E-09	1.366E-09	8.685E-10
WSW	2.760E-06	6.086E-07	1.726E-07	8.204E-08	4.852E-08	1.963E-08	5.859E-09	2.401E-09	1.326E-09	8.437E-10
W	2.667E-06	5.806E-07	1.625E-07	7.660E-08	4.501E-08	1.803E-08	5.283E-09	2.134E-09	1.169E-09	7.392E-10
WNW	4.260E-06	9.384E-07	2.659E-07	1.263E-07	7.466E-08	3.020E-08	9.015E-09	3.700E-09	2.048E-09	1.306E-09
NW	4.599E-06	1.019E-06	2.945E-07	1.417E-07	8.455E-08	3.476E-08	1.067E-08	4.487E-09	2.521E-09	1.625E-09
NNW	6.498E-06	1.489E-06	4.639E-07	2.329E-07	1.432E-07	6.176E-08	2.048E-08	9.124E-09	5.301E-09	3.496E-09
N	8.442E-06	1.923E-06	6.064E-07	3.064E-07	1.894E-07	8.228E-08	2.764E-08	1.244E-08	7.281E-09	4.828E-09
NNE	3.624E-06	8.114E-07	2.521E-07	1.264E-07	7.772E-08	3.351E-08	1.113E-08	4.976E-09	2.902E-09	1.920E-09
NE	3.092E-06	6.917E-07	2.068E-07	1.014E-07	6.137E-08	2.579E-08	8.221E-09	3.559E-09	2.035E-09	1.328E-09
ENE	3.483E-06	7.895E-07	2.423E-07	1.206E-07	7.373E-08	3.150E-08	1.030E-08	4.544E-09	2.626E-09	1.725E-09
E	2.558E-06	5.804E-07	1.807E-07	9.071E-08	5.580E-08	2.408E-08	8.004E-09	3.579E-09	2.086E-09	1.380E-09
ESE	4.587E-06	1.033E-06	3.147E-07	1.561E-07	9.521E-08	4.055E-08	1.321E-08	5.819E-09	3.365E-09	2.214E-09
SE	5.826E-06	1.299E-06	3.860E-07	1.887E-07	1.140E-07	4.776E-08	1.515E-08	6.541E-09	3.736E-09	2.436E-09
SSE	5.957E-06	1.320E-06	3.944E-07	1.935E-07	1.172E-07	4.933E-08	1.578E-08	6.857E-09	3.933E-09	2.572E-09

VENTS GROUND LEVEL RELEASES - JAN-MAR 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) AT FIXED POINTS BY DOWNWIND SECTORS **********

DIRECTION	DISTANCES IN MILES										
FROM SITE	.25	.50	.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
S	3.070E-07	1.038E-07	5.330E-08	2.534E-08	9.101E-09	4.514E-09	2.658E-09	1.740E-09	1.225E-09	9.075E-10	6.993E-10
SSW	2.207E-07	7.462E-08	3.831E-08	1.821E-08	6.543E-09	3.245E-09	1.911E-09	1.251E-09	8.803E-10	6.524E-10	5.027E-10
SW	6.714E-08	2.270E-08	1.166E-08	5.542E-09	1.991E-09	9.872E-10	5.813E-10	3.806E-10	2.678E-10	1.985E-10	1.529E-10
WSW	8.081E-08	2.733E-08	1.403E-08	6.671E-09	2.396E-09	1.188E-09	6.997E-10	4.582E-10	3.224E-10	2.389E-10	1.841E-10
W	9.351E-08	3.162E-08	1.624E-08	7.719E-09	2.773E-09	1.375E-09	8.096E-10	5.301E-10	3.730E-10	2.764E-10	2.130E-10
WNW	1.591E-07	5.381E-08	2.763E-08	1.314E-08	4.718E-09	2.340E-09	1.378E-09	9.022E-10	6.348E-10	4.704E-10	3.625E-10
NW	1.700E-07	5.750E-08	2.952E-08	1.404E-08	5.042E-09	2.500E-09	1.472E-09	9.640E-10	6.783E-10	5.027E-10	3.874E-10
NNW	1.166E-07	3.944E-08	2.025E-08	9.627E-09	3.458E-09	1.715E-09	1.010E-09	6.612E-10	4.652E-10	3.448E-10	2.657E-10
N	1.510E-07	5.107E-08	2.622E-08	1.247E-08	4.478E-09	2.221E-09	1.308E-09	8.562E-10	6.025E-10	4.465E-10	3.441E-10
NNE	8.533E-08	2.886E-08	1.482E-08	7.044E-09	2.530E-09	1.255E-09	7.388E-10	4.838E-10	3.404E-10	2.523E-10	1.944E-10
NE	9.605E-08	3.248E-08	1.668E-08	7.929E-09	2.848E-09	1.412E-09	8.316E-10	5.445E-10	3.832E-10	2.840E-10	2.188E-10
ENE	7.166E-08	2.423E-08	1.244E-08	5.915E-09	2.125E-09	1.054E-09	6.204E-10	4.062E-10	2.859E-10	2.118E-10	1.633E-10
E	6.055E-08	2.048E-08	1.051E-08	4.998E-09	1.795E-09	8.903E-10	5.242E-10	3.433E-10	2.415E-10	1.790E-10	1.379E-10
ESE	1.252E-07	4.233E-08	2.173E-08	1.033E-08	3.711E-09	1.841E-09	1.084E-09	7.096E-10	4.993E-10	3.700E-10	2.852E-10
SE	2.594E-07	8.771E-08	4.504E-08	2.141E-08	7.691E-09	3.814E-09	2.246E-09	1.470E-09	1.035E-09	7.668E-10	5.909E-10
SSE	2.520E-07	8.521E-08	4.375E-08	2.080E-08	7.471E-09	3.705E-09	2.182E-09	1.428E-09	1.005E-09	7.449E-10	5.740E-10

DIRECTION	DISTANCES IN MILES										
FROM SITE	5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
S	5.556E-10	2.468E-10	1.495E-10	7.557E-11	4.574E-11	3.066E-11	2.197E-11	1.650E-11	1.283E-11	1.025E-11	8.364E-12
SSW	3.994E-10	1.774E-10	1.075E-10	5.432E-11	3.288E-11	2.204E-11	1.580E-11	1.186E-11	9.222E-12	7.367E-12	6.013E-12
SW	1.215E-10	5.398E-11	3.270E-11	1.653E-11	1.000E-11	6.707E-12	4.806E-12	3.609E-12	2.806E-12	2.241E-12	1.829E-12
WSW	1.463E-10	6.498E-11	3.936E-11	1.989E-11	1.204E-11	8.073E-12	5.785E-12	4.344E-12	3.377E-12	2.698E-12	2.202E-12
W	1.692E-10	7.518E-11	4.554E-11	2.302E-11	1.393E-11	9.342E-12	6.694E-12	5.026E-12	3.908E-12	3.122E-12	2.548E-12
WNW	2.880E-10	1.279E-10	7.750E-11	3.917E-11	2.371E-11	1.590E-11	1.139E-11	8.553E-12	6.651E-12	5.313E-12	4.336E-12
NW	3.078E-10	1.367E-10	8.282E-11	4.186E-11	2.534E-11	1.699E-11	1.217E-11	9.140E-12	7.106E-12	5.677E-12	4.633E-12
NNW	2.111E-10	9.377E-11	5.680E-11	2.871E-11	1.738E-11	1.165E-11	8.348E-12	6.269E-12	4.874E-12	3.893E-12	3.178E-12
N	2.733E-10	1.214E-10	7.356E-11	3.718E-11	2.250E-11	1.509E-11	1.081E-11	8.118E-12	6.312E-12	5.042E-12	4.115E-12
NNE	1.544E-10	6.861E-11	4.156E-11	2.101E-11	1.271E-11	8.525E-12	6.108E-12	4.587E-12	3.566E-12	2.849E-12	2.325E-12
NE	1.738E-10	7.723E-11	4.678E-11	2.365E-11	1.431E-11	9.595E-12	6.876E-12	5.163E-12	4.014E-12	3.207E-12	2.617E-12
ENE	1.297E-10	5.761E-11	3.490E-11	1.764E-11	1.068E-11	7.159E-12	5.129E-12	3.852E-12	2.995E-12	2.392E-12	1.953E-12
E	1.096E-10	4.868E-11	2.949E-11	1.491E-11	9.022E-12	6.049E-12	4.334E-12	3.255E-12	2.531E-12	2.021E-12	1.650E-12
ESE	2.265E-10	1.006E-10	6.096E-11	3.081E-11	1.865E-11	1.250E-11	8.960E-12	6.728E-12	5.231E-12	4.179E-12	3.411E-12
SE	4.695E-10	2.085E-10	1.263E-10	6.385E-11	3.865E-11	2.591E-11	1.857E-11	1.394E-11	1.084E-11	8.659E-12	7.068E-12
SSE	4.560E-10	2.026E-10	1.227E-10	6.203E-11	3.754E-11	2.517E-11	1.804E-11	1.354E-11	1.053E-11	8.412E-12	6.866E-12

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) BY DOWNWIND SECTORS **********

DIRECTION	SEGMENT BOUNDARIES IN MILES									
FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	5.209E-08	1.067E-08	2.786E-09	1.251E-09	7.078E-10	2.722E-10	7.874E-11	3.121E-11	1.666E-11	1.031E-11
SSW	3.745E-08	7.671E-09	2.003E-09	8.994E-10	5.088E-10	1.957E-10	5.660E-11	2.243E-11	1.198E-11	7.415E-12
SW	1.139E-08	2.334E-09	6.092E-10	2.736E-10	1.548E-10	5.953E-11	1.722E-11	6.825E-12	3.645E-12	2.256E-12
WSW	1.371E-08	2.809E-09	7.334E-10	3.294E-10	1.863E-10	7.165E-11	2.073E-11	8.216E-12	4.387E-12	2.716E-12
W	1.587E-08	3.251E-09	8.486E-10	3.811E-10	2.156E-10	8.291E-11	2.399E-11	9.507E-12	5.077E-12	3.142E-12
WNW	2.701E-08	5.532E-09	1.444E-09	6.486E-10	3.669E-10	1.411E-10	4.082E-11	1.618E-11	8.639E-12	5.347E-12
NW	2.886E-08	5.911E-09	1.543E-09	6.930E-10	3.921E-10	1.508E-10	4.362E-11	1.729E-11	9.232E-12	5.714E-12
NNW	1.979E-08	4.054E-09	1.058E-09	4.753E-10	2.689E-10	1.034E-10	2.992E-11	1.186E-11	6.332E-12	3.919E-12
N	2.563E-08	5.250E-09	1.371E-09	6.155E-10	3.482E-10	1.339E-10	3.874E-11	1.535E-11	8.199E-12	5.075E-12
NNE	1.448E-08	2.966E-09	7.744E-10	3.478E-10	1.968E-10	7.566E-11	2.189E-11	8.675E-12	4.633E-12	2.867E-12
NE	1.630E-08	3.339E-09	8.717E-10	3.915E-10	2.215E-10	8.517E-11	2.464E-11	9.765E-12	5.215E-12	3.228E-12
ENE	1.216E-08	2.491E-09	6.503E-10	2.921E-10	1.652E-10	6.354E-11	1.838E-11	7.285E-12	3.890E-12	2.408E-12
E	1.028E-08	2.105E-09	5.495E-10	2.468E-10	1.396E-10	5.369E-11	1.553E-11	6.156E-12	3.287E-12	2.035E-12
ESE	2.124E-08	4.351E-09	1.136E-09	5.102E-10	2.886E-10	1.110E-10	3.211E-11	1.273E-11	6.796E-12	4.206E-12
SE	4.402E-08	9.017E-09	2.354E-09	1.057E-09	5.980E-10	2.300E-10	6.653E-11	2.637E-11	1.408E-11	8.716E-12
SSE	4.276E-08	8.759E-09	2.287E-09	1.027E-09	5.810E-10	2.234E-10	6.463E-11	2.562E-11	1.368E-11	8.467E-12

VENTS GROUND LEVEL RELEASES - JAN-MAR 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION FROM SITE	DIST. (MI)	X/Q (SEC/M3) NO DECAY UNDEPLETED	X/Q (SEC/M3) 2.26 DAY DECAY UNDEPLETED	X/Q (SEC/M3) 8.0 DAY DECAY DEPLETED	D/Q (PER SQ.METER)
A	Site Boundary	S	.80	7.4E-06	7.4E-06	6.6E-06	4.5E-08
A	Site Boundary	SSW	.82	6.1E-06	6.1E-06	5.4E-06	3.0E-08
A	Site Boundary	SW	.97	1.7E-06	1.7E-06	1.5E-06	5.9E-09
A	Site Boundary	WSW	.93	1.9E-06	1.9E-06	1.7E-06	8.2E-09
A	Site Boundary	W	.91	1.9E-06	1.9E-06	1.7E-06	9.8E-09
A	Site Boundary	WNW	.94	2.9E-06	2.9E-06	2.5E-06	1.6E-08
A	Site Boundary	NW	.81	4.4E-06	4.4E-06	3.9E-06	2.4E-08
A	Site Boundary	NNW	.69	8.5E-06	8.4E-06	7.6E-06	2.3E-08
A	Site Boundary	N	.67	1.1E-05	1.1E-05	1.0E-05	3.1E-08
A	Site Boundary	NNE	.60	5.9E-06	5.9E-06	5.3E-06	2.1E-08
A	Site Boundary	NE	.62	4.7E-06	4.7E-06	4.2E-06	2.3E-08
A	Site Boundary	ENE	.59	5.8E-06	5.8E-06	5.2E-06	1.9E-08
A	Site Boundary	E	.53	5.1E-06	5.1E-06	4.6E-06	1.9E-08
A	Site Boundary	ESE	.54	8.8E-06	8.8E-06	8.0E-06	3.8E-08
A	Site Boundary	SE	.65	8.3E-06	8.3E-06	7.5E-06	5.7E-08
A	Site Boundary	SSE	.81	5.6E-06	5.6E-06	5.0E-06	3.6E-08
A	Nearest Res	SW	1.30	8.6E-07	8.6E-07	7.4E-07	2.8E-09
A	Nearest Res	WSW	1.80	4.2E-07	4.1E-07	3.5E-07	1.5E-09
A	Nearest Res	WNW	1.90	5.7E-07	5.6E-07	4.7E-07	2.6E-09
A	Nearest Res	NW	.90	3.4E-06	3.4E-06	3.0E-06	1.8E-08
A	Nearest Res	NNW	1.90	9.6E-07	9.5E-07	7.9E-07	1.9E-09
A	Nearest Cow	NNW	3.50	3.0E-07	2.9E-07	2.3E-07	4.7E-10
A	Nearest Garde	SW	2.20	2.7E-07	2.7E-07	2.2E-07	7.9E-10
A	Nearest Garde	WSW	1.80	4.2E-07	4.1E-07	3.5E-07	1.5E-09
A	Nearest Garde	WNW	1.90	5.7E-07	5.6E-07	4.7E-07	2.6E-09
A	Nearest Garde	NNW	3.00	3.9E-07	3.9E-07	3.1E-07	6.6E-10

Atmospheric Diffusion Estimates

Ground Level Releases

April-June 2019

VENTS GROUND LEVEL RELEASES - APR-JUN 2019
NO DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	3.578E-05	1.243E-05	6.706E-06	3.359E-06	1.320E-06	7.030E-07	4.396E-07	3.034E-07	2.238E-07	1.731E-07	1.387E-07
SSW	1.595E-05	5.775E-06	3.120E-06	1.554E-06	6.005E-07	3.159E-07	1.956E-07	1.339E-07	9.804E-08	7.534E-08	6.003E-08
SW	1.353E-05	4.747E-06	2.582E-06	1.298E-06	5.076E-07	2.694E-07	1.680E-07	1.157E-07	8.516E-08	6.574E-08	5.259E-08
WSW	1.010E-05	3.725E-06	2.001E-06	9.910E-07	3.796E-07	1.983E-07	1.222E-07	8.325E-08	6.072E-08	4.650E-08	3.693E-08
W	1.941E-05	7.105E-06	3.846E-06	1.914E-06	7.389E-07	3.884E-07	2.404E-07	1.645E-07	1.205E-07	9.255E-08	7.373E-08
WNW	2.107E-05	7.751E-06	4.174E-06	2.070E-06	7.951E-07	4.163E-07	2.568E-07	1.753E-07	1.280E-07	9.812E-08	7.801E-08
NW	1.854E-05	6.780E-06	3.655E-06	1.816E-06	6.987E-07	3.664E-07	2.264E-07	1.546E-07	1.130E-07	8.673E-08	6.901E-08
NNW	2.785E-05	1.001E-05	5.463E-06	2.737E-06	1.076E-06	5.736E-07	3.592E-07	2.482E-07	1.832E-07	1.419E-07	1.138E-07
N	4.084E-05	1.437E-05	7.873E-06	3.963E-06	1.577E-06	8.481E-07	5.347E-07	3.717E-07	2.758E-07	2.144E-07	1.726E-07
NNE	4.373E-05	1.472E-05	7.930E-06	3.985E-06	1.607E-06	8.726E-07	5.541E-07	3.874E-07	2.888E-07	2.255E-07	1.822E-07
NE	3.061E-05	9.844E-06	5.226E-06	2.628E-06	1.076E-06	5.904E-07	3.779E-07	2.658E-07	1.992E-07	1.562E-07	1.267E-07
ENE	1.084E-05	3.685E-06	2.038E-06	1.038E-06	4.136E-07	2.226E-07	1.403E-07	9.749E-08	7.231E-08	5.620E-08	4.523E-08
E	2.353E-05	7.460E-06	3.950E-06	1.988E-06	8.212E-07	4.530E-07	2.912E-07	2.055E-07	1.545E-07	1.214E-07	9.872E-08
ESE	3.426E-05	1.074E-05	5.650E-06	2.840E-06	1.180E-06	6.536E-07	4.214E-07	2.981E-07	2.245E-07	1.768E-07	1.440E-07
SE	3.058E-05	9.681E-06	5.115E-06	2.573E-06	1.062E-06	5.860E-07	3.766E-07	2.658E-07	1.997E-07	1.570E-07	1.276E-07
SSE	4.064E-05	1.304E-05	6.866E-06	3.438E-06	1.409E-06	7.729E-07	4.947E-07	3.480E-07	2.609E-07	2.046E-07	1.660E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	1.142E-07	5.758E-08	3.679E-08	2.067E-08	1.378E-08	1.009E-08	7.825E-09	6.319E-09	5.255E-09	4.468E-09	3.866E-09
SSW	4.919E-08	2.428E-08	1.527E-08	8.383E-09	5.492E-09	3.962E-09	3.038E-09	2.428E-09	2.000E-09	1.687E-09	1.449E-09
SW	4.325E-08	2.167E-08	1.378E-08	7.688E-09	5.098E-09	3.714E-09	2.870E-09	2.310E-09	1.915E-09	1.624E-09	1.402E-09
WSW	3.017E-08	1.472E-08	9.175E-09	4.969E-09	3.222E-09	2.305E-09	1.755E-09	1.394E-09	1.142E-09	9.583E-10	8.193E-10
W	6.041E-08	2.980E-08	1.873E-08	1.028E-08	6.728E-09	4.852E-09	3.717E-09	2.970E-09	2.446E-09	2.062E-09	1.770E-09
WNW	6.380E-08	3.124E-08	1.953E-08	1.062E-08	6.912E-09	4.959E-09	3.783E-09	3.011E-09	2.472E-09	2.077E-09	1.779E-09
NW	5.647E-08	2.773E-08	1.737E-08	9.481E-09	6.184E-09	4.446E-09	3.398E-09	2.708E-09	2.226E-09	1.873E-09	1.606E-09
NNW	9.379E-08	4.741E-08	3.036E-08	1.711E-08	1.143E-08	8.371E-09	6.499E-09	5.251E-09	4.368E-09	3.715E-09	3.215E-09
N	1.428E-07	7.320E-08	4.735E-08	2.706E-08	1.827E-08	1.349E-08	1.054E-08	8.568E-09	7.162E-09	6.118E-09	5.315E-09
NNE	1.513E-07	7.853E-08	5.126E-08	2.969E-08	2.024E-08	1.506E-08	1.185E-08	9.678E-09	8.129E-09	6.973E-09	6.081E-09
NE	1.055E-07	5.550E-08	3.656E-08	2.145E-08	1.474E-08	1.105E-08	8.738E-09	7.173E-09	6.049E-09	5.208E-09	4.557E-09
ENE	3.740E-08	1.913E-08	1.235E-08	7.041E-09	4.742E-09	3.495E-09	2.728E-09	2.214E-09	1.848E-09	1.577E-09	1.369E-09
E	8.237E-08	4.363E-08	2.888E-08	1.705E-08	1.178E-08	8.853E-09	7.021E-09	5.776E-09	4.880E-09	4.208E-09	3.687E-09
ESE	1.203E-07	6.402E-08	4.252E-08	2.522E-08	1.747E-08	1.317E-08	1.046E-08	8.622E-09	7.295E-09	6.298E-09	5.524E-09
SE	1.065E-07	5.640E-08	3.732E-08	2.204E-08	1.522E-08	1.144E-08	9.073E-09	7.465E-09	6.307E-09	5.439E-09	4.766E-09
SSE	1.383E-07	7.277E-08	4.796E-08	2.816E-08	1.937E-08	1.453E-08	1.150E-08	9.443E-09	7.968E-09	6.862E-09	6.007E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	6.492E-06	1.499E-06	4.554E-07	2.272E-07	1.398E-07	6.093E-08	2.119E-08	1.017E-08	6.344E-09	4.478E-09
SSW	3.014E-06	6.860E-07	2.030E-07	9.963E-08	6.055E-08	2.581E-08	8.629E-09	4.000E-09	2.439E-09	1.692E-09
SW	2.492E-06	5.773E-07	1.741E-07	8.648E-08	5.303E-08	2.296E-08	7.891E-09	3.746E-09	2.320E-09	1.628E-09
WSW	1.935E-06	4.349E-07	1.269E-07	6.174E-08	3.726E-08	1.569E-08	5.127E-09	2.330E-09	1.401E-09	9.613E-10
W	3.712E-06	8.444E-07	2.495E-07	1.224E-07	7.437E-08	3.168E-08	1.058E-08	4.898E-09	2.984E-09	2.067E-09
WNW	4.034E-06	9.101E-07	2.667E-07	1.301E-07	7.871E-08	3.327E-08	1.095E-08	5.009E-09	3.026E-09	2.084E-09
NW	3.532E-06	7.992E-07	2.350E-07	1.149E-07	6.962E-08	2.951E-08	9.770E-09	4.490E-09	2.722E-09	1.879E-09
NNW	5.262E-06	1.222E-06	3.720E-07	1.860E-07	1.147E-07	5.014E-08	1.753E-08	8.437E-09	5.271E-09	3.723E-09
N	7.579E-06	1.783E-06	5.531E-07	2.798E-07	1.740E-07	7.718E-08	2.766E-08	1.359E-08	8.597E-09	6.130E-09
NNE	7.687E-06	1.809E-06	5.724E-07	2.929E-07	1.836E-07	8.257E-08	3.028E-08	1.515E-08	9.707E-09	6.985E-09
NE	5.097E-06	1.205E-06	3.897E-07	2.018E-07	1.276E-07	5.820E-08	2.183E-08	1.111E-08	7.192E-09	5.216E-09
ENE	1.959E-06	4.674E-07	1.451E-07	7.337E-08	4.558E-08	2.018E-08	7.199E-09	3.521E-09	2.221E-09	1.580E-09
E	3.858E-06	9.168E-07	3.001E-07	1.565E-07	9.940E-08	4.568E-08	1.733E-08	8.900E-09	5.791E-09	4.214E-09
ESE	5.532E-06	1.315E-06	4.340E-07	2.274E-07	1.449E-07	6.697E-08	2.562E-08	1.323E-08	8.643E-09	6.307E-09
SE	5.000E-06	1.186E-06	3.881E-07	2.023E-07	1.285E-07	5.905E-08	2.240E-08	1.150E-08	7.483E-09	5.447E-09
SSE	6.715E-06	1.577E-06	5.102E-07	2.644E-07	1.672E-07	7.630E-08	2.865E-08	1.461E-08	9.468E-09	6.873E-09

VENTS GROUND LEVEL RELEASES - APR-JUN 2019
2.260 DAY DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	3.574E-05	1.241E-05	6.687E-06	3.347E-06	1.312E-06	6.975E-07	4.353E-07	2.998E-07	2.206E-07	1.703E-07	1.361E-07
SSW	1.593E-05	5.766E-06	3.113E-06	1.549E-06	5.977E-07	3.139E-07	1.940E-07	1.326E-07	9.694E-08	7.437E-08	5.916E-08
SW	1.352E-05	4.737E-06	2.574E-06	1.292E-06	5.043E-07	2.671E-07	1.662E-07	1.142E-07	8.385E-08	6.458E-08	5.155E-08
WSW	1.009E-05	3.720E-06	1.996E-06	9.880E-07	3.778E-07	1.971E-07	1.212E-07	8.247E-08	6.005E-08	4.592E-08	3.641E-08
W	1.940E-05	7.093E-06	3.836E-06	1.908E-06	7.351E-07	3.857E-07	2.383E-07	1.628E-07	1.190E-07	9.124E-08	7.256E-08
WNW	2.106E-05	7.742E-06	4.166E-06	2.066E-06	7.922E-07	4.143E-07	2.553E-07	1.740E-07	1.269E-07	9.719E-08	7.718E-08
NW	1.853E-05	6.773E-06	3.648E-06	1.812E-06	6.964E-07	3.648E-07	2.251E-07	1.536E-07	1.121E-07	8.594E-08	6.830E-08
NNW	2.782E-05	9.995E-06	5.449E-06	2.727E-06	1.070E-06	5.696E-07	3.560E-07	2.455E-07	1.809E-07	1.398E-07	1.119E-07
N	4.080E-05	1.434E-05	7.850E-06	3.947E-06	1.568E-06	8.413E-07	5.293E-07	3.671E-07	2.718E-07	2.109E-07	1.694E-07
NNE	4.367E-05	1.468E-05	7.899E-06	3.964E-06	1.594E-06	8.629E-07	5.463E-07	3.808E-07	2.830E-07	2.203E-07	1.775E-07
NE	3.056E-05	9.811E-06	5.200E-06	2.611E-06	1.066E-06	5.825E-07	3.714E-07	2.603E-07	1.944E-07	1.518E-07	1.227E-07
ENE	1.083E-05	3.676E-06	2.030E-06	1.033E-06	4.107E-07	2.204E-07	1.386E-07	9.608E-08	7.108E-08	5.511E-08	4.424E-08
E	2.349E-05	7.433E-06	3.929E-06	1.975E-06	8.126E-07	4.467E-07	2.860E-07	2.011E-07	1.506E-07	1.179E-07	9.552E-08
ESE	3.419E-05	1.070E-05	5.619E-06	2.819E-06	1.167E-06	6.437E-07	4.133E-07	2.912E-07	2.184E-07	1.713E-07	1.389E-07
SE	3.053E-05	9.653E-06	5.093E-06	2.558E-06	1.053E-06	5.792E-07	3.711E-07	2.611E-07	1.956E-07	1.533E-07	1.243E-07
SSE	4.057E-05	1.300E-05	6.834E-06	3.417E-06	1.395E-06	7.628E-07	4.865E-07	3.410E-07	2.547E-07	1.990E-07	1.609E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	1.119E-07	5.577E-08	3.524E-08	1.936E-08	1.262E-08	9.027E-09	6.848E-09	5.409E-09	4.400E-09	3.661E-09	3.101E-09
SSW	4.840E-08	2.369E-08	1.478E-08	7.975E-09	5.138E-09	3.645E-09	2.748E-09	2.160E-09	1.750E-09	1.452E-09	1.226E-09
SW	4.230E-08	2.094E-08	1.316E-08	7.172E-09	4.645E-09	3.305E-09	2.495E-09	1.961E-09	1.588E-09	1.316E-09	1.110E-09
WSW	2.970E-08	1.437E-08	8.888E-09	4.737E-09	3.023E-09	2.129E-09	1.595E-09	1.247E-09	1.006E-09	8.311E-10	6.996E-10
W	5.934E-08	2.900E-08	1.807E-08	9.731E-09	6.256E-09	4.430E-09	3.333E-09	2.615E-09	2.115E-09	1.752E-09	1.477E-09
WNW	6.304E-08	3.068E-08	1.906E-08	1.024E-08	6.584E-09	4.666E-09	3.516E-09	2.765E-09	2.242E-09	1.862E-09	1.575E-09
NW	5.583E-08	2.725E-08	1.697E-08	9.153E-09	5.900E-09	4.191E-09	3.165E-09	2.493E-09	2.025E-09	1.684E-09	1.427E-09
NNW	9.206E-08	4.609E-08	2.923E-08	1.615E-08	1.058E-08	7.600E-09	5.789E-09	4.591E-09	3.749E-09	3.130E-09	2.661E-09
N	1.399E-07	7.091E-08	4.536E-08	2.536E-08	1.675E-08	1.211E-08	9.268E-09	7.377E-09	6.043E-09	5.059E-09	4.310E-09
NNE	1.469E-07	7.505E-08	4.823E-08	2.707E-08	1.789E-08	1.292E-08	9.862E-09	7.826E-09	6.389E-09	5.331E-09	4.524E-09
NE	1.018E-07	5.256E-08	3.398E-08	1.920E-08	1.273E-08	9.202E-09	7.029E-09	5.577E-09	4.549E-09	3.792E-09	3.214E-09
ENE	3.649E-08	1.844E-08	1.176E-08	6.538E-09	4.296E-09	3.091E-09	2.355E-09	1.866E-09	1.522E-09	1.268E-09	1.075E-09
E	7.940E-08	4.126E-08	2.679E-08	1.524E-08	1.014E-08	7.356E-09	5.633E-09	4.478E-09	3.660E-09	3.055E-09	2.593E-09
ESE	1.156E-07	6.026E-08	3.921E-08	2.233E-08	1.487E-08	1.078E-08	8.252E-09	6.555E-09	5.352E-09	4.462E-09	3.783E-09
SE	1.033E-07	5.389E-08	3.512E-08	2.012E-08	1.349E-08	9.852E-09	7.598E-09	6.083E-09	5.006E-09	4.207E-09	3.595E-09
SSE	1.335E-07	6.897E-08	4.462E-08	2.525E-08	1.675E-08	1.212E-08	9.269E-09	7.361E-09	6.010E-09	5.014E-09	4.254E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	6.475E-06	1.491E-06	4.510E-07	2.241E-07	1.373E-07	5.912E-08	1.989E-08	9.112E-09	5.436E-09	3.673E-09
SSW	3.007E-06	6.830E-07	2.014E-07	9.853E-08	5.968E-08	2.522E-08	8.225E-09	3.684E-09	2.172E-09	1.457E-09
SW	2.485E-06	5.739E-07	1.723E-07	8.517E-08	5.198E-08	2.223E-08	7.380E-09	3.338E-09	1.972E-09	1.320E-09
WSW	1.931E-06	4.331E-07	1.260E-07	6.107E-08	3.674E-08	1.534E-08	4.898E-09	2.154E-09	1.255E-09	8.342E-10
W	3.703E-06	8.404E-07	2.474E-07	1.209E-07	7.320E-08	3.088E-08	1.004E-08	4.478E-09	2.630E-09	1.758E-09
WNW	4.027E-06	9.073E-07	2.652E-07	1.291E-07	7.787E-08	3.271E-08	1.058E-08	4.717E-09	2.780E-09	1.868E-09
NW	3.526E-06	7.968E-07	2.337E-07	1.140E-07	6.891E-08	2.903E-08	9.445E-09	4.236E-09	2.507E-09	1.690E-09
NNW	5.250E-06	1.216E-06	3.687E-07	1.837E-07	1.128E-07	4.881E-08	1.658E-08	7.670E-09	4.612E-09	3.140E-09
N	7.558E-06	1.774E-06	5.476E-07	2.758E-07	1.708E-07	7.487E-08	2.598E-08	1.221E-08	7.409E-09	5.073E-09
NNE	7.658E-06	1.796E-06	5.645E-07	2.871E-07	1.788E-07	7.909E-08	2.769E-08	1.302E-08	7.861E-09	5.346E-09
NE	5.074E-06	1.194E-06	3.832E-07	1.970E-07	1.236E-07	5.525E-08	1.961E-08	9.273E-09	5.600E-09	3.802E-09
ENE	1.953E-06	4.643E-07	1.434E-07	7.214E-08	4.459E-08	1.948E-08	6.702E-09	3.118E-09	1.875E-09	1.272E-09
E	3.839E-06	9.082E-07	2.949E-07	1.526E-07	9.619E-08	4.330E-08	1.554E-08	7.410E-09	4.496E-09	3.063E-09
ESE	5.503E-06	1.302E-06	4.259E-07	2.213E-07	1.399E-07	6.320E-08	2.277E-08	1.086E-08	6.581E-09	4.474E-09
SE	4.980E-06	1.177E-06	3.826E-07	1.982E-07	1.251E-07	5.654E-08	2.050E-08	9.919E-09	6.105E-09	4.217E-09
SSE	6.686E-06	1.563E-06	5.020E-07	2.582E-07	1.621E-07	7.249E-08	2.577E-08	1.222E-08	7.392E-09	5.028E-09

VENTS GROUND LEVEL RELEASES - APR-JUN 2019
8.000 DAY DECAY, DEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	3.385E-05	1.135E-05	5.971E-06	2.938E-06	1.119E-06	5.808E-07	3.551E-07	2.402E-07	1.739E-07	1.323E-07	1.043E-07
SSW	1.509E-05	5.271E-06	2.778E-06	1.359E-06	5.093E-07	2.611E-07	1.581E-07	1.061E-07	7.626E-08	5.762E-08	4.520E-08
SW	1.280E-05	4.333E-06	2.299E-06	1.134E-06	4.303E-07	2.225E-07	1.357E-07	9.155E-08	6.616E-08	5.021E-08	3.954E-08
WSW	9.556E-06	3.401E-06	1.782E-06	8.667E-07	3.219E-07	1.639E-07	9.874E-08	6.595E-08	4.723E-08	3.557E-08	2.781E-08
W	1.837E-05	6.485E-06	3.425E-06	1.674E-06	6.266E-07	3.210E-07	1.943E-07	1.303E-07	9.366E-08	7.076E-08	5.549E-08
WNW	1.994E-05	7.076E-06	3.717E-06	1.811E-06	6.745E-07	3.442E-07	2.077E-07	1.389E-07	9.964E-08	7.512E-08	5.880E-08
NW	1.755E-05	6.190E-06	3.255E-06	1.588E-06	5.928E-07	3.030E-07	1.831E-07	1.226E-07	8.800E-08	6.641E-08	5.202E-08
NNW	2.635E-05	9.139E-06	4.865E-06	2.393E-06	9.125E-07	4.740E-07	2.902E-07	1.965E-07	1.425E-07	1.084E-07	8.561E-08
N	3.864E-05	1.312E-05	7.010E-06	3.465E-06	1.337E-06	7.007E-07	4.319E-07	2.942E-07	2.143E-07	1.638E-07	1.298E-07
NNE	4.137E-05	1.344E-05	7.059E-06	3.483E-06	1.362E-06	7.203E-07	4.471E-07	3.062E-07	2.241E-07	1.720E-07	1.368E-07
NE	2.896E-05	8.981E-06	4.650E-06	2.296E-06	9.116E-07	4.870E-07	3.046E-07	2.099E-07	1.543E-07	1.189E-07	9.494E-08
ENE	1.025E-05	3.363E-06	1.814E-06	9.071E-07	3.506E-07	1.838E-07	1.133E-07	7.712E-08	5.615E-08	4.290E-08	3.398E-08
E	2.226E-05	6.805E-06	3.514E-06	1.737E-06	6.953E-07	3.736E-07	2.347E-07	1.622E-07	1.197E-07	9.244E-08	7.394E-08
ESE	3.241E-05	9.796E-06	5.027E-06	2.481E-06	9.990E-07	5.389E-07	3.395E-07	2.352E-07	1.738E-07	1.345E-07	1.077E-07
SE	2.893E-05	8.833E-06	4.553E-06	2.248E-06	9.001E-07	4.836E-07	3.038E-07	2.100E-07	1.549E-07	1.197E-07	9.577E-08
SSE	3.844E-05	1.190E-05	6.110E-06	3.005E-06	1.193E-06	6.376E-07	3.988E-07	2.749E-07	2.022E-07	1.558E-07	1.244E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	8.466E-08	4.022E-08	2.441E-08	1.261E-08	7.844E-09	5.401E-09	3.966E-09	3.045E-09	2.415E-09	1.963E-09	1.628E-09
SSW	3.650E-08	1.700E-08	1.016E-08	5.139E-09	3.147E-09	2.140E-09	1.556E-09	1.185E-09	9.330E-10	7.539E-10	6.217E-10
SW	3.204E-08	1.513E-08	9.137E-09	4.686E-09	2.899E-09	1.987E-09	1.453E-09	1.112E-09	8.792E-10	7.128E-10	5.896E-10
WSW	2.239E-08	1.031E-08	6.109E-09	3.048E-09	1.848E-09	1.247E-09	9.004E-10	6.815E-10	5.338E-10	4.294E-10	3.526E-10
W	4.480E-08	2.085E-08	1.246E-08	6.291E-09	3.848E-09	2.615E-09	1.899E-09	1.445E-09	1.137E-09	9.178E-10	7.562E-10
WNW	4.739E-08	2.191E-08	1.303E-08	6.538E-09	3.981E-09	2.696E-09	1.954E-09	1.483E-09	1.165E-09	9.398E-10	7.737E-10
NW	4.196E-08	1.945E-08	1.160E-08	5.837E-09	3.563E-09	2.419E-09	1.756E-09	1.335E-09	1.050E-09	8.482E-10	6.991E-10
NNW	6.954E-08	3.316E-08	2.017E-08	1.046E-08	6.523E-09	4.501E-09	3.311E-09	2.545E-09	2.022E-09	1.646E-09	1.366E-09
N	1.058E-07	5.114E-08	3.142E-08	1.651E-08	1.040E-08	7.228E-09	5.349E-09	4.133E-09	3.296E-09	2.693E-09	2.243E-09
NNE	1.118E-07	5.464E-08	3.383E-08	1.797E-08	1.139E-08	7.956E-09	5.907E-09	4.576E-09	3.656E-09	2.991E-09	2.494E-09
NE	7.787E-08	3.852E-08	2.404E-08	1.291E-08	8.241E-09	5.785E-09	4.312E-09	3.350E-09	2.683E-09	2.200E-09	1.837E-09
ENE	2.768E-08	1.335E-08	8.182E-09	4.286E-09	2.691E-09	1.866E-09	1.378E-09	1.063E-09	8.464E-10	6.905E-10	5.742E-10
E	6.076E-08	3.027E-08	1.898E-08	1.026E-08	6.578E-09	4.633E-09	3.462E-09	2.696E-09	2.163E-09	1.776E-09	1.485E-09
ESE	8.864E-08	4.435E-08	2.790E-08	1.513E-08	9.725E-09	6.860E-09	5.132E-09	3.999E-09	3.211E-09	2.637E-09	2.206E-09
SE	7.871E-08	3.924E-08	2.464E-08	1.334E-08	8.572E-09	6.050E-09	4.532E-09	3.537E-09	2.844E-09	2.341E-09	1.962E-09
SSE	1.020E-07	5.051E-08	3.155E-08	1.695E-08	1.083E-08	7.609E-09	5.675E-09	4.412E-09	3.535E-09	2.899E-09	2.422E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	5.818E-06	1.284E-06	3.693E-07	1.770E-07	1.053E-07	4.307E-08	1.311E-08	5.479E-09	3.068E-09	1.973E-09
SSW	2.702E-06	5.879E-07	1.647E-07	7.767E-08	4.566E-08	1.829E-08	5.370E-09	2.175E-09	1.195E-09	7.580E-10
SW	2.233E-06	4.944E-07	1.412E-07	6.734E-08	3.992E-08	1.622E-08	4.881E-09	2.017E-09	1.121E-09	7.165E-10
WSW	1.735E-06	3.728E-07	1.030E-07	4.814E-08	2.810E-08	1.113E-08	3.195E-09	1.268E-09	6.878E-10	4.319E-10
W	3.327E-06	7.236E-07	2.025E-07	9.541E-08	5.606E-08	2.244E-08	6.576E-09	2.658E-09	1.457E-09	9.228E-10
WNW	3.617E-06	7.803E-07	2.166E-07	1.015E-07	5.941E-08	2.363E-08	6.844E-09	2.742E-09	1.497E-09	9.451E-10
NW	3.166E-06	6.853E-07	1.909E-07	8.966E-08	5.256E-08	2.096E-08	6.106E-09	2.459E-09	1.347E-09	8.529E-10
NNW	4.716E-06	1.047E-06	3.018E-07	1.450E-07	8.642E-08	3.547E-08	1.087E-08	4.564E-09	2.565E-09	1.653E-09
N	6.791E-06	1.527E-06	4.485E-07	2.179E-07	1.310E-07	5.452E-08	1.711E-08	7.322E-09	4.162E-09	2.705E-09
NNE	6.887E-06	1.548E-06	4.636E-07	2.277E-07	1.379E-07	5.810E-08	1.857E-08	8.052E-09	4.606E-09	3.004E-09
NE	4.566E-06	1.031E-06	3.153E-07	1.567E-07	9.573E-08	4.083E-08	1.331E-08	5.851E-09	3.371E-09	2.209E-09
ENE	1.755E-06	4.001E-07	1.176E-07	5.709E-08	3.429E-08	1.424E-08	4.443E-09	1.891E-09	1.071E-09	6.936E-10
E	3.456E-06	7.838E-07	2.427E-07	1.215E-07	7.454E-08	3.203E-08	1.056E-08	4.683E-09	2.712E-09	1.783E-09
ESE	4.955E-06	1.124E-06	3.510E-07	1.764E-07	1.086E-07	4.688E-08	1.557E-08	6.933E-09	4.023E-09	2.647E-09
SE	4.480E-06	1.015E-06	3.142E-07	1.573E-07	9.654E-08	4.152E-08	1.373E-08	6.115E-09	3.557E-09	2.350E-09
SSE	6.016E-06	1.349E-06	4.129E-07	2.053E-07	1.254E-07	5.354E-08	1.748E-08	7.695E-09	4.439E-09	2.911E-09

VENTS GROUND LEVEL RELEASES - APR-JUN 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) AT FIXED POINTS BY DOWNWIND SECTORS **********

DIRECTION	DISTANCES IN MILES										
FROM SITE	.25	.50	.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
S	2.474E-07	8.367E-08	4.296E-08	2.042E-08	7.336E-09	3.638E-09	2.142E-09	1.403E-09	9.870E-10	7.314E-10	5.637E-10
SSW	1.114E-07	3.767E-08	1.934E-08	9.196E-09	3.303E-09	1.638E-09	9.646E-10	6.316E-10	4.444E-10	3.294E-10	2.538E-10
SW	7.116E-08	2.406E-08	1.235E-08	5.873E-09	2.110E-09	1.046E-09	6.161E-10	4.034E-10	2.838E-10	2.104E-10	1.621E-10
WSW	7.320E-08	2.475E-08	1.271E-08	6.042E-09	2.170E-09	1.076E-09	6.337E-10	4.150E-10	2.920E-10	2.164E-10	1.668E-10
W	1.337E-07	4.521E-08	2.321E-08	1.104E-08	3.964E-09	1.966E-09	1.158E-09	7.580E-10	5.334E-10	3.953E-10	3.046E-10
WNW	1.782E-07	6.026E-08	3.094E-08	1.471E-08	5.283E-09	2.620E-09	1.543E-09	1.010E-09	7.108E-10	5.268E-10	4.060E-10
NW	1.676E-07	5.667E-08	2.910E-08	1.383E-08	4.969E-09	2.464E-09	1.451E-09	9.500E-10	6.685E-10	4.954E-10	3.818E-10
NNW	1.773E-07	5.997E-08	3.079E-08	1.464E-08	5.258E-09	2.608E-09	1.535E-09	1.005E-09	7.074E-10	5.242E-10	4.040E-10
N	2.646E-07	8.947E-08	4.594E-08	2.184E-08	7.845E-09	3.890E-09	2.291E-09	1.500E-09	1.055E-09	7.822E-10	6.028E-10
NNE	2.322E-07	7.852E-08	4.031E-08	1.917E-08	6.884E-09	3.414E-09	2.010E-09	1.316E-09	9.262E-10	6.864E-10	5.290E-10
NE	1.186E-07	4.012E-08	2.060E-08	9.792E-09	3.517E-09	1.744E-09	1.027E-09	6.726E-10	4.732E-10	3.507E-10	2.703E-10
ENE	5.102E-08	1.725E-08	8.858E-09	4.211E-09	1.513E-09	7.502E-10	4.417E-10	2.892E-10	2.035E-10	1.508E-10	1.162E-10
E	7.498E-08	2.536E-08	1.302E-08	6.189E-09	2.223E-09	1.103E-09	6.492E-10	4.251E-10	2.991E-10	2.217E-10	1.708E-10
ESE	9.775E-08	3.305E-08	1.697E-08	8.068E-09	2.898E-09	1.437E-09	8.463E-10	5.541E-10	3.899E-10	2.890E-10	2.227E-10
SE	1.195E-07	4.041E-08	2.075E-08	9.864E-09	3.543E-09	1.757E-09	1.035E-09	6.775E-10	4.767E-10	3.533E-10	2.723E-10
SSE	1.974E-07	6.675E-08	3.427E-08	1.629E-08	5.853E-09	2.903E-09	1.709E-09	1.119E-09	7.875E-10	5.836E-10	4.497E-10

DIRECTION	DISTANCES IN MILES										
FROM SITE	5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
S	4.478E-10	1.989E-10	1.205E-10	6.091E-11	3.686E-11	2.472E-11	1.771E-11	1.330E-11	1.034E-11	8.260E-12	6.742E-12
SSW	2.016E-10	8.958E-11	5.426E-11	2.743E-11	1.660E-11	1.113E-11	7.975E-12	5.988E-12	4.656E-12	3.719E-12	3.036E-12
SW	1.288E-10	5.721E-11	3.466E-11	1.752E-11	1.060E-11	7.108E-12	5.093E-12	3.825E-12	2.974E-12	2.375E-12	1.939E-12
WSW	1.325E-10	5.885E-11	3.565E-11	1.802E-11	1.091E-11	7.312E-12	5.240E-12	3.934E-12	3.059E-12	2.444E-12	1.995E-12
W	2.420E-10	1.075E-10	6.512E-11	3.291E-11	1.992E-11	1.336E-11	9.571E-12	7.187E-12	5.588E-12	4.464E-12	3.643E-12
WNW	3.225E-10	1.433E-10	8.679E-11	4.387E-11	2.655E-11	1.780E-11	1.276E-11	9.578E-12	7.447E-12	5.949E-12	4.856E-12
NW	3.033E-10	1.347E-10	8.162E-11	4.125E-11	2.497E-11	1.674E-11	1.200E-11	9.007E-12	7.004E-12	5.594E-12	4.566E-12
NNW	3.210E-10	1.426E-10	8.637E-11	4.365E-11	2.642E-11	1.772E-11	1.269E-11	9.532E-12	7.411E-12	5.920E-12	4.832E-12
N	4.788E-10	2.127E-10	1.289E-10	6.513E-11	3.942E-11	2.643E-11	1.894E-11	1.422E-11	1.106E-11	8.833E-12	7.209E-12
NNE	4.202E-10	1.867E-10	1.131E-10	5.716E-11	3.459E-11	2.320E-11	1.662E-11	1.248E-11	9.704E-12	7.751E-12	6.327E-12
NE	2.147E-10	9.538E-11	5.778E-11	2.920E-11	1.768E-11	1.185E-11	8.492E-12	6.377E-12	4.958E-12	3.960E-12	3.233E-12
ENE	9.234E-11	4.102E-11	2.485E-11	1.256E-11	7.602E-12	5.097E-12	3.652E-12	2.742E-12	2.132E-12	1.703E-12	1.390E-12
E	1.357E-10	6.029E-11	3.652E-11	1.846E-11	1.117E-11	7.490E-12	5.367E-12	4.030E-12	3.134E-12	2.503E-12	2.043E-12
ESE	1.769E-10	7.859E-11	4.761E-11	2.406E-11	1.456E-11	9.765E-12	6.997E-12	5.254E-12	4.085E-12	3.263E-12	2.663E-12
SE	2.163E-10	9.608E-11	5.820E-11	2.942E-11	1.781E-11	1.194E-11	8.554E-12	6.423E-12	4.994E-12	3.990E-12	3.256E-12
SSE	3.573E-10	1.587E-10	9.614E-11	4.860E-11	2.941E-11	1.972E-11	1.413E-11	1.061E-11	8.250E-12	6.590E-12	5.379E-12

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) BY DOWNWIND SECTORS **********

DIRECTION	SEGMENT BOUNDARIES IN MILES									
FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	4.199E-08	8.601E-09	2.245E-09	1.008E-09	5.705E-10	2.194E-10	6.347E-11	2.515E-11	1.343E-11	8.314E-12
SSW	1.891E-08	3.873E-09	1.011E-09	4.541E-10	2.569E-10	9.878E-11	2.858E-11	1.133E-11	6.048E-12	3.744E-12
SW	1.208E-08	2.473E-09	6.457E-10	2.900E-10	1.641E-10	6.309E-11	1.825E-11	7.234E-12	3.863E-12	2.391E-12
WSW	1.242E-08	2.544E-09	6.642E-10	2.983E-10	1.688E-10	6.490E-11	1.878E-11	7.441E-12	3.974E-12	2.460E-12
W	2.269E-08	4.648E-09	1.213E-09	5.449E-10	3.083E-10	1.186E-10	3.430E-11	1.359E-11	7.259E-12	4.493E-12
WNW	3.024E-08	6.194E-09	1.617E-09	7.263E-10	4.109E-10	1.580E-10	4.571E-11	1.812E-11	9.674E-12	5.988E-12
NW	2.844E-08	5.825E-09	1.521E-09	6.830E-10	3.864E-10	1.486E-10	4.299E-11	1.704E-11	9.098E-12	5.631E-12
NNW	3.009E-08	6.164E-09	1.609E-09	7.228E-10	4.089E-10	1.572E-10	4.549E-11	1.803E-11	9.627E-12	5.959E-12
N	4.490E-08	9.197E-09	2.401E-09	1.078E-09	6.100E-10	2.346E-10	6.787E-11	2.690E-11	1.436E-11	8.891E-12
NNE	3.940E-08	8.071E-09	2.107E-09	9.463E-10	5.353E-10	2.059E-10	5.956E-11	2.361E-11	1.261E-11	7.802E-12
NE	2.013E-08	4.124E-09	1.077E-09	4.835E-10	2.735E-10	1.052E-10	3.043E-11	1.206E-11	6.441E-12	3.986E-12
ENE	8.658E-09	1.773E-09	4.630E-10	2.079E-10	1.176E-10	4.524E-11	1.309E-11	5.187E-12	2.770E-12	1.714E-12
E	1.272E-08	2.606E-09	6.804E-10	3.056E-10	1.729E-10	6.648E-11	1.923E-11	7.623E-12	4.071E-12	2.520E-12
ESE	1.659E-08	3.398E-09	8.870E-10	3.984E-10	2.254E-10	8.667E-11	2.507E-11	9.937E-12	5.307E-12	3.285E-12
SE	2.028E-08	4.154E-09	1.084E-09	4.871E-10	2.755E-10	1.060E-10	3.065E-11	1.215E-11	6.488E-12	4.016E-12
SSE	3.350E-08	6.862E-09	1.791E-09	8.046E-10	4.552E-10	1.750E-10	5.064E-11	2.007E-11	1.072E-11	6.634E-12

VENTS GROUND LEVEL RELEASES - APR-JUN 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION FROM SITE	DIST. (MI)	X/Q (SEC/M3) NO DECAY UNDEPLETED	X/Q (SEC/M3) 2.26 DAY DECAY UNDEPLETED	X/Q (SEC/M3) 8.0 DAY DECAY DEPLETED	D/Q (PER SQ.METER)
A	Site Boundary	S	.80	5.8E-06	5.8E-06	5.1E-06	3.7E-08
A	Site Boundary	SSW	.82	2.5E-06	2.5E-06	2.2E-06	1.5E-08
A	Site Boundary	SW	.97	1.4E-06	1.4E-06	1.2E-06	6.3E-09
A	Site Boundary	WSW	.93	1.2E-06	1.2E-06	1.1E-06	7.4E-09
A	Site Boundary	W	.91	2.4E-06	2.4E-06	2.1E-06	1.4E-08
A	Site Boundary	WNW	.94	2.4E-06	2.4E-06	2.1E-06	1.7E-08
A	Site Boundary	NW	.81	3.0E-06	3.0E-06	2.7E-06	2.4E-08
A	Site Boundary	NNW	.69	6.2E-06	6.2E-06	5.6E-06	3.6E-08
A	Site Boundary	N	.67	9.2E-06	9.2E-06	8.3E-06	5.5E-08
A	Site Boundary	NNE	.60	1.1E-05	1.1E-05	1.0E-05	5.8E-08
A	Site Boundary	NE	.62	6.9E-06	6.9E-06	6.2E-06	2.8E-08
A	Site Boundary	ENE	.59	2.9E-06	2.9E-06	2.6E-06	1.3E-08
A	Site Boundary	E	.53	6.9E-06	6.9E-06	6.3E-06	2.3E-08
A	Site Boundary	ESE	.54	9.5E-06	9.5E-06	8.6E-06	2.9E-08
A	Site Boundary	SE	.65	6.4E-06	6.3E-06	5.7E-06	2.6E-08
A	Site Boundary	SSE	.81	5.7E-06	5.7E-06	5.0E-06	2.8E-08
A	Nearest Res	SW	1.30	7.0E-07	7.0E-07	6.0E-07	3.0E-09
A	Nearest Res	WSW	1.80	2.5E-07	2.5E-07	2.1E-07	1.4E-09
A	Nearest Res	WNW	1.90	4.7E-07	4.6E-07	3.9E-07	3.0E-09
A	Nearest Res	NW	.90	2.3E-06	2.3E-06	2.1E-06	1.8E-08
A	Nearest Res	NNW	1.90	6.4E-07	6.4E-07	5.3E-07	3.0E-09
A	Nearest Cow	NNW	3.50	1.8E-07	1.8E-07	1.4E-07	7.1E-10
A	Nearest Garde	SW	2.20	2.2E-07	2.2E-07	1.8E-07	8.3E-10
A	Nearest Garde	WSW	1.80	2.5E-07	2.5E-07	2.1E-07	1.4E-09
A	Nearest Garde	WNW	1.90	4.7E-07	4.6E-07	3.9E-07	3.0E-09
A	Nearest Garde	NNW	3.00	2.5E-07	2.5E-07	2.0E-07	1.0E-09

Atmospheric Diffusion Estimates

Ground Level Releases

January-June 2019

VENTS GROUND LEVEL RELEASES - JAN-JUN 2019
NO DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	4.209E-05	1.437E-05	7.698E-06	3.853E-06	1.529E-06	8.205E-07	5.162E-07	3.580E-07	2.652E-07	2.059E-07	1.655E-07
SSW	2.828E-05	1.007E-05	5.415E-06	2.697E-06	1.056E-06	5.616E-07	3.508E-07	2.419E-07	1.783E-07	1.378E-07	1.104E-07
SW	1.487E-05	5.269E-06	2.877E-06	1.446E-06	5.662E-07	3.007E-07	1.877E-07	1.293E-07	9.524E-08	7.356E-08	5.888E-08
WSW	1.292E-05	4.733E-06	2.568E-06	1.280E-06	4.948E-07	2.604E-07	1.614E-07	1.105E-07	8.100E-08	6.228E-08	4.965E-08
W	1.752E-05	6.433E-06	3.487E-06	1.736E-06	6.703E-07	3.525E-07	2.183E-07	1.494E-07	1.094E-07	8.408E-08	6.699E-08
WNW	2.275E-05	8.341E-06	4.525E-06	2.255E-06	8.715E-07	4.586E-07	2.842E-07	1.946E-07	1.426E-07	1.096E-07	8.738E-08
NW	2.294E-05	8.272E-06	4.477E-06	2.232E-06	8.715E-07	4.621E-07	2.881E-07	1.983E-07	1.460E-07	1.127E-07	9.015E-08
NNW	3.599E-05	1.195E-05	6.415E-06	3.226E-06	1.310E-06	7.144E-07	4.552E-07	3.191E-07	2.385E-07	1.866E-07	1.510E-07
N	5.058E-05	1.655E-05	8.835E-06	4.440E-06	1.818E-06	9.973E-07	6.384E-07	4.492E-07	3.367E-07	2.642E-07	2.143E-07
NNE	3.465E-05	1.142E-05	6.088E-06	3.055E-06	1.242E-06	6.782E-07	4.325E-07	3.034E-07	2.269E-07	1.776E-07	1.438E-07
NE	2.491E-05	8.122E-06	4.337E-06	2.183E-06	8.868E-07	4.836E-07	3.081E-07	2.160E-07	1.614E-07	1.262E-07	1.022E-07
ENE	1.747E-05	5.679E-06	3.051E-06	1.542E-06	6.274E-07	3.426E-07	2.185E-07	1.532E-07	1.146E-07	8.966E-08	7.260E-08
E	2.063E-05	6.497E-06	3.441E-06	1.734E-06	7.168E-07	3.955E-07	2.543E-07	1.795E-07	1.349E-07	1.061E-07	8.623E-08
ESE	3.182E-05	1.017E-05	5.397E-06	2.716E-06	1.117E-06	6.147E-07	3.943E-07	2.778E-07	2.085E-07	1.638E-07	1.330E-07
SE	3.343E-05	1.101E-05	5.869E-06	2.946E-06	1.196E-06	6.525E-07	4.158E-07	2.914E-07	2.178E-07	1.704E-07	1.379E-07
SSE	3.923E-05	1.285E-05	6.799E-06	3.401E-06	1.381E-06	7.528E-07	4.796E-07	3.361E-07	2.512E-07	1.965E-07	1.590E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	1.368E-07	6.976E-08	4.497E-08	2.560E-08	1.723E-08	1.271E-08	9.919E-09	8.053E-09	6.728E-09	5.744E-09	4.989E-09
SSW	9.087E-08	4.572E-08	2.918E-08	1.637E-08	1.090E-08	7.971E-09	6.179E-09	4.986E-09	4.144E-09	3.522E-09	3.046E-09
SW	4.844E-08	2.431E-08	1.548E-08	8.649E-09	5.742E-09	4.187E-09	3.238E-09	2.607E-09	2.162E-09	1.834E-09	1.584E-09
WSW	4.070E-08	2.013E-08	1.268E-08	6.973E-09	4.575E-09	3.304E-09	2.535E-09	2.027E-09	1.671E-09	1.410E-09	1.211E-09
W	5.490E-08	2.710E-08	1.705E-08	9.360E-09	6.132E-09	4.424E-09	3.390E-09	2.709E-09	2.232E-09	1.882E-09	1.616E-09
WNW	7.163E-08	3.541E-08	2.230E-08	1.226E-08	8.042E-09	5.807E-09	4.454E-09	3.562E-09	2.936E-09	2.477E-09	2.128E-09
NW	7.415E-08	3.715E-08	2.364E-08	1.320E-08	8.755E-09	6.381E-09	4.933E-09	3.972E-09	3.294E-09	2.794E-09	2.412E-09
NNW	1.255E-07	6.556E-08	4.297E-08	2.503E-08	1.712E-08	1.278E-08	1.008E-08	8.248E-09	6.939E-09	5.962E-09	5.206E-09
N	1.786E-07	9.400E-08	6.195E-08	3.637E-08	2.502E-08	1.875E-08	1.483E-08	1.218E-08	1.027E-08	8.841E-09	7.735E-09
NNE	1.196E-07	6.256E-08	4.105E-08	2.396E-08	1.641E-08	1.227E-08	9.681E-09	7.932E-09	6.679E-09	5.742E-09	5.018E-09
NE	8.491E-08	4.431E-08	2.903E-08	1.690E-08	1.156E-08	8.629E-09	6.803E-09	5.570E-09	4.687E-09	4.027E-09	3.517E-09
ENE	6.037E-08	3.155E-08	2.069E-08	1.206E-08	8.253E-09	6.162E-09	4.860E-09	3.979E-09	3.349E-09	2.878E-09	2.513E-09
E	7.196E-08	3.812E-08	2.524E-08	1.491E-08	1.030E-08	7.741E-09	6.140E-09	5.051E-09	4.268E-09	3.681E-09	3.225E-09
ESE	1.109E-07	5.853E-08	3.865E-08	2.275E-08	1.568E-08	1.177E-08	9.320E-09	7.659E-09	6.466E-09	5.571E-09	4.878E-09
SE	1.147E-07	5.988E-08	3.925E-08	2.287E-08	1.565E-08	1.169E-08	9.216E-09	7.547E-09	6.352E-09	5.458E-09	4.768E-09
SSE	1.322E-07	6.902E-08	4.524E-08	2.637E-08	1.805E-08	1.349E-08	1.064E-08	8.718E-09	7.340E-09	6.310E-09	5.514E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	7.471E-06	1.731E-06	5.341E-07	2.691E-07	1.668E-07	7.363E-08	2.619E-08	1.280E-08	8.081E-09	5.756E-09
SSW	5.241E-06	1.201E-06	3.634E-07	1.810E-07	1.113E-07	4.840E-08	1.679E-08	8.036E-09	5.006E-09	3.530E-09
SW	2.773E-06	6.438E-07	1.945E-07	9.672E-08	5.936E-08	2.575E-08	8.875E-09	4.222E-09	2.618E-09	1.839E-09
WSW	2.477E-06	5.651E-07	1.675E-07	8.231E-08	5.008E-08	2.139E-08	7.175E-09	3.335E-09	2.037E-09	1.414E-09
W	3.363E-06	7.659E-07	2.265E-07	1.112E-07	6.758E-08	2.881E-08	9.634E-09	4.466E-09	2.722E-09	1.887E-09
WNW	4.364E-06	9.953E-07	2.949E-07	1.449E-07	8.814E-08	3.763E-08	1.262E-08	5.862E-09	3.578E-09	2.483E-09
NW	4.323E-06	9.920E-07	2.986E-07	1.483E-07	9.090E-08	3.936E-08	1.354E-08	6.435E-09	3.988E-09	2.801E-09
NNW	6.227E-06	1.471E-06	4.699E-07	2.417E-07	1.521E-07	6.885E-08	2.550E-08	1.286E-08	8.272E-09	5.972E-09
N	8.596E-06	2.036E-06	6.584E-07	3.412E-07	2.158E-07	9.854E-08	3.701E-08	1.885E-08	1.221E-08	8.855E-09
NNE	5.924E-06	1.394E-06	4.464E-07	2.300E-07	1.449E-07	6.568E-08	2.440E-08	1.234E-08	7.955E-09	5.752E-09
NE	4.221E-06	9.957E-07	3.181E-07	1.636E-07	1.029E-07	4.654E-08	1.722E-08	8.681E-09	5.586E-09	4.033E-09
ENE	2.964E-06	7.040E-07	2.255E-07	1.161E-07	7.312E-08	3.313E-08	1.228E-08	6.199E-09	3.991E-09	2.882E-09
E	3.362E-06	8.002E-07	2.620E-07	1.367E-07	8.682E-08	3.991E-08	1.515E-08	7.782E-09	5.064E-09	3.686E-09
ESE	5.266E-06	1.249E-06	4.065E-07	2.113E-07	1.339E-07	6.133E-08	2.314E-08	1.183E-08	7.679E-09	5.579E-09
SE	5.711E-06	1.343E-06	4.292E-07	2.208E-07	1.389E-07	6.289E-08	2.330E-08	1.176E-08	7.569E-09	5.468E-09
SSE	6.634E-06	1.551E-06	4.950E-07	2.546E-07	1.602E-07	7.249E-08	2.687E-08	1.357E-08	8.743E-09	6.321E-09

VENTS GROUND LEVEL RELEASES - JAN-JUN 2019
2.260 DAY DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	4.204E-05	1.433E-05	7.671E-06	3.835E-06	1.518E-06	8.124E-07	5.098E-07	3.527E-07	2.605E-07	2.017E-07	1.617E-07
SSW	2.825E-05	1.005E-05	5.398E-06	2.685E-06	1.050E-06	5.567E-07	3.469E-07	2.387E-07	1.755E-07	1.353E-07	1.081E-07
SW	1.485E-05	5.255E-06	2.866E-06	1.439E-06	5.616E-07	2.974E-07	1.851E-07	1.272E-07	9.337E-08	7.191E-08	5.739E-08
WSW	1.291E-05	4.724E-06	2.561E-06	1.275E-06	4.919E-07	2.584E-07	1.598E-07	1.092E-07	7.986E-08	6.128E-08	4.875E-08
W	1.751E-05	6.421E-06	3.477E-06	1.729E-06	6.664E-07	3.498E-07	2.161E-07	1.476E-07	1.079E-07	8.276E-08	6.581E-08
WNW	2.274E-05	8.329E-06	4.515E-06	2.248E-06	8.675E-07	4.558E-07	2.820E-07	1.928E-07	1.410E-07	1.083E-07	8.616E-08
NW	2.291E-05	8.258E-06	4.465E-06	2.225E-06	8.669E-07	4.588E-07	2.855E-07	1.962E-07	1.441E-07	1.110E-07	8.864E-08
NNW	3.593E-05	1.192E-05	6.388E-06	3.209E-06	1.299E-06	7.062E-07	4.487E-07	3.135E-07	2.336E-07	1.822E-07	1.471E-07
N	5.050E-05	1.650E-05	8.798E-06	4.415E-06	1.802E-06	9.858E-07	6.291E-07	4.413E-07	3.298E-07	2.579E-07	2.087E-07
NNE	3.459E-05	1.138E-05	6.062E-06	3.037E-06	1.231E-06	6.702E-07	4.261E-07	2.979E-07	2.221E-07	1.733E-07	1.399E-07
NE	2.487E-05	8.098E-06	4.318E-06	2.170E-06	8.789E-07	4.778E-07	3.034E-07	2.120E-07	1.579E-07	1.231E-07	9.929E-08
ENE	1.744E-05	5.661E-06	3.037E-06	1.532E-06	6.213E-07	3.381E-07	2.149E-07	1.502E-07	1.119E-07	8.728E-08	7.043E-08
E	2.060E-05	6.475E-06	3.424E-06	1.723E-06	7.097E-07	3.902E-07	2.500E-07	1.758E-07	1.317E-07	1.032E-07	8.360E-08
ESE	3.177E-05	1.014E-05	5.372E-06	2.699E-06	1.107E-06	6.068E-07	3.879E-07	2.724E-07	2.038E-07	1.595E-07	1.291E-07
SE	3.338E-05	1.098E-05	5.846E-06	2.931E-06	1.187E-06	6.457E-07	4.103E-07	2.868E-07	2.137E-07	1.667E-07	1.346E-07
SSE	3.917E-05	1.282E-05	6.771E-06	3.382E-06	1.369E-06	7.439E-07	4.725E-07	3.301E-07	2.458E-07	1.917E-07	1.547E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	1.332E-07	6.702E-08	4.260E-08	2.358E-08	1.544E-08	1.107E-08	8.415E-09	6.653E-09	5.416E-09	4.507E-09	3.818E-09
SSW	8.881E-08	4.415E-08	2.783E-08	1.524E-08	9.904E-09	7.068E-09	5.350E-09	4.218E-09	3.425E-09	2.845E-09	2.406E-09
SW	4.708E-08	2.328E-08	1.460E-08	7.924E-09	5.109E-09	3.619E-09	2.721E-09	2.130E-09	1.719E-09	1.419E-09	1.193E-09
WSW	3.988E-08	1.952E-08	1.217E-08	6.557E-09	4.215E-09	2.983E-09	2.243E-09	1.759E-09	1.422E-09	1.177E-09	9.919E-10
W	5.382E-08	2.630E-08	1.638E-08	8.812E-09	5.659E-09	4.002E-09	3.008E-09	2.358E-09	1.905E-09	1.576E-09	1.328E-09
WNW	7.051E-08	3.458E-08	2.160E-08	1.169E-08	7.546E-09	5.364E-09	4.051E-09	3.189E-09	2.589E-09	2.151E-09	1.821E-09
NW	7.276E-08	3.609E-08	2.273E-08	1.244E-08	8.090E-09	5.781E-09	4.383E-09	3.461E-09	2.817E-09	2.345E-09	1.987E-09
NNW	1.219E-07	6.267E-08	4.045E-08	2.285E-08	1.517E-08	1.100E-08	8.427E-09	6.708E-09	5.491E-09	4.592E-09	3.906E-09
N	1.733E-07	8.982E-08	5.830E-08	3.320E-08	2.217E-08	1.614E-08	1.241E-08	9.910E-09	8.135E-09	6.820E-09	5.815E-09
NNE	1.160E-07	5.969E-08	3.855E-08	2.179E-08	1.447E-08	1.049E-08	8.037E-09	6.396E-09	5.234E-09	4.376E-09	3.721E-09
NE	8.225E-08	4.222E-08	2.721E-08	1.533E-08	1.016E-08	7.346E-09	5.617E-09	4.463E-09	3.646E-09	3.044E-09	2.585E-09
ENE	5.836E-08	2.998E-08	1.932E-08	1.089E-08	7.211E-09	5.213E-09	3.983E-09	3.163E-09	2.583E-09	2.155E-09	1.828E-09
E	6.951E-08	3.619E-08	2.354E-08	1.343E-08	8.971E-09	6.528E-09	5.015E-09	3.999E-09	3.278E-09	2.744E-09	2.335E-09
ESE	1.072E-07	5.565E-08	3.613E-08	2.057E-08	1.372E-08	9.972E-09	7.656E-09	6.102E-09	5.000E-09	4.185E-09	3.561E-09
SE	1.116E-07	5.745E-08	3.713E-08	2.103E-08	1.400E-08	1.018E-08	7.818E-09	6.240E-09	5.121E-09	4.294E-09	3.662E-09
SSE	1.281E-07	6.583E-08	4.245E-08	2.395E-08	1.588E-08	1.150E-08	8.799E-09	6.996E-09	5.720E-09	4.779E-09	4.060E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	7.447E-06	1.719E-06	5.276E-07	2.644E-07	1.630E-07	7.089E-08	2.419E-08	1.117E-08	6.685E-09	4.521E-09
SSW	5.225E-06	1.194E-06	3.596E-07	1.782E-07	1.090E-07	4.682E-08	1.567E-08	7.137E-09	4.239E-09	2.854E-09
SW	2.762E-06	6.391E-07	1.919E-07	9.485E-08	5.787E-08	2.471E-08	8.157E-09	3.657E-09	2.142E-09	1.424E-09
WSW	2.470E-06	5.621E-07	1.658E-07	8.117E-08	4.918E-08	2.078E-08	6.763E-09	3.016E-09	1.769E-09	1.181E-09
W	3.354E-06	7.619E-07	2.244E-07	1.097E-07	6.639E-08	2.801E-08	9.092E-09	4.046E-09	2.371E-09	1.582E-09
WNW	4.355E-06	9.912E-07	2.927E-07	1.433E-07	8.691E-08	3.680E-08	1.205E-08	5.420E-09	3.207E-09	2.159E-09
NW	4.312E-06	9.872E-07	2.960E-07	1.464E-07	8.939E-08	3.830E-08	1.279E-08	5.838E-09	3.479E-09	2.352E-09
NNW	6.203E-06	1.460E-06	4.633E-07	2.369E-07	1.481E-07	6.595E-08	2.335E-08	1.108E-08	6.735E-09	4.605E-09
N	8.562E-06	2.020E-06	6.491E-07	3.343E-07	2.101E-07	9.435E-08	3.387E-08	1.626E-08	9.948E-09	6.837E-09
NNE	5.901E-06	1.383E-06	4.399E-07	2.252E-07	1.409E-07	6.280E-08	2.226E-08	1.057E-08	6.422E-09	4.387E-09
NE	4.204E-06	9.876E-07	3.133E-07	1.601E-07	1.000E-07	4.444E-08	1.567E-08	7.404E-09	4.481E-09	3.053E-09
ENE	2.951E-06	6.978E-07	2.219E-07	1.135E-07	7.095E-08	3.155E-08	1.113E-08	5.254E-09	3.176E-09	2.161E-09
E	3.346E-06	7.930E-07	2.577E-07	1.335E-07	8.419E-08	3.797E-08	1.370E-08	6.574E-09	4.014E-09	2.750E-09
ESE	5.243E-06	1.238E-06	4.001E-07	2.065E-07	1.300E-07	5.844E-08	2.098E-08	1.004E-08	6.126E-09	4.195E-09
SE	5.691E-06	1.334E-06	4.237E-07	2.167E-07	1.356E-07	6.044E-08	2.148E-08	1.025E-08	6.265E-09	4.305E-09
SSE	6.608E-06	1.538E-06	4.879E-07	2.493E-07	1.558E-07	6.928E-08	2.447E-08	1.159E-08	7.025E-09	4.792E-09

VENTS GROUND LEVEL RELEASES - JAN-JUN 2019
8.000 DAY DECAY, DEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	3.982E-05	1.311E-05	6.853E-06	3.368E-06	1.296E-06	6.775E-07	4.166E-07	2.832E-07	2.059E-07	1.571E-07	1.243E-07
SSW	2.675E-05	9.189E-06	4.821E-06	2.358E-06	8.955E-07	4.639E-07	2.833E-07	1.914E-07	1.385E-07	1.052E-07	8.296E-08
SW	1.407E-05	4.808E-06	2.561E-06	1.264E-06	4.797E-07	2.482E-07	1.514E-07	1.022E-07	7.390E-08	5.610E-08	4.419E-08
WSW	1.222E-05	4.320E-06	2.287E-06	1.119E-06	4.195E-07	2.152E-07	1.304E-07	8.751E-08	6.295E-08	4.759E-08	3.734E-08
W	1.658E-05	5.871E-06	3.105E-06	1.518E-06	5.683E-07	2.912E-07	1.763E-07	1.183E-07	8.503E-08	6.425E-08	5.040E-08
WNW	2.153E-05	7.614E-06	4.030E-06	1.972E-06	7.392E-07	3.791E-07	2.297E-07	1.542E-07	1.109E-07	8.385E-08	6.580E-08
NW	2.170E-05	7.550E-06	3.987E-06	1.952E-06	7.390E-07	3.819E-07	2.328E-07	1.570E-07	1.135E-07	8.613E-08	6.783E-08
NNW	3.404E-05	1.090E-05	5.710E-06	2.820E-06	1.110E-06	5.896E-07	3.672E-07	2.522E-07	1.850E-07	1.422E-07	1.133E-07
N	4.785E-05	1.510E-05	7.864E-06	3.880E-06	1.540E-06	8.231E-07	5.150E-07	3.550E-07	2.612E-07	2.014E-07	1.608E-07
NNE	3.277E-05	1.042E-05	5.419E-06	2.670E-06	1.052E-06	5.597E-07	3.489E-07	2.397E-07	1.760E-07	1.354E-07	1.079E-07
NE	2.356E-05	7.411E-06	3.860E-06	1.908E-06	7.512E-07	3.991E-07	2.485E-07	1.706E-07	1.251E-07	9.619E-08	7.661E-08
ENE	1.652E-05	5.181E-06	2.716E-06	1.347E-06	5.314E-07	2.826E-07	1.761E-07	1.210E-07	8.880E-08	6.830E-08	5.442E-08
E	1.952E-05	5.927E-06	3.062E-06	1.515E-06	6.070E-07	3.263E-07	2.050E-07	1.417E-07	1.046E-07	8.078E-08	6.462E-08
ESE	3.010E-05	9.278E-06	4.803E-06	2.373E-06	9.464E-07	5.072E-07	3.179E-07	2.195E-07	1.617E-07	1.248E-07	9.970E-08
SE	3.162E-05	1.004E-05	5.224E-06	2.575E-06	1.014E-06	5.387E-07	3.355E-07	2.304E-07	1.690E-07	1.300E-07	1.036E-07
SSE	3.711E-05	1.173E-05	6.052E-06	2.972E-06	1.170E-06	6.212E-07	3.868E-07	2.656E-07	1.948E-07	1.498E-07	1.193E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	1.012E-07	4.862E-08	2.974E-08	1.554E-08	9.740E-09	6.745E-09	4.976E-09	3.834E-09	3.050E-09	2.486E-09	2.066E-09
SSW	6.729E-08	3.191E-08	1.934E-08	9.969E-09	6.190E-09	4.256E-09	3.121E-09	2.393E-09	1.896E-09	1.540E-09	1.276E-09
SW	3.582E-08	1.692E-08	1.022E-08	5.243E-09	3.240E-09	2.219E-09	1.621E-09	1.238E-09	9.778E-10	7.916E-10	6.537E-10
WSW	3.016E-08	1.406E-08	8.418E-09	4.260E-09	2.609E-09	1.774E-09	1.290E-09	9.813E-10	7.723E-10	6.236E-10	5.139E-10
W	4.069E-08	1.894E-08	1.132E-08	5.720E-09	3.498E-09	2.377E-09	1.726E-09	1.313E-09	1.032E-09	8.332E-10	6.863E-10
WNW	5.315E-08	2.479E-08	1.485E-08	7.520E-09	4.611E-09	3.139E-09	2.284E-09	1.740E-09	1.371E-09	1.109E-09	9.149E-10
NW	5.497E-08	2.597E-08	1.570E-08	8.065E-09	4.995E-09	3.429E-09	2.511E-09	1.924E-09	1.523E-09	1.236E-09	1.024E-09
NNW	9.279E-08	4.562E-08	2.837E-08	1.515E-08	9.647E-09	6.760E-09	5.033E-09	3.908E-09	3.130E-09	2.566E-09	2.143E-09
N	1.320E-07	6.540E-08	4.089E-08	2.202E-08	1.409E-08	9.918E-09	7.410E-09	5.771E-09	4.632E-09	3.806E-09	3.185E-09
NNE	8.837E-08	4.351E-08	2.708E-08	1.449E-08	9.234E-09	6.476E-09	4.825E-09	3.749E-09	3.003E-09	2.463E-09	2.057E-09
NE	6.272E-08	3.081E-08	1.914E-08	1.021E-08	6.497E-09	4.549E-09	3.385E-09	2.627E-09	2.102E-09	1.722E-09	1.438E-09
ENE	4.456E-08	2.192E-08	1.363E-08	7.278E-09	4.631E-09	3.243E-09	2.413E-09	1.873E-09	1.499E-09	1.228E-09	1.025E-09
E	5.311E-08	2.647E-08	1.662E-08	8.990E-09	5.772E-09	4.070E-09	3.045E-09	2.374E-09	1.907E-09	1.568E-09	1.312E-09
ESE	8.186E-08	4.067E-08	2.546E-08	1.373E-08	8.799E-09	6.195E-09	4.630E-09	3.607E-09	2.895E-09	2.379E-09	1.990E-09
SE	8.481E-08	4.171E-08	2.595E-08	1.388E-08	8.842E-09	6.202E-09	4.623E-09	3.594E-09	2.880E-09	2.364E-09	1.976E-09
SSE	9.766E-08	4.800E-08	2.984E-08	1.594E-08	1.015E-08	7.112E-09	5.296E-09	4.113E-09	3.293E-09	2.700E-09	2.255E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	6.695E-06	1.482E-06	4.328E-07	2.094E-07	1.255E-07	5.191E-08	1.612E-08	6.836E-09	3.861E-09	2.497E-09
SSW	4.697E-06	1.029E-06	2.947E-07	1.409E-07	8.376E-08	3.419E-08	1.037E-08	4.317E-09	2.412E-09	1.547E-09
SW	2.484E-06	5.512E-07	1.576E-07	7.521E-08	4.462E-08	1.814E-08	5.460E-09	2.252E-09	1.248E-09	7.957E-10
WSW	2.219E-06	4.841E-07	1.358E-07	6.411E-08	3.772E-08	1.513E-08	4.450E-09	1.803E-09	9.898E-10	6.270E-10
W	3.014E-06	6.562E-07	1.837E-07	8.661E-08	5.091E-08	2.039E-08	5.978E-09	2.416E-09	1.324E-09	8.378E-10
WNW	3.912E-06	8.531E-07	2.393E-07	1.130E-07	6.647E-08	2.667E-08	7.855E-09	3.190E-09	1.755E-09	1.115E-09
NW	3.874E-06	8.499E-07	2.422E-07	1.155E-07	6.849E-08	2.785E-08	8.398E-09	3.479E-09	1.939E-09	1.242E-09
NNW	5.579E-06	1.259E-06	3.805E-07	1.879E-07	1.143E-07	4.843E-08	1.564E-08	6.839E-09	3.933E-09	2.576E-09
N	7.701E-06	1.741E-06	5.331E-07	2.652E-07	1.622E-07	6.930E-08	2.269E-08	1.003E-08	5.806E-09	3.821E-09
NNE	5.308E-06	1.193E-06	3.614E-07	1.787E-07	1.088E-07	4.618E-08	1.495E-08	6.551E-09	3.772E-09	2.473E-09
NE	3.781E-06	8.517E-07	2.575E-07	1.271E-07	7.727E-08	3.271E-08	1.055E-08	4.603E-09	2.644E-09	1.730E-09
ENE	2.655E-06	6.021E-07	1.825E-07	9.020E-08	5.488E-08	2.327E-08	7.512E-09	3.281E-09	1.885E-09	1.233E-09
E	3.011E-06	6.841E-07	2.120E-07	1.061E-07	6.515E-08	2.801E-08	9.254E-09	4.114E-09	2.388E-09	1.574E-09
ESE	4.718E-06	1.068E-06	3.290E-07	1.641E-07	1.005E-07	4.306E-08	1.415E-08	6.264E-09	3.628E-09	2.388E-09
SE	5.118E-06	1.149E-06	3.477E-07	1.717E-07	1.045E-07	4.428E-08	1.432E-08	6.275E-09	3.616E-09	2.373E-09
SSE	5.944E-06	1.326E-06	4.008E-07	1.979E-07	1.203E-07	5.096E-08	1.645E-08	7.196E-09	4.139E-09	2.711E-09

VENTS GROUND LEVEL RELEASES - JAN-JUN 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) AT FIXED POINTS BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	DISTANCES IN MILES .25	.50	.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
S	2.771E-07	9.370E-08	4.811E-08	2.287E-08	8.216E-09	4.074E-09	2.399E-09	1.571E-09	1.105E-09	8.192E-10	6.313E-10
SSW	1.657E-07	5.604E-08	2.877E-08	1.368E-08	4.914E-09	2.437E-09	1.435E-09	9.396E-10	6.611E-10	4.899E-10	3.776E-10
SW	6.916E-08	2.339E-08	1.201E-08	5.708E-09	2.050E-09	1.017E-09	5.988E-10	3.921E-10	2.759E-10	2.044E-10	1.576E-10
WSW	7.692E-08	2.601E-08	1.336E-08	6.350E-09	2.281E-09	1.131E-09	6.660E-10	4.361E-10	3.069E-10	2.274E-10	1.752E-10
W	1.138E-07	3.847E-08	1.975E-08	9.390E-09	3.373E-09	1.673E-09	9.849E-10	6.449E-10	4.538E-10	3.363E-10	2.592E-10
WNW	1.687E-07	5.703E-08	2.928E-08	1.392E-08	5.001E-09	2.480E-09	1.460E-09	9.561E-10	6.728E-10	4.986E-10	3.842E-10
NW	1.688E-07	5.707E-08	2.930E-08	1.393E-08	5.004E-09	2.482E-09	1.461E-09	9.568E-10	6.732E-10	4.989E-10	3.845E-10
NNW	1.470E-07	4.972E-08	2.553E-08	1.214E-08	4.359E-09	2.162E-09	1.273E-09	8.335E-10	5.865E-10	4.347E-10	3.350E-10
N	2.082E-07	7.041E-08	3.615E-08	1.719E-08	6.174E-09	3.062E-09	1.803E-09	1.180E-09	8.306E-10	6.156E-10	4.744E-10
NNE	1.593E-07	5.387E-08	2.766E-08	1.315E-08	4.723E-09	2.342E-09	1.379E-09	9.031E-10	6.355E-10	4.710E-10	3.629E-10
NE	1.074E-07	3.631E-08	1.864E-08	8.862E-09	3.183E-09	1.579E-09	9.296E-10	6.087E-10	4.283E-10	3.174E-10	2.446E-10
ENE	6.134E-08	2.074E-08	1.065E-08	5.063E-09	1.819E-09	9.019E-10	5.311E-10	3.477E-10	2.447E-10	1.813E-10	1.397E-10
E	6.785E-08	2.294E-08	1.178E-08	5.601E-09	2.012E-09	9.977E-10	5.874E-10	3.846E-10	2.707E-10	2.006E-10	1.546E-10
ESE	1.113E-07	3.765E-08	1.933E-08	9.191E-09	3.301E-09	1.637E-09	9.640E-10	6.312E-10	4.442E-10	3.292E-10	2.537E-10
SE	1.890E-07	6.391E-08	3.282E-08	1.560E-08	5.604E-09	2.779E-09	1.636E-09	1.072E-09	7.540E-10	5.588E-10	4.306E-10
SSE	2.245E-07	7.592E-08	3.898E-08	1.853E-08	6.656E-09	3.301E-09	1.944E-09	1.273E-09	8.955E-10	6.637E-10	5.114E-10

DIRECTION FROM SITE	DISTANCES IN MILES 5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
S	5.015E-10	2.228E-10	1.350E-10	6.821E-11	4.129E-11	2.768E-11	1.983E-11	1.489E-11	1.158E-11	9.250E-12	7.550E-12
SSW	3.000E-10	1.332E-10	8.072E-11	4.080E-11	2.469E-11	1.656E-11	1.186E-11	8.908E-12	6.926E-12	5.533E-12	4.516E-12
SW	1.252E-10	5.560E-11	3.368E-11	1.702E-11	1.030E-11	6.909E-12	4.950E-12	3.717E-12	2.890E-12	2.309E-12	1.884E-12
WSW	1.392E-10	6.185E-11	3.746E-11	1.894E-11	1.146E-11	7.684E-12	5.506E-12	4.135E-12	3.215E-12	2.568E-12	2.096E-12
W	2.059E-10	9.146E-11	5.540E-11	2.800E-11	1.695E-11	1.136E-11	8.143E-12	6.114E-12	4.754E-12	3.798E-12	3.100E-12
WNW	3.052E-10	1.356E-10	8.214E-11	4.152E-11	2.513E-11	1.685E-11	1.207E-11	9.065E-12	7.049E-12	5.630E-12	4.596E-12
NW	3.054E-10	1.357E-10	8.219E-11	4.155E-11	2.515E-11	1.686E-11	1.208E-11	9.071E-12	7.053E-12	5.634E-12	4.599E-12
NNW	2.661E-10	1.182E-10	7.161E-11	3.619E-11	2.191E-11	1.469E-11	1.052E-11	7.903E-12	6.145E-12	4.908E-12	4.006E-12
N	3.769E-10	1.674E-10	1.014E-10	5.126E-11	3.102E-11	2.080E-11	1.491E-11	1.119E-11	8.702E-12	6.951E-12	5.674E-12
NNE	2.883E-10	1.281E-10	7.759E-11	3.922E-11	2.374E-11	1.591E-11	1.140E-11	8.563E-12	6.658E-12	5.318E-12	4.341E-12
NE	1.943E-10	8.632E-11	5.229E-11	2.643E-11	1.600E-11	1.073E-11	7.685E-12	5.771E-12	4.487E-12	3.584E-12	2.926E-12
ENE	1.110E-10	4.932E-11	2.987E-11	1.510E-11	9.139E-12	6.128E-12	4.391E-12	3.297E-12	2.563E-12	2.048E-12	1.671E-12
E	1.228E-10	5.455E-11	3.305E-11	1.670E-11	1.011E-11	6.778E-12	4.857E-12	3.647E-12	2.836E-12	2.265E-12	1.849E-12
ESE	2.015E-10	8.952E-11	5.423E-11	2.741E-11	1.659E-11	1.112E-11	7.970E-12	5.985E-12	4.653E-12	3.717E-12	3.034E-12
SE	3.421E-10	1.520E-10	9.205E-11	4.653E-11	2.816E-11	1.888E-11	1.353E-11	1.016E-11	7.899E-12	6.310E-12	5.150E-12
SSE	4.063E-10	1.805E-10	1.093E-10	5.527E-11	3.345E-11	2.243E-11	1.607E-11	1.207E-11	9.382E-12	7.495E-12	6.117E-12

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES .5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	4.702E-08	9.632E-09	2.515E-09	1.129E-09	6.389E-10	2.457E-10	7.108E-11	2.817E-11	1.504E-11	9.311E-12
SSW	2.813E-08	5.761E-09	1.504E-09	6.755E-10	3.821E-10	1.469E-10	4.251E-11	1.685E-11	8.997E-12	5.569E-12
SW	1.174E-08	2.404E-09	6.276E-10	2.819E-10	1.595E-10	6.132E-11	1.774E-11	7.031E-12	3.754E-12	2.324E-12
WSW	1.305E-08	2.674E-09	6.981E-10	3.135E-10	1.774E-10	6.820E-11	1.973E-11	7.820E-12	4.176E-12	2.585E-12
W	1.930E-08	3.954E-09	1.032E-09	4.636E-10	2.623E-10	1.009E-10	2.918E-11	1.156E-11	6.176E-12	3.823E-12
WNW	2.862E-08	5.863E-09	1.531E-09	6.874E-10	3.889E-10	1.495E-10	4.326E-11	1.715E-11	9.156E-12	5.667E-12
NW	2.864E-08	5.867E-09	1.531E-09	6.878E-10	3.891E-10	1.496E-10	4.329E-11	1.716E-11	9.162E-12	5.671E-12
NNW	2.495E-08	5.111E-09	1.334E-09	5.992E-10	3.390E-10	1.304E-10	3.771E-11	1.495E-11	7.982E-12	4.941E-12
N	3.534E-08	7.238E-09	1.890E-09	8.487E-10	4.801E-10	1.846E-10	5.341E-11	2.117E-11	1.130E-11	6.997E-12
NNE	2.704E-08	5.538E-09	1.446E-09	6.493E-10	3.673E-10	1.413E-10	4.086E-11	1.620E-11	8.649E-12	5.353E-12
NE	1.822E-08	3.732E-09	9.743E-10	4.376E-10	2.475E-10	9.520E-11	2.754E-11	1.092E-11	5.829E-12	3.608E-12
ENE	1.041E-08	2.132E-09	5.566E-10	2.500E-10	1.414E-10	5.439E-11	1.573E-11	6.236E-12	3.330E-12	2.061E-12
E	1.151E-08	2.359E-09	6.157E-10	2.765E-10	1.564E-10	6.016E-11	1.740E-11	6.898E-12	3.684E-12	2.280E-12
ESE	1.890E-08	3.871E-09	1.010E-09	4.538E-10	2.567E-10	9.873E-11	2.856E-11	1.132E-11	6.045E-12	3.742E-12
SE	3.208E-08	6.570E-09	1.715E-09	7.703E-10	4.358E-10	1.676E-10	4.848E-11	1.922E-11	1.026E-11	6.351E-12
SSE	3.810E-08	7.804E-09	2.037E-09	9.150E-10	5.176E-10	1.991E-10	5.759E-11	2.282E-11	1.219E-11	7.544E-12

VENTS GROUND LEVEL RELEASES - JAN-JUN 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION FROM SITE	DIST. (MI)	X/Q (SEC/M3) NO DECAY UNDEPLETED	X/Q (SEC/M3) 2.26 DAY DECAY UNDEPLETED	X/Q (SEC/M3) 8.0 DAY DECAY DEPLETED	D/Q (PER SQ.METER)
A	Site Boundary	S	.80	6.6E-06	6.6E-06	5.9E-06	4.1E-08
A	Site Boundary	SSW	.82	4.3E-06	4.3E-06	3.8E-06	2.3E-08
A	Site Boundary	SW	.97	1.5E-06	1.5E-06	1.3E-06	6.1E-09
A	Site Boundary	WSW	.93	1.5E-06	1.5E-06	1.4E-06	7.8E-09
A	Site Boundary	W	.91	2.2E-06	2.2E-06	1.9E-06	1.2E-08
A	Site Boundary	WNW	.94	2.6E-06	2.6E-06	2.3E-06	1.6E-08
A	Site Boundary	NW	.81	3.7E-06	3.7E-06	3.3E-06	2.4E-08
A	Site Boundary	NNW	.69	7.3E-06	7.3E-06	6.6E-06	3.0E-08
A	Site Boundary	N	.67	1.0E-05	1.0E-05	9.3E-06	4.3E-08
A	Site Boundary	NNE	.60	8.6E-06	8.6E-06	7.8E-06	4.0E-08
A	Site Boundary	NE	.62	5.7E-06	5.7E-06	5.1E-06	2.5E-08
A	Site Boundary	ENE	.59	4.4E-06	4.4E-06	4.0E-06	1.6E-08
A	Site Boundary	E	.53	6.0E-06	6.0E-06	5.4E-06	2.1E-08
A	Site Boundary	ESE	.54	9.0E-06	9.0E-06	8.2E-06	3.3E-08
A	Site Boundary	SE	.65	7.3E-06	7.3E-06	6.6E-06	4.2E-08
A	Site Boundary	SSE	.81	5.6E-06	5.6E-06	5.0E-06	3.2E-08
A	Nearest Res	SW	1.30	7.8E-07	7.8E-07	6.7E-07	2.9E-09
A	Nearest Res	WSW	1.80	3.3E-07	3.3E-07	2.7E-07	1.5E-09
A	Nearest Res	WNW	1.90	5.1E-07	5.1E-07	4.3E-07	2.8E-09
A	Nearest Res	NW	.90	2.9E-06	2.9E-06	2.5E-06	1.8E-08
A	Nearest Res	NNW	1.90	7.9E-07	7.9E-07	6.6E-07	2.4E-09
A	Nearest Cow	NNW	3.50	2.4E-07	2.3E-07	1.9E-07	5.9E-10
A	Nearest Garde	SW	2.20	2.5E-07	2.4E-07	2.0E-07	8.1E-10
A	Nearest Garde	WSW	1.80	3.3E-07	3.3E-07	2.7E-07	1.5E-09
A	Nearest Garde	WNW	1.90	5.1E-07	5.1E-07	4.3E-07	2.8E-09
A	Nearest Garde	NNW	3.00	3.2E-07	3.1E-07	2.5E-07	8.3E-10

Atmospheric Diffusion Estimates

Ground Level Releases

July-September 2019

VENTS GROUND LEVEL RELEASES - JUL-SEP 2019
NO DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	1.967E-05	7.007E-06	3.800E-06	1.899E-06	7.375E-07	3.895E-07	2.421E-07	1.662E-07	1.221E-07	9.404E-08	7.511E-08
SSW	1.354E-05	4.960E-06	2.671E-06	1.323E-06	5.076E-07	2.657E-07	1.639E-07	1.119E-07	8.171E-08	6.266E-08	4.984E-08
SW	1.077E-05	3.853E-06	2.088E-06	1.042E-06	4.041E-07	2.132E-07	1.324E-07	9.084E-08	6.667E-08	5.134E-08	4.098E-08
WSW	1.572E-05	5.531E-06	2.902E-06	1.424E-06	5.488E-07	2.884E-07	1.785E-07	1.222E-07	8.952E-08	6.883E-08	5.487E-08
W	2.093E-05	7.618E-06	4.059E-06	2.000E-06	7.604E-07	3.954E-07	2.427E-07	1.649E-07	1.200E-07	9.170E-08	7.271E-08
WNW	2.613E-05	9.547E-06	5.094E-06	2.514E-06	9.582E-07	4.989E-07	3.064E-07	2.083E-07	1.517E-07	1.159E-07	9.194E-08
NW	2.084E-05	7.665E-06	4.104E-06	2.029E-06	7.750E-07	4.042E-07	2.486E-07	1.692E-07	1.233E-07	9.431E-08	7.484E-08
NNW	2.900E-05	1.068E-05	5.792E-06	2.883E-06	1.113E-06	5.853E-07	3.625E-07	2.481E-07	1.817E-07	1.397E-07	1.113E-07
N	6.662E-05	2.336E-05	1.290E-05	6.520E-06	2.575E-06	1.377E-06	8.643E-07	5.985E-07	4.427E-07	3.432E-07	2.757E-07
NNE	5.159E-05	1.736E-05	9.681E-06	4.958E-06	1.992E-06	1.078E-06	6.825E-07	4.760E-07	3.541E-07	2.760E-07	2.226E-07
NE	3.379E-05	1.090E-05	5.920E-06	3.011E-06	1.231E-06	6.746E-07	4.313E-07	3.031E-07	2.270E-07	1.779E-07	1.442E-07
ENE	3.265E-05	1.003E-05	5.376E-06	2.740E-06	1.141E-06	6.321E-07	4.076E-07	2.884E-07	2.172E-07	1.710E-07	1.392E-07
E	3.397E-05	1.049E-05	5.652E-06	2.886E-06	1.198E-06	6.631E-07	4.270E-07	3.018E-07	2.271E-07	1.787E-07	1.454E-07
ESE	5.526E-05	1.667E-05	8.700E-06	4.387E-06	1.852E-06	1.037E-06	6.734E-07	4.792E-07	3.627E-07	2.867E-07	2.343E-07
SE	4.861E-05	1.501E-05	7.936E-06	4.011E-06	1.675E-06	9.308E-07	6.015E-07	4.263E-07	3.215E-07	2.535E-07	2.066E-07
SSE	3.976E-05	1.272E-05	6.940E-06	3.543E-06	1.448E-06	7.931E-07	5.068E-07	3.560E-07	2.665E-07	2.088E-07	1.692E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	6.168E-08	3.072E-08	1.946E-08	1.080E-08	7.151E-09	5.202E-09	4.016E-09	3.229E-09	2.674E-09	2.266E-09	1.954E-09
SSW	4.077E-08	2.000E-08	1.252E-08	6.838E-09	4.472E-09	3.222E-09	2.467E-09	1.970E-09	1.621E-09	1.366E-09	1.172E-09
SW	3.365E-08	1.675E-08	1.061E-08	5.885E-09	3.887E-09	2.823E-09	2.176E-09	1.748E-09	1.446E-09	1.224E-09	1.055E-09
WSW	4.500E-08	2.231E-08	1.410E-08	7.814E-09	5.178E-09	3.772E-09	2.916E-09	2.348E-09	1.948E-09	1.654E-09	1.429E-09
W	5.931E-08	2.877E-08	1.786E-08	9.644E-09	6.265E-09	4.490E-09	3.423E-09	2.723E-09	2.234E-09	1.877E-09	1.607E-09
WNW	7.501E-08	3.639E-08	2.260E-08	1.218E-08	7.890E-09	5.640E-09	4.289E-09	3.405E-09	2.789E-09	2.339E-09	1.999E-09
NW	6.110E-08	2.971E-08	1.848E-08	9.981E-09	6.465E-09	4.621E-09	3.514E-09	2.789E-09	2.284E-09	1.916E-09	1.637E-09
NNW	9.122E-08	4.506E-08	2.836E-08	1.558E-08	1.022E-08	7.374E-09	5.655E-09	4.521E-09	3.726E-09	3.143E-09	2.699E-09
N	2.275E-07	1.156E-07	7.430E-08	4.211E-08	2.826E-08	2.078E-08	1.618E-08	1.311E-08	1.093E-08	9.310E-09	8.070E-09
NNE	1.845E-07	9.515E-08	6.179E-08	3.551E-08	2.404E-08	1.780E-08	1.394E-08	1.134E-08	9.494E-09	8.118E-09	7.059E-09
NE	1.200E-07	6.298E-08	4.141E-08	2.422E-08	1.661E-08	1.242E-08	9.804E-09	8.035E-09	6.766E-09	5.817E-09	5.083E-09
ENE	1.163E-07	6.186E-08	4.105E-08	2.432E-08	1.683E-08	1.267E-08	1.006E-08	8.282E-09	7.002E-09	6.041E-09	5.295E-09
E	1.214E-07	6.442E-08	4.268E-08	2.523E-08	1.743E-08	1.311E-08	1.040E-08	8.554E-09	7.227E-09	6.231E-09	5.459E-09
ESE	1.963E-07	1.057E-07	7.071E-08	4.236E-08	2.954E-08	2.238E-08	1.785E-08	1.476E-08	1.252E-08	1.083E-08	9.522E-09
SE	1.728E-07	9.226E-08	6.140E-08	3.652E-08	2.534E-08	1.912E-08	1.521E-08	1.254E-08	1.062E-08	9.169E-09	8.046E-09
SSE	1.408E-07	7.378E-08	4.846E-08	2.831E-08	1.940E-08	1.449E-08	1.144E-08	9.369E-09	7.887E-09	6.778E-09	5.921E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	3.668E-06	8.410E-07	2.510E-07	1.240E-07	7.574E-08	3.259E-08	1.110E-08	5.247E-09	3.242E-09	2.271E-09
SSW	2.581E-06	5.813E-07	1.702E-07	8.307E-08	5.028E-08	2.129E-08	7.050E-09	3.253E-09	1.979E-09	1.370E-09
SW	2.016E-06	4.611E-07	1.373E-07	6.773E-08	4.133E-08	1.778E-08	6.047E-09	2.848E-09	1.755E-09	1.227E-09
WSW	2.829E-06	6.275E-07	1.853E-07	9.098E-08	5.535E-08	2.370E-08	8.039E-09	3.804E-09	2.358E-09	1.658E-09
W	3.934E-06	8.736E-07	2.523E-07	1.220E-07	7.337E-08	3.071E-08	9.969E-09	4.536E-09	2.736E-09	1.883E-09
WNW	4.937E-06	1.100E-06	3.185E-07	1.542E-07	9.278E-08	3.884E-08	1.259E-08	5.700E-09	3.423E-09	2.347E-09
NW	3.973E-06	8.888E-07	2.583E-07	1.254E-07	7.552E-08	3.170E-08	1.031E-08	4.670E-09	2.804E-09	1.922E-09
NNW	5.584E-06	1.272E-06	3.762E-07	1.847E-07	1.123E-07	4.789E-08	1.603E-08	7.444E-09	4.542E-09	3.151E-09
N	1.239E-05	2.919E-06	8.947E-07	4.493E-07	2.778E-07	1.221E-07	4.311E-08	2.094E-08	1.316E-08	9.330E-09
NNE	9.288E-06	2.245E-06	7.053E-07	3.592E-07	2.243E-07	1.002E-07	3.625E-08	1.792E-08	1.138E-08	8.133E-09
NE	5.735E-06	1.379E-06	4.449E-07	2.300E-07	1.452E-07	6.607E-08	2.465E-08	1.249E-08	8.057E-09	5.826E-09
ENE	5.239E-06	1.270E-06	4.198E-07	2.200E-07	1.402E-07	6.472E-08	2.471E-08	1.273E-08	8.302E-09	6.049E-09
E	5.497E-06	1.336E-06	4.399E-07	2.300E-07	1.464E-07	6.742E-08	2.564E-08	1.318E-08	8.575E-09	6.240E-09
ESE	8.553E-06	2.053E-06	6.926E-07	3.671E-07	2.358E-07	1.103E-07	4.296E-08	2.248E-08	1.479E-08	1.085E-08
SE	7.764E-06	1.863E-06	6.192E-07	3.256E-07	2.080E-07	9.643E-08	3.708E-08	1.921E-08	1.257E-08	9.181E-09
SSE	6.715E-06	1.623E-06	5.228E-07	2.701E-07	1.704E-07	7.742E-08	2.882E-08	1.458E-08	9.396E-09	6.789E-09

VENTS GROUND LEVEL RELEASES - JUL-SEP 2019
2.260 DAY DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	1.965E-05	6.994E-06	3.790E-06	1.892E-06	7.332E-07	3.864E-07	2.396E-07	1.642E-07	1.203E-07	9.250E-08	7.372E-08
SSW	1.353E-05	4.951E-06	2.664E-06	1.319E-06	5.048E-07	2.637E-07	1.624E-07	1.106E-07	8.068E-08	6.175E-08	4.902E-08
SW	1.076E-05	3.844E-06	2.080E-06	1.037E-06	4.011E-07	2.111E-07	1.307E-07	8.945E-08	6.547E-08	5.028E-08	4.003E-08
WSW	1.570E-05	5.518E-06	2.891E-06	1.417E-06	5.448E-07	2.855E-07	1.763E-07	1.203E-07	8.789E-08	6.739E-08	5.357E-08
W	2.091E-05	7.604E-06	4.048E-06	1.992E-06	7.564E-07	3.926E-07	2.405E-07	1.631E-07	1.185E-07	9.040E-08	7.154E-08
WNW	2.611E-05	9.534E-06	5.084E-06	2.507E-06	9.542E-07	4.961E-07	3.043E-07	2.066E-07	1.502E-07	1.146E-07	9.078E-08
NW	2.083E-05	7.656E-06	4.097E-06	2.024E-06	7.725E-07	4.025E-07	2.472E-07	1.681E-07	1.223E-07	9.349E-08	7.411E-08
NNW	2.898E-05	1.066E-05	5.781E-06	2.876E-06	1.109E-06	5.823E-07	3.601E-07	2.462E-07	1.801E-07	1.382E-07	1.100E-07
N	6.655E-05	2.332E-05	1.286E-05	6.496E-06	2.560E-06	1.366E-06	8.558E-07	5.914E-07	4.365E-07	3.377E-07	2.707E-07
NNE	5.150E-05	1.730E-05	9.634E-06	4.925E-06	1.972E-06	1.063E-06	6.708E-07	4.661E-07	3.456E-07	2.683E-07	2.157E-07
NE	3.371E-05	1.086E-05	5.883E-06	2.985E-06	1.216E-06	6.629E-07	4.219E-07	2.951E-07	2.200E-07	1.716E-07	1.385E-07
ENE	3.256E-05	9.977E-06	5.334E-06	2.711E-06	1.122E-06	6.187E-07	3.968E-07	2.792E-07	2.091E-07	1.638E-07	1.326E-07
E	3.388E-05	1.043E-05	5.608E-06	2.857E-06	1.180E-06	6.492E-07	4.158E-07	2.923E-07	2.188E-07	1.712E-07	1.385E-07
ESE	5.511E-05	1.657E-05	8.629E-06	4.339E-06	1.822E-06	1.014E-06	6.548E-07	4.634E-07	3.487E-07	2.741E-07	2.227E-07
SE	4.849E-05	1.494E-05	7.878E-06	3.972E-06	1.650E-06	9.124E-07	5.865E-07	4.136E-07	3.103E-07	2.434E-07	1.974E-07
SSE	3.967E-05	1.267E-05	6.894E-06	3.512E-06	1.429E-06	7.788E-07	4.953E-07	3.463E-07	2.580E-07	2.011E-07	1.622E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	6.040E-08	2.975E-08	1.864E-08	1.012E-08	6.555E-09	4.667E-09	3.527E-09	2.778E-09	2.255E-09	1.873E-09	1.584E-09
SSW	4.003E-08	1.945E-08	1.207E-08	6.466E-09	4.150E-09	2.934E-09	2.205E-09	1.728E-09	1.396E-09	1.155E-09	9.729E-10
SW	3.277E-08	1.610E-08	1.005E-08	5.426E-09	3.488E-09	2.465E-09	1.851E-09	1.448E-09	1.167E-09	9.630E-10	8.092E-10
WSW	4.380E-08	2.140E-08	1.332E-08	7.163E-09	4.604E-09	3.254E-09	2.441E-09	1.909E-09	1.538E-09	1.269E-09	1.066E-09
W	5.825E-08	2.800E-08	1.723E-08	9.134E-09	5.827E-09	4.101E-09	3.071E-09	2.399E-09	1.934E-09	1.596E-09	1.342E-09
WNW	7.396E-08	3.563E-08	2.197E-08	1.167E-08	7.452E-09	5.250E-09	3.937E-09	3.081E-09	2.487E-09	2.057E-09	1.733E-09
NW	6.044E-08	2.923E-08	1.808E-08	9.657E-09	6.185E-09	4.372E-09	3.288E-09	2.581E-09	2.091E-09	1.734E-09	1.466E-09
NNW	9.004E-08	4.419E-08	2.763E-08	1.499E-08	9.705E-09	6.918E-09	5.239E-09	4.137E-09	3.368E-09	2.805E-09	2.380E-09
N	2.230E-07	1.121E-07	7.131E-08	3.959E-08	2.605E-08	1.878E-08	1.435E-08	1.141E-08	9.342E-09	7.820E-09	6.662E-09
NNE	1.781E-07	9.021E-08	5.755E-08	3.194E-08	2.091E-08	1.498E-08	1.136E-08	8.968E-09	7.287E-09	6.054E-09	5.119E-09
NE	1.148E-07	5.885E-08	3.782E-08	2.115E-08	1.389E-08	9.959E-09	7.550E-09	5.949E-09	4.823E-09	3.996E-09	3.370E-09
ENE	1.102E-07	5.702E-08	3.684E-08	2.071E-08	1.362E-08	9.765E-09	7.395E-09	5.818E-09	4.707E-09	3.893E-09	3.275E-09
E	1.150E-07	5.943E-08	3.835E-08	2.152E-08	1.414E-08	1.013E-08	7.666E-09	6.027E-09	4.874E-09	4.028E-09	3.387E-09
ESE	1.856E-07	9.716E-08	6.325E-08	3.592E-08	2.379E-08	1.714E-08	1.304E-08	1.029E-08	8.350E-09	6.922E-09	5.837E-09
SE	1.642E-07	8.548E-08	5.548E-08	3.141E-08	2.079E-08	1.498E-08	1.140E-08	9.009E-09	7.320E-09	6.077E-09	5.132E-09
SSE	1.344E-07	6.875E-08	4.411E-08	2.460E-08	1.612E-08	1.153E-08	8.725E-09	6.862E-09	5.553E-09	4.594E-09	3.868E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	3.658E-06	8.366E-07	2.486E-07	1.223E-07	7.435E-08	3.162E-08	1.043E-08	4.714E-09	2.793E-09	1.879E-09
SSW	2.574E-06	5.785E-07	1.687E-07	8.203E-08	4.946E-08	2.074E-08	6.681E-09	2.966E-09	1.738E-09	1.159E-09
SW	2.009E-06	4.580E-07	1.356E-07	6.653E-08	4.038E-08	1.712E-08	5.593E-09	2.492E-09	1.456E-09	9.665E-10
WSW	2.820E-06	6.234E-07	1.830E-07	8.935E-08	5.404E-08	2.279E-08	7.394E-09	3.289E-09	1.920E-09	1.273E-09
W	3.925E-06	8.694E-07	2.501E-07	1.205E-07	7.221E-08	2.994E-08	9.464E-09	4.149E-09	2.414E-09	1.602E-09
WNW	4.928E-06	1.096E-06	3.164E-07	1.528E-07	9.162E-08	3.808E-08	1.209E-08	5.312E-09	3.099E-09	2.065E-09
NW	3.967E-06	8.862E-07	2.570E-07	1.244E-07	7.479E-08	3.121E-08	9.986E-09	4.422E-09	2.596E-09	1.740E-09
NNW	5.574E-06	1.267E-06	3.738E-07	1.830E-07	1.110E-07	4.702E-08	1.545E-08	6.990E-09	4.159E-09	2.815E-09
N	1.236E-05	2.904E-06	8.862E-07	4.431E-07	2.729E-07	1.186E-07	4.062E-08	1.895E-08	1.146E-08	7.842E-09
NNE	9.246E-06	2.224E-06	6.936E-07	3.506E-07	2.174E-07	9.523E-08	3.273E-08	1.511E-08	9.012E-09	6.073E-09
NE	5.701E-06	1.363E-06	4.355E-07	2.230E-07	1.395E-07	6.193E-08	2.163E-08	1.004E-08	5.977E-09	4.009E-09
ENE	5.200E-06	1.252E-06	4.089E-07	2.119E-07	1.335E-07	5.986E-08	2.114E-08	9.846E-09	5.846E-09	3.905E-09
E	5.457E-06	1.317E-06	4.286E-07	2.217E-07	1.395E-07	6.242E-08	2.198E-08	1.021E-08	6.056E-09	4.041E-09
ESE	8.487E-06	2.022E-06	6.739E-07	3.531E-07	2.242E-07	1.017E-07	3.660E-08	1.727E-08	1.034E-08	6.944E-09
SE	7.710E-06	1.838E-06	6.043E-07	3.144E-07	1.987E-07	8.964E-08	3.204E-08	1.510E-08	9.049E-09	6.095E-09
SSE	6.674E-06	1.603E-06	5.113E-07	2.616E-07	1.634E-07	7.238E-08	2.517E-08	1.163E-08	6.895E-09	4.609E-09

VENTS GROUND LEVEL RELEASES - JUL-SEP 2019
8.000 DAY DECAY, DEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	1.861E-05	6.395E-06	3.384E-06	1.661E-06	6.253E-07	3.218E-07	1.955E-07	1.316E-07	9.485E-08	7.185E-08	5.648E-08
SSW	1.281E-05	4.527E-06	2.378E-06	1.157E-06	4.304E-07	2.195E-07	1.324E-07	8.858E-08	6.353E-08	4.790E-08	3.751E-08
SW	1.019E-05	3.517E-06	1.859E-06	9.111E-07	3.425E-07	1.760E-07	1.068E-07	7.184E-08	5.175E-08	3.918E-08	3.078E-08
WSW	1.487E-05	5.048E-06	2.583E-06	1.245E-06	4.651E-07	2.381E-07	1.441E-07	9.665E-08	6.949E-08	5.252E-08	4.120E-08
W	1.980E-05	6.953E-06	3.614E-06	1.749E-06	6.448E-07	3.268E-07	1.961E-07	1.306E-07	9.330E-08	7.011E-08	5.472E-08
WNW	2.472E-05	8.715E-06	4.537E-06	2.199E-06	8.128E-07	4.125E-07	2.477E-07	1.651E-07	1.180E-07	8.871E-08	6.926E-08
NW	1.972E-05	6.997E-06	3.656E-06	1.775E-06	6.576E-07	3.343E-07	2.011E-07	1.341E-07	9.598E-08	7.222E-08	5.643E-08
NNW	2.744E-05	9.745E-06	5.159E-06	2.522E-06	9.443E-07	4.840E-07	2.931E-07	1.967E-07	1.414E-07	1.069E-07	8.388E-08
N	6.303E-05	2.132E-05	1.149E-05	5.701E-06	2.183E-06	1.138E-06	6.982E-07	4.738E-07	3.440E-07	2.623E-07	2.073E-07
NNE	4.880E-05	1.584E-05	8.615E-06	4.332E-06	1.687E-06	8.890E-07	5.502E-07	3.758E-07	2.744E-07	2.102E-07	1.668E-07
NE	3.196E-05	9.946E-06	5.266E-06	2.629E-06	1.042E-06	5.558E-07	3.472E-07	2.389E-07	1.756E-07	1.352E-07	1.078E-07
ENE	3.087E-05	9.145E-06	4.780E-06	2.391E-06	9.642E-07	5.203E-07	3.277E-07	2.270E-07	1.677E-07	1.297E-07	1.038E-07
E	3.212E-05	9.563E-06	5.026E-06	2.519E-06	1.013E-06	5.458E-07	3.433E-07	2.376E-07	1.753E-07	1.355E-07	1.084E-07
ESE	5.226E-05	1.519E-05	7.735E-06	3.828E-06	1.566E-06	8.530E-07	5.411E-07	3.770E-07	2.798E-07	2.173E-07	1.746E-07
SE	4.598E-05	1.369E-05	7.057E-06	3.501E-06	1.417E-06	7.664E-07	4.837E-07	3.357E-07	2.484E-07	1.924E-07	1.542E-07
SSE	3.761E-05	1.160E-05	6.173E-06	3.094E-06	1.225E-06	6.533E-07	4.078E-07	2.805E-07	2.060E-07	1.586E-07	1.264E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	4.570E-08	2.146E-08	1.291E-08	6.590E-09	4.070E-09	2.786E-09	2.036E-09	1.556E-09	1.230E-09	9.964E-10	8.238E-10
SSW	3.023E-08	1.399E-08	8.325E-09	4.185E-09	2.556E-09	1.735E-09	1.259E-09	9.573E-10	7.527E-10	6.074E-10	5.002E-10
SW	2.489E-08	1.168E-08	7.019E-09	3.574E-09	2.199E-09	1.501E-09	1.094E-09	8.337E-10	6.571E-10	5.312E-10	4.381E-10
WSW	3.328E-08	1.554E-08	9.317E-09	4.737E-09	2.920E-09	1.996E-09	1.457E-09	1.112E-09	8.779E-10	7.105E-10	5.865E-10
W	4.399E-08	2.012E-08	1.188E-08	5.905E-09	3.584E-09	2.421E-09	1.750E-09	1.326E-09	1.039E-09	8.364E-10	6.873E-10
WNW	5.569E-08	2.550E-08	1.506E-08	7.485E-09	4.534E-09	3.057E-09	2.207E-09	1.670E-09	1.309E-09	1.053E-09	8.645E-10
NW	4.540E-08	2.085E-08	1.234E-08	6.149E-09	3.728E-09	2.517E-09	1.818E-09	1.377E-09	1.080E-09	8.693E-10	7.146E-10
NNW	6.775E-08	3.159E-08	1.891E-08	9.582E-09	5.880E-09	4.007E-09	2.918E-09	2.226E-09	1.755E-09	1.421E-09	1.173E-09
N	1.686E-07	8.078E-08	4.933E-08	2.571E-08	1.611E-08	1.115E-08	8.228E-09	6.341E-09	5.046E-09	4.115E-09	3.421E-09
NNE	1.361E-07	6.605E-08	4.066E-08	2.140E-08	1.346E-08	9.344E-09	6.901E-09	5.320E-09	4.232E-09	3.448E-09	2.864E-09
NE	8.833E-08	4.354E-08	2.709E-08	1.447E-08	9.192E-09	6.425E-09	4.770E-09	3.692E-09	2.947E-09	2.408E-09	2.004E-09
ENE	8.536E-08	4.260E-08	2.673E-08	1.442E-08	9.225E-09	6.478E-09	4.826E-09	3.745E-09	2.995E-09	2.451E-09	2.042E-09
E	8.909E-08	4.437E-08	2.780E-08	1.497E-08	9.564E-09	6.709E-09	4.994E-09	3.873E-09	3.095E-09	2.531E-09	2.108E-09
ESE	1.440E-07	7.271E-08	4.599E-08	2.509E-08	1.617E-08	1.142E-08	8.547E-09	6.658E-09	5.342E-09	4.383E-09	3.662E-09
SE	1.269E-07	6.362E-08	4.005E-08	2.172E-08	1.395E-08	9.823E-09	7.338E-09	5.709E-09	4.576E-09	3.752E-09	3.132E-09
SSE	1.035E-07	5.096E-08	3.168E-08	1.689E-08	1.072E-08	7.481E-09	5.549E-09	4.291E-09	3.422E-09	2.794E-09	2.323E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
	SEGMENT BOUNDARIES IN MILES FROM THE SITE									
S	3.287E-06	7.205E-07	2.036E-07	9.658E-08	5.704E-08	2.304E-08	6.874E-09	2.828E-09	1.569E-09	1.002E-09
SSW	2.313E-06	4.982E-07	1.381E-07	6.473E-08	3.789E-08	1.508E-08	4.381E-09	1.764E-09	9.657E-10	6.108E-10
SW	1.806E-06	3.948E-07	1.113E-07	5.270E-08	3.109E-08	1.254E-08	3.728E-09	1.524E-09	8.407E-10	5.340E-10
WSW	2.536E-06	5.375E-07	1.502E-07	7.078E-08	4.162E-08	1.672E-08	4.947E-09	2.027E-09	1.122E-09	7.142E-10
W	3.527E-06	7.487E-07	2.047E-07	9.512E-08	5.530E-08	2.176E-08	6.201E-09	2.463E-09	1.338E-09	8.412E-10
WNW	4.426E-06	9.429E-07	2.586E-07	1.203E-07	7.000E-08	2.757E-08	7.857E-09	3.111E-09	1.686E-09	1.059E-09
NW	3.562E-06	7.622E-07	2.098E-07	9.783E-08	5.702E-08	2.252E-08	6.449E-09	2.560E-09	1.390E-09	8.744E-10
NNW	5.006E-06	1.090E-06	3.054E-07	1.441E-07	8.473E-08	3.399E-08	1.001E-08	4.071E-09	2.244E-09	1.428E-09
N	1.110E-05	2.500E-06	7.256E-07	3.499E-07	2.093E-07	8.632E-08	2.669E-08	1.131E-08	6.387E-09	4.134E-09
NNE	8.317E-06	1.920E-06	5.708E-07	2.789E-07	1.683E-07	7.034E-08	2.215E-08	9.465E-09	5.357E-09	3.464E-09
NE	5.134E-06	1.179E-06	3.595E-07	1.783E-07	1.087E-07	4.618E-08	1.493E-08	6.501E-09	3.716E-09	2.418E-09
ENE	4.689E-06	1.084E-06	3.387E-07	1.701E-07	1.046E-07	4.505E-08	1.485E-08	6.550E-09	3.768E-09	2.461E-09
E	4.920E-06	1.140E-06	3.550E-07	1.779E-07	1.093E-07	4.694E-08	1.542E-08	6.784E-09	3.897E-09	2.542E-09
ESE	7.656E-06	1.752E-06	5.586E-07	2.838E-07	1.759E-07	7.668E-08	2.577E-08	1.154E-08	6.696E-09	4.400E-09
SE	6.950E-06	1.591E-06	4.999E-07	2.520E-07	1.554E-07	6.721E-08	2.234E-08	9.929E-09	5.743E-09	3.766E-09
SSE	6.011E-06	1.386E-06	4.224E-07	2.092E-07	1.275E-07	5.408E-08	1.743E-08	7.571E-09	4.320E-09	2.806E-09

VENTS GROUND LEVEL RELEASES - JUL-SEP 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) AT FIXED POINTS BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	.25	.50	.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
					DISTANCES IN MILES						
S	1.536E-07	5.195E-08	2.667E-08	1.268E-08	4.555E-09	2.259E-09	1.330E-09	8.709E-10	6.128E-10	4.541E-10	3.500E-10
SSW	8.825E-08	2.984E-08	1.532E-08	7.285E-09	2.617E-09	1.298E-09	7.641E-10	5.003E-10	3.520E-10	2.609E-10	2.011E-10
SW	5.058E-08	1.711E-08	8.783E-09	4.175E-09	1.500E-09	7.438E-10	4.380E-10	2.868E-10	2.018E-10	1.495E-10	1.152E-10
WSW	7.265E-08	2.457E-08	1.261E-08	5.997E-09	2.154E-09	1.068E-09	6.290E-10	4.119E-10	2.898E-10	2.148E-10	1.655E-10
W	1.197E-07	4.049E-08	2.079E-08	9.883E-09	3.550E-09	1.760E-09	1.037E-09	6.788E-10	4.776E-10	3.540E-10	2.728E-10
WNW	1.922E-07	6.498E-08	3.337E-08	1.586E-08	5.698E-09	2.826E-09	1.664E-09	1.089E-09	7.666E-10	5.681E-10	4.378E-10
NW	1.932E-07	6.533E-08	3.354E-08	1.595E-08	5.728E-09	2.841E-09	1.673E-09	1.095E-09	7.707E-10	5.712E-10	4.401E-10
NNW	2.058E-07	6.959E-08	3.573E-08	1.699E-08	6.102E-09	3.026E-09	1.782E-09	1.167E-09	8.209E-10	6.084E-10	4.688E-10
N	4.695E-07	1.588E-07	8.152E-08	3.875E-08	1.392E-08	6.903E-09	4.065E-09	2.662E-09	1.873E-09	1.388E-09	1.070E-09
NNE	2.493E-07	8.429E-08	4.328E-08	2.057E-08	7.390E-09	3.665E-09	2.158E-09	1.413E-09	9.943E-10	7.369E-10	5.678E-10
NE	9.864E-08	3.335E-08	1.713E-08	8.142E-09	2.925E-09	1.450E-09	8.540E-10	5.592E-10	3.935E-10	2.916E-10	2.247E-10
ENE	6.559E-08	2.218E-08	1.139E-08	5.414E-09	1.945E-09	9.645E-10	5.679E-10	3.719E-10	2.617E-10	1.939E-10	1.494E-10
E	6.141E-08	2.077E-08	1.066E-08	5.069E-09	1.821E-09	9.030E-10	5.317E-10	3.482E-10	2.450E-10	1.816E-10	1.399E-10
ESE	8.402E-08	2.841E-08	1.459E-08	6.935E-09	2.491E-09	1.235E-09	7.274E-10	4.763E-10	3.352E-10	2.484E-10	1.914E-10
SE	9.776E-08	3.306E-08	1.697E-08	8.070E-09	2.899E-09	1.438E-09	8.464E-10	5.542E-10	3.900E-10	2.890E-10	2.227E-10
SSE	1.139E-07	3.851E-08	1.977E-08	9.400E-09	3.377E-09	1.675E-09	9.860E-10	6.456E-10	4.543E-10	3.367E-10	2.594E-10

DIRECTION FROM SITE	5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
					DISTANCES IN MILES						
S	2.780E-10	1.235E-10	7.482E-11	3.782E-11	2.289E-11	1.535E-11	1.100E-11	8.257E-12	6.420E-12	5.128E-12	4.186E-12
SSW	1.597E-10	7.096E-11	4.298E-11	2.172E-11	1.315E-11	8.816E-12	6.317E-12	4.744E-12	3.688E-12	2.946E-12	2.405E-12
SW	9.155E-11	4.067E-11	2.464E-11	1.245E-11	7.537E-12	5.053E-12	3.621E-12	2.719E-12	2.114E-12	1.689E-12	1.378E-12
WSW	1.315E-10	5.841E-11	3.538E-11	1.788E-11	1.082E-11	7.257E-12	5.200E-12	3.905E-12	3.036E-12	2.425E-12	1.980E-12
W	2.167E-10	9.626E-11	5.831E-11	2.947E-11	1.784E-11	1.196E-11	8.570E-12	6.435E-12	5.004E-12	3.997E-12	3.262E-12
WNW	3.478E-10	1.545E-10	9.359E-11	4.731E-11	2.863E-11	1.920E-11	1.376E-11	1.033E-11	8.031E-12	6.415E-12	5.236E-12
NW	3.497E-10	1.553E-10	9.409E-11	4.756E-11	2.879E-11	1.930E-11	1.383E-11	1.038E-11	8.074E-12	6.450E-12	5.264E-12
NNW	3.725E-10	1.655E-10	1.002E-10	5.066E-11	3.066E-11	2.056E-11	1.473E-11	1.106E-11	8.601E-12	6.870E-12	5.608E-12
N	8.497E-10	3.775E-10	2.287E-10	1.156E-10	6.995E-11	4.690E-11	3.361E-11	2.524E-11	1.962E-11	1.567E-11	1.279E-11
NNE	4.511E-10	2.004E-10	1.214E-10	6.136E-11	3.714E-11	2.490E-11	1.784E-11	1.340E-11	1.042E-11	8.321E-12	6.792E-12
NE	1.785E-10	7.930E-11	4.804E-11	2.428E-11	1.470E-11	9.854E-12	7.061E-12	5.302E-12	4.122E-12	3.293E-12	2.688E-12
ENE	1.187E-10	5.274E-11	3.195E-11	1.615E-11	9.773E-12	6.553E-12	4.695E-12	3.526E-12	2.741E-12	2.190E-12	1.787E-12
E	1.112E-10	4.938E-11	2.991E-11	1.512E-11	9.151E-12	6.135E-12	4.396E-12	3.301E-12	2.567E-12	2.050E-12	1.673E-12
ESE	1.521E-10	6.755E-11	4.092E-11	2.068E-11	1.252E-11	8.393E-12	6.014E-12	4.516E-12	3.511E-12	2.805E-12	2.289E-12
SE	1.769E-10	7.860E-11	4.761E-11	2.407E-11	1.457E-11	9.766E-12	6.998E-12	5.255E-12	4.086E-12	3.264E-12	2.664E-12
SSE	2.061E-10	9.156E-11	5.547E-11	2.804E-11	1.697E-11	1.138E-11	8.152E-12	6.121E-12	4.759E-12	3.802E-12	3.103E-12

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
					SEGMENT BOUNDARIES IN MILES					
S	2.607E-08	5.340E-09	1.394E-09	6.261E-10	3.542E-10	1.362E-10	3.940E-11	1.562E-11	8.340E-12	5.162E-12
SSW	1.498E-08	3.068E-09	8.009E-10	3.597E-10	2.035E-10	7.825E-11	2.264E-11	8.972E-12	4.791E-12	2.966E-12
SW	8.585E-09	1.758E-09	4.590E-10	2.062E-10	1.166E-10	4.485E-11	1.298E-11	5.143E-12	2.746E-12	1.700E-12
WSW	1.233E-08	2.525E-09	6.593E-10	2.961E-10	1.675E-10	6.441E-11	1.863E-11	7.386E-12	3.944E-12	2.441E-12
W	2.032E-08	4.162E-09	1.086E-09	4.880E-10	2.761E-10	1.062E-10	3.071E-11	1.217E-11	6.500E-12	4.023E-12
WNW	3.261E-08	6.680E-09	1.744E-09	7.832E-10	4.431E-10	1.704E-10	4.929E-11	1.954E-11	1.043E-11	6.457E-12
NW	3.279E-08	6.716E-09	1.753E-09	7.874E-10	4.455E-10	1.713E-10	4.956E-11	1.964E-11	1.049E-11	6.492E-12
NNW	3.493E-08	7.154E-09	1.868E-09	8.388E-10	4.745E-10	1.825E-10	5.279E-11	2.092E-11	1.117E-11	6.915E-12
N	7.968E-08	1.632E-08	4.261E-09	1.913E-09	1.082E-09	4.163E-10	1.204E-10	4.773E-11	2.549E-11	1.578E-11
NNE	4.230E-08	8.664E-09	2.262E-09	1.016E-09	5.747E-10	2.210E-10	6.394E-11	2.534E-11	1.353E-11	8.376E-12
NE	1.674E-08	3.429E-09	8.951E-10	4.020E-10	2.274E-10	8.746E-11	2.530E-11	1.003E-11	5.355E-12	3.314E-12
ENE	1.113E-08	2.280E-09	5.953E-10	2.673E-10	1.512E-10	5.816E-11	1.683E-11	6.669E-12	3.561E-12	2.204E-12
E	1.042E-08	2.135E-09	5.573E-10	2.503E-10	1.416E-10	5.445E-11	1.575E-11	6.244E-12	3.334E-12	2.064E-12
ESE	1.426E-08	2.921E-09	7.625E-10	3.424E-10	1.937E-10	7.450E-11	2.155E-11	8.542E-12	4.561E-12	2.823E-12
SE	1.659E-08	3.398E-09	8.872E-10	3.984E-10	2.254E-10	8.668E-11	2.508E-11	9.939E-12	5.308E-12	3.285E-12
SSE	1.933E-08	3.959E-09	1.033E-09	4.642E-10	2.626E-10	1.010E-10	2.921E-11	1.158E-11	6.183E-12	3.827E-12

VENTS GROUND LEVEL RELEASES - JUL-SEP 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION FROM SITE	DIST. (MI)	X/Q (SEC/M3) NO DECAY UNDEPLETED	X/Q (SEC/M3) 2.26 DAY DECAY UNDEPLETED	X/Q (SEC/M3) 8.0 DAY DECAY DEPLETED	D/Q (PER SQ.METER)
A	Site Boundary	S	.80	3.3E-06	3.3E-06	2.9E-06	2.3E-08
A	Site Boundary	SSW	.82	2.1E-06	2.1E-06	1.9E-06	1.2E-08
A	Site Boundary	SW	.97	1.1E-06	1.1E-06	9.7E-07	4.5E-09
A	Site Boundary	WSW	.93	1.7E-06	1.7E-06	1.5E-06	7.3E-09
A	Site Boundary	W	.91	2.5E-06	2.5E-06	2.2E-06	1.3E-08
A	Site Boundary	WNW	.94	2.9E-06	2.9E-06	2.6E-06	1.9E-08
A	Site Boundary	NW	.81	3.4E-06	3.4E-06	3.0E-06	2.7E-08
A	Site Boundary	NNW	.69	6.6E-06	6.6E-06	5.9E-06	4.1E-08
A	Site Boundary	N	.67	1.5E-05	1.5E-05	1.4E-05	9.7E-08
A	Site Boundary	NNE	.60	1.3E-05	1.3E-05	1.2E-05	6.3E-08
A	Site Boundary	NE	.62	7.8E-06	7.7E-06	7.0E-06	2.3E-08
A	Site Boundary	ENE	.59	7.8E-06	7.7E-06	7.0E-06	1.7E-08
A	Site Boundary	E	.53	9.7E-06	9.6E-06	8.8E-06	1.9E-08
A	Site Boundary	ESE	.54	1.5E-05	1.5E-05	1.3E-05	2.5E-08
A	Site Boundary	SE	.65	9.9E-06	9.8E-06	8.8E-06	2.2E-08
A	Site Boundary	SSE	.81	5.8E-06	5.7E-06	5.1E-06	1.6E-08
A	Nearest Res	SW	1.30	5.6E-07	5.6E-07	4.8E-07	2.1E-09
A	Nearest Res	WSW	1.80	3.6E-07	3.6E-07	3.0E-07	1.4E-09
A	Nearest Res	WNW	1.90	5.6E-07	5.6E-07	4.6E-07	3.2E-09
A	Nearest Res	NW	.90	2.6E-06	2.6E-06	2.3E-06	2.1E-08
A	Nearest Res	NNW	1.90	6.6E-07	6.5E-07	5.4E-07	3.4E-09
A	Nearest Cow	NNW	3.50	1.8E-07	1.8E-07	1.4E-07	8.2E-10
A	Nearest Garde	SW	2.20	1.7E-07	1.7E-07	1.4E-07	5.9E-10
A	Nearest Garde	WSW	1.80	3.6E-07	3.6E-07	3.0E-07	1.4E-09
A	Nearest Garde	WNW	1.90	5.6E-07	5.6E-07	4.6E-07	3.2E-09
A	Nearest Garde	NNW	3.00	2.5E-07	2.5E-07	2.0E-07	1.2E-09

Atmospheric Diffusion Estimates

Ground Level Releases

October-December 2019

VENTS GROUND LEVEL RELEASES - OCT-DEC 2019
NO DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	4.164E-05	1.360E-05	7.036E-06	3.477E-06	1.411E-06	7.696E-07	4.905E-07	3.439E-07	2.571E-07	2.012E-07	1.629E-07
SSW	1.522E-05	5.528E-06	2.969E-06	1.473E-06	5.660E-07	2.964E-07	1.829E-07	1.248E-07	9.117E-08	6.990E-08	5.558E-08
SW	7.867E-06	2.901E-06	1.555E-06	7.692E-07	2.941E-07	1.535E-07	9.442E-08	6.428E-08	4.684E-08	3.584E-08	2.845E-08
WSW	6.511E-06	2.404E-06	1.300E-06	6.462E-07	2.488E-07	1.306E-07	8.072E-08	5.518E-08	4.036E-08	3.098E-08	2.466E-08
W	6.926E-06	2.559E-06	1.392E-06	6.933E-07	2.681E-07	1.411E-07	8.746E-08	5.991E-08	4.391E-08	3.377E-08	2.692E-08
WNW	1.496E-05	5.371E-06	2.924E-06	1.464E-06	5.701E-07	3.016E-07	1.876E-07	1.290E-07	9.477E-08	7.306E-08	5.837E-08
NW	1.959E-05	6.984E-06	3.820E-06	1.920E-06	7.515E-07	3.991E-07	2.491E-07	1.717E-07	1.264E-07	9.766E-08	7.817E-08
NNW	3.932E-05	1.286E-05	7.073E-06	3.613E-06	1.469E-06	8.018E-07	5.111E-07	3.583E-07	2.678E-07	2.095E-07	1.696E-07
N	1.400E-04	4.298E-05	2.272E-05	1.149E-05	4.805E-06	2.673E-06	1.728E-06	1.226E-06	9.249E-07	7.295E-07	5.948E-07
NNE	8.198E-05	2.515E-05	1.329E-05	6.724E-06	2.818E-06	1.569E-06	1.016E-06	7.208E-07	5.442E-07	4.294E-07	3.502E-07
NE	5.018E-05	1.554E-05	8.022E-06	3.997E-06	1.678E-06	9.364E-07	6.070E-07	4.314E-07	3.261E-07	2.576E-07	2.103E-07
ENE	4.475E-05	1.391E-05	7.262E-06	3.641E-06	1.515E-06	8.400E-07	5.419E-07	3.836E-07	2.890E-07	2.277E-07	1.854E-07
E	3.907E-05	1.210E-05	6.400E-06	3.234E-06	1.346E-06	7.463E-07	4.814E-07	3.407E-07	2.567E-07	2.022E-07	1.646E-07
ESE	4.649E-05	1.481E-05	7.868E-06	3.964E-06	1.631E-06	8.970E-07	5.753E-07	4.054E-07	3.042E-07	2.389E-07	1.940E-07
SE	4.455E-05	1.454E-05	7.760E-06	3.904E-06	1.585E-06	8.641E-07	5.504E-07	3.857E-07	2.881E-07	2.253E-07	1.824E-07
SSE	4.445E-05	1.459E-05	7.689E-06	3.837E-06	1.552E-06	8.437E-07	5.364E-07	3.753E-07	2.800E-07	2.188E-07	1.769E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	1.355E-07	7.086E-08	4.653E-08	2.720E-08	1.868E-08	1.398E-08	1.106E-08	9.076E-09	7.654E-09	6.590E-09	5.767E-09
SSW	4.546E-08	2.227E-08	1.393E-08	7.583E-09	4.940E-09	3.548E-09	2.710E-09	2.159E-09	1.774E-09	1.492E-09	1.279E-09
SW	2.322E-08	1.130E-08	7.028E-09	3.794E-09	2.454E-09	1.752E-09	1.332E-09	1.056E-09	8.643E-10	7.244E-10	6.186E-10
WSW	2.019E-08	9.931E-09	6.230E-09	3.406E-09	2.225E-09	1.601E-09	1.224E-09	9.767E-10	8.033E-10	6.762E-10	5.799E-10
W	2.207E-08	1.092E-08	6.882E-09	3.787E-09	2.486E-09	1.795E-09	1.378E-09	1.102E-09	9.085E-10	7.665E-10	6.586E-10
WNW	4.795E-08	2.391E-08	1.516E-08	8.414E-09	5.559E-09	4.037E-09	3.112E-09	2.499E-09	2.067E-09	1.750E-09	1.508E-09
NW	6.432E-08	3.228E-08	2.056E-08	1.149E-08	7.630E-09	5.563E-09	4.302E-09	3.464E-09	2.873E-09	2.437E-09	2.104E-09
NNW	1.409E-07	7.354E-08	4.815E-08	2.800E-08	1.913E-08	1.425E-08	1.122E-08	9.177E-09	7.712E-09	6.618E-09	5.774E-09
N	4.975E-07	2.660E-07	1.772E-07	1.055E-07	7.327E-08	5.532E-08	4.402E-08	3.631E-08	3.075E-08	2.657E-08	2.332E-08
NNE	2.931E-07	1.569E-07	1.046E-07	6.232E-08	4.330E-08	3.271E-08	2.603E-08	2.148E-08	1.820E-08	1.572E-08	1.380E-08
NE	1.761E-07	9.460E-08	6.322E-08	3.783E-08	2.636E-08	1.996E-08	1.592E-08	1.316E-08	1.116E-08	9.658E-09	8.489E-09
ENE	1.550E-07	8.257E-08	5.488E-08	3.260E-08	2.260E-08	1.705E-08	1.356E-08	1.118E-08	9.463E-09	8.174E-09	7.172E-09
E	1.376E-07	7.324E-08	4.865E-08	2.886E-08	1.999E-08	1.507E-08	1.197E-08	9.864E-09	8.346E-09	7.204E-09	6.319E-09
ESE	1.617E-07	8.534E-08	5.635E-08	3.316E-08	2.284E-08	1.714E-08	1.358E-08	1.116E-08	9.417E-09	8.113E-09	7.103E-09
SE	1.516E-07	7.907E-08	5.179E-08	3.014E-08	2.061E-08	1.538E-08	1.213E-08	9.927E-09	8.352E-09	7.176E-09	6.267E-09
SSE	1.469E-07	7.641E-08	4.996E-08	2.902E-08	1.983E-08	1.479E-08	1.165E-08	9.538E-09	8.024E-09	6.893E-09	6.020E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	6.912E-06	1.585E-06	5.063E-07	2.606E-07	1.641E-07	7.440E-08	2.771E-08	1.406E-08	9.101E-09	6.601E-09
SSW	2.873E-06	6.478E-07	1.899E-07	9.268E-08	5.607E-08	2.371E-08	7.818E-09	3.584E-09	2.170E-09	1.497E-09
SW	1.505E-06	3.372E-07	9.811E-08	4.763E-08	2.870E-08	1.205E-08	3.917E-09	1.771E-09	1.062E-09	7.267E-10
WSW	1.255E-06	2.846E-07	8.380E-08	4.102E-08	2.488E-08	1.057E-08	3.509E-09	1.617E-09	9.814E-10	6.782E-10
W	1.341E-06	3.061E-07	9.075E-08	4.462E-08	2.715E-08	1.160E-08	3.897E-09	1.812E-09	1.107E-09	7.686E-10
WNW	2.819E-06	6.494E-07	1.946E-07	9.627E-08	5.886E-08	2.536E-08	8.643E-09	4.073E-09	2.510E-09	1.754E-09
NW	3.679E-06	8.546E-07	2.581E-07	1.284E-07	7.882E-08	3.419E-08	1.179E-08	5.610E-09	3.478E-09	2.443E-09
NNW	6.821E-06	1.649E-06	5.275E-07	2.714E-07	1.708E-07	7.723E-08	2.854E-08	1.434E-08	9.204E-09	6.630E-09
N	2.223E-05	5.343E-06	1.779E-06	9.364E-07	5.987E-07	2.780E-07	1.071E-07	5.558E-08	3.639E-08	2.661E-08
NNE	1.301E-05	3.131E-06	1.045E-06	5.509E-07	3.525E-07	1.639E-07	6.325E-08	3.286E-08	2.153E-08	1.575E-08
NE	7.905E-06	1.864E-06	6.246E-07	3.300E-07	2.116E-07	9.877E-08	3.837E-08	2.005E-08	1.319E-08	9.671E-09
ENE	7.130E-06	1.688E-06	5.580E-07	2.926E-07	1.867E-07	8.635E-08	3.311E-08	1.713E-08	1.120E-08	8.185E-09
E	6.260E-06	1.499E-06	4.958E-07	2.599E-07	1.657E-07	7.661E-08	2.932E-08	1.514E-08	9.888E-09	7.214E-09
ESE	7.676E-06	1.823E-06	5.931E-07	3.082E-07	1.953E-07	8.942E-08	3.373E-08	1.724E-08	1.119E-08	8.125E-09
SE	7.553E-06	1.780E-06	5.682E-07	2.921E-07	1.837E-07	8.305E-08	3.072E-08	1.547E-08	9.955E-09	7.188E-09
SSE	7.512E-06	1.745E-06	5.539E-07	2.839E-07	1.782E-07	8.031E-08	2.959E-08	1.488E-08	9.566E-09	6.905E-09

VENTS GROUND LEVEL RELEASES - OCT-DEC 2019
2.260 DAY DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	4.155E-05	1.355E-05	6.999E-06	3.453E-06	1.396E-06	7.581E-07	4.811E-07	3.359E-07	2.500E-07	1.948E-07	1.571E-07
SSW	1.521E-05	5.519E-06	2.961E-06	1.468E-06	5.631E-07	2.943E-07	1.813E-07	1.235E-07	9.004E-08	6.891E-08	5.469E-08
SW	7.860E-06	2.896E-06	1.550E-06	7.663E-07	2.924E-07	1.523E-07	9.351E-08	6.353E-08	4.621E-08	3.529E-08	2.795E-08
WSW	6.503E-06	2.398E-06	1.296E-06	6.431E-07	2.471E-07	1.293E-07	7.976E-08	5.439E-08	3.968E-08	3.039E-08	2.413E-08
W	6.918E-06	2.552E-06	1.387E-06	6.899E-07	2.661E-07	1.397E-07	8.637E-08	5.902E-08	4.315E-08	3.310E-08	2.632E-08
WNW	1.494E-05	5.360E-06	2.915E-06	1.458E-06	5.666E-07	2.991E-07	1.857E-07	1.273E-07	9.337E-08	7.181E-08	5.725E-08
NW	1.957E-05	6.971E-06	3.810E-06	1.913E-06	7.472E-07	3.961E-07	2.467E-07	1.696E-07	1.247E-07	9.612E-08	7.678E-08
NNW	3.926E-05	1.282E-05	7.040E-06	3.591E-06	1.456E-06	7.917E-07	5.029E-07	3.514E-07	2.617E-07	2.041E-07	1.646E-07
N	1.397E-04	4.279E-05	2.257E-05	1.139E-05	4.744E-06	2.627E-06	1.691E-06	1.194E-06	8.969E-07	7.042E-07	5.716E-07
NNE	8.177E-05	2.502E-05	1.319E-05	6.659E-06	2.776E-06	1.538E-06	9.905E-07	6.993E-07	5.252E-07	4.124E-07	3.346E-07
NE	5.005E-05	1.547E-05	7.966E-06	3.960E-06	1.655E-06	9.187E-07	5.926E-07	4.190E-07	3.152E-07	2.477E-07	2.013E-07
ENE	4.465E-05	1.385E-05	7.217E-06	3.611E-06	1.496E-06	8.257E-07	5.302E-07	3.736E-07	2.802E-07	2.197E-07	1.781E-07
E	3.898E-05	1.204E-05	6.356E-06	3.205E-06	1.327E-06	7.323E-07	4.700E-07	3.310E-07	2.481E-07	1.945E-07	1.576E-07
ESE	4.641E-05	1.476E-05	7.829E-06	3.938E-06	1.614E-06	8.850E-07	5.656E-07	3.971E-07	2.970E-07	2.323E-07	1.880E-07
SE	4.448E-05	1.450E-05	7.724E-06	3.880E-06	1.570E-06	8.531E-07	5.415E-07	3.781E-07	2.815E-07	2.194E-07	1.769E-07
SSE	4.437E-05	1.455E-05	7.652E-06	3.813E-06	1.536E-06	8.322E-07	5.270E-07	3.673E-07	2.730E-07	2.125E-07	1.711E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	1.300E-07	6.654E-08	4.273E-08	2.391E-08	1.573E-08	1.129E-08	8.574E-09	6.765E-09	5.491E-09	4.556E-09	3.846E-09
SSW	4.464E-08	2.166E-08	1.342E-08	7.171E-09	4.584E-09	3.231E-09	2.422E-09	1.894E-09	1.528E-09	1.263E-09	1.063E-09
SW	2.278E-08	1.097E-08	6.759E-09	3.578E-09	2.270E-09	1.590E-09	1.185E-09	9.226E-10	7.409E-10	6.094E-10	5.109E-10
WSW	1.971E-08	9.580E-09	5.939E-09	3.171E-09	2.023E-09	1.422E-09	1.063E-09	8.289E-10	6.665E-10	5.486E-10	4.601E-10
W	2.153E-08	1.052E-08	6.544E-09	3.511E-09	2.248E-09	1.584E-09	1.186E-09	9.261E-10	7.455E-10	6.142E-10	5.155E-10
WNW	4.693E-08	2.314E-08	1.450E-08	7.871E-09	5.085E-09	3.613E-09	2.725E-09	2.142E-09	1.735E-09	1.439E-09	1.215E-09
NW	6.305E-08	3.132E-08	1.974E-08	1.081E-08	7.031E-09	5.025E-09	3.810E-09	3.010E-09	2.449E-09	2.039E-09	1.729E-09
NNW	1.364E-07	6.998E-08	4.507E-08	2.537E-08	1.679E-08	1.213E-08	9.271E-09	7.363E-09	6.016E-09	5.024E-09	4.268E-09
N	4.760E-07	2.488E-07	1.621E-07	9.242E-08	6.155E-08	4.462E-08	3.414E-08	2.712E-08	2.215E-08	1.847E-08	1.567E-08
NNE	2.786E-07	1.453E-07	9.446E-08	5.358E-08	3.549E-08	2.559E-08	1.947E-08	1.538E-08	1.249E-08	1.037E-08	8.747E-09
NE	1.677E-07	8.788E-08	5.731E-08	3.268E-08	2.174E-08	1.574E-08	1.202E-08	9.526E-09	7.761E-09	6.458E-09	5.466E-09
ENE	1.482E-07	7.718E-08	5.015E-08	2.849E-08	1.892E-08	1.368E-08	1.045E-08	8.285E-09	6.754E-09	5.624E-09	4.764E-09
E	1.310E-07	6.806E-08	4.411E-08	2.494E-08	1.649E-08	1.187E-08	9.030E-09	7.130E-09	5.789E-09	4.802E-09	4.052E-09
ESE	1.562E-07	8.095E-08	5.251E-08	2.984E-08	1.988E-08	1.444E-08	1.108E-08	8.833E-09	7.239E-09	6.062E-09	5.163E-09
SE	1.465E-07	7.505E-08	4.828E-08	2.712E-08	1.791E-08	1.292E-08	9.855E-09	7.814E-09	6.374E-09	5.315E-09	4.509E-09
SSE	1.415E-07	7.218E-08	4.626E-08	2.583E-08	1.697E-08	1.219E-08	9.259E-09	7.312E-09	5.942E-09	4.936E-09	4.172E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	6.878E-06	1.570E-06	4.969E-07	2.535E-07	1.582E-07	7.007E-08	2.446E-08	1.139E-08	6.797E-09	4.570E-09
SSW	2.866E-06	6.448E-07	1.883E-07	9.155E-08	5.518E-08	2.311E-08	7.411E-09	3.268E-09	1.906E-09	1.267E-09
SW	1.501E-06	3.354E-07	9.719E-08	4.700E-08	2.821E-08	1.172E-08	3.704E-09	1.610E-09	9.285E-10	6.119E-10
WSW	1.251E-06	2.828E-07	8.283E-08	4.035E-08	2.435E-08	1.021E-08	3.276E-09	1.439E-09	8.339E-10	5.508E-10
W	1.336E-06	3.041E-07	8.966E-08	4.385E-08	2.655E-08	1.120E-08	3.624E-09	1.602E-09	9.316E-10	6.165E-10
WNW	2.811E-06	6.458E-07	1.926E-07	9.486E-08	5.774E-08	2.459E-08	8.107E-09	3.650E-09	2.154E-09	1.444E-09
NW	3.669E-06	8.502E-07	2.557E-07	1.267E-07	7.742E-08	3.322E-08	1.111E-08	5.074E-09	3.025E-09	2.046E-09
NNW	6.791E-06	1.635E-06	5.193E-07	2.654E-07	1.658E-07	7.366E-08	2.593E-08	1.223E-08	7.395E-09	5.038E-09
N	2.210E-05	5.281E-06	1.742E-06	9.084E-07	5.755E-07	2.608E-07	9.419E-08	4.494E-08	2.723E-08	1.852E-08
NNE	1.292E-05	3.089E-06	1.020E-06	5.320E-07	3.369E-07	1.523E-07	5.463E-08	2.578E-08	1.545E-08	1.040E-08
NE	7.853E-06	1.840E-06	6.101E-07	3.192E-07	2.026E-07	9.203E-08	3.329E-08	1.585E-08	9.566E-09	6.477E-09
ENE	7.088E-06	1.668E-06	5.464E-07	2.839E-07	1.794E-07	8.095E-08	2.905E-08	1.379E-08	8.320E-09	5.640E-09
E	6.219E-06	1.480E-06	4.844E-07	2.514E-07	1.587E-07	7.141E-08	2.544E-08	1.197E-08	7.162E-09	4.816E-09
ESE	7.641E-06	1.807E-06	5.834E-07	3.009E-07	1.893E-07	8.502E-08	3.045E-08	1.455E-08	8.868E-09	6.078E-09
SE	7.521E-06	1.765E-06	5.592E-07	2.854E-07	1.782E-07	7.903E-08	2.773E-08	1.302E-08	7.849E-09	5.330E-09
SSE	7.478E-06	1.729E-06	5.445E-07	2.769E-07	1.724E-07	7.607E-08	2.644E-08	1.229E-08	7.347E-09	4.951E-09

VENTS GROUND LEVEL RELEASES - OCT-DEC 2019
8.000 DAY DECAY, DEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	3.938E-05	1.240E-05	6.261E-06	3.038E-06	1.195E-06	6.346E-07	3.951E-07	2.713E-07	1.990E-07	1.530E-07	1.219E-07
SSW	1.440E-05	5.046E-06	2.644E-06	1.288E-06	4.800E-07	2.450E-07	1.478E-07	9.885E-08	7.089E-08	5.344E-08	4.183E-08
SW	7.444E-06	2.648E-06	1.385E-06	6.726E-07	2.494E-07	1.268E-07	7.627E-08	5.089E-08	3.641E-08	2.739E-08	2.140E-08
WSW	6.160E-06	2.194E-06	1.158E-06	5.649E-07	2.109E-07	1.078E-07	6.517E-08	4.365E-08	3.134E-08	2.365E-08	1.853E-08
W	6.553E-06	2.335E-06	1.239E-06	6.061E-07	2.272E-07	1.165E-07	7.059E-08	4.739E-08	3.409E-08	2.577E-08	2.022E-08
WNW	1.415E-05	4.902E-06	2.603E-06	1.280E-06	4.833E-07	2.491E-07	1.515E-07	1.021E-07	7.364E-08	5.581E-08	4.389E-08
NW	1.854E-05	6.375E-06	3.402E-06	1.679E-06	6.372E-07	3.298E-07	2.012E-07	1.359E-07	9.827E-08	7.463E-08	5.880E-08
NNW	3.720E-05	1.173E-05	6.294E-06	3.157E-06	1.245E-06	6.616E-07	4.121E-07	2.830E-07	2.076E-07	1.596E-07	1.271E-07
N	1.324E-04	3.920E-05	2.021E-05	1.003E-05	4.066E-06	2.202E-06	1.391E-06	9.663E-07	7.154E-07	5.544E-07	4.446E-07
NNE	7.753E-05	2.293E-05	1.182E-05	5.870E-06	2.383E-06	1.292E-06	8.168E-07	5.676E-07	4.203E-07	3.258E-07	2.614E-07
NE	4.745E-05	1.418E-05	7.135E-06	3.490E-06	1.420E-06	7.712E-07	4.883E-07	3.398E-07	2.520E-07	1.955E-07	1.570E-07
ENE	4.233E-05	1.268E-05	6.460E-06	3.180E-06	1.282E-06	6.922E-07	4.362E-07	3.024E-07	2.235E-07	1.730E-07	1.386E-07
E	3.695E-05	1.103E-05	5.692E-06	2.824E-06	1.139E-06	6.147E-07	3.873E-07	2.684E-07	1.984E-07	1.535E-07	1.229E-07
ESE	4.398E-05	1.352E-05	7.002E-06	3.463E-06	1.381E-06	7.399E-07	4.638E-07	3.201E-07	2.358E-07	1.819E-07	1.454E-07
SE	4.215E-05	1.327E-05	6.906E-06	3.411E-06	1.343E-06	7.129E-07	4.438E-07	3.046E-07	2.233E-07	1.717E-07	1.367E-07
SSE	4.205E-05	1.331E-05	6.843E-06	3.353E-06	1.314E-06	6.959E-07	4.323E-07	2.963E-07	2.169E-07	1.665E-07	1.325E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	9.979E-08	4.905E-08	3.049E-08	1.628E-08	1.036E-08	7.248E-09	5.388E-09	4.176E-09	3.338E-09	2.730E-09	2.275E-09
SSW	3.371E-08	1.557E-08	9.258E-09	4.640E-09	2.823E-09	1.910E-09	1.382E-09	1.048E-09	8.225E-10	6.624E-10	5.446E-10
SW	1.722E-08	7.898E-09	4.669E-09	2.320E-09	1.402E-09	9.430E-10	6.792E-10	5.128E-10	4.008E-10	3.217E-10	2.636E-10
WSW	1.495E-08	6.930E-09	4.129E-09	2.075E-09	1.264E-09	8.562E-10	6.199E-10	4.702E-10	3.689E-10	2.970E-10	2.442E-10
W	1.634E-08	7.617E-09	4.557E-09	2.304E-09	1.410E-09	9.579E-10	6.955E-10	5.286E-10	4.155E-10	3.351E-10	2.758E-10
WNW	3.553E-08	1.670E-08	1.005E-08	5.131E-09	3.162E-09	2.161E-09	1.577E-09	1.204E-09	9.503E-10	7.693E-10	6.353E-10
NW	4.767E-08	2.256E-08	1.365E-08	7.018E-09	4.349E-09	2.986E-09	2.187E-09	1.676E-09	1.326E-09	1.077E-09	8.915E-10
NNW	1.041E-07	5.110E-08	3.173E-08	1.691E-08	1.074E-08	7.510E-09	5.581E-09	4.326E-09	3.458E-09	2.830E-09	2.360E-09
N	3.662E-07	1.839E-07	1.160E-07	6.308E-08	4.060E-08	2.867E-08	2.146E-08	1.673E-08	1.343E-08	1.103E-08	9.228E-09
NNE	2.153E-07	1.082E-07	6.820E-08	3.706E-08	2.383E-08	1.680E-08	1.256E-08	9.777E-09	7.839E-09	6.430E-09	5.369E-09
NE	1.294E-07	6.528E-08	4.127E-08	2.253E-08	1.453E-08	1.027E-08	7.698E-09	6.004E-09	4.823E-09	3.963E-09	3.315E-09
ENE	1.140E-07	5.708E-08	3.591E-08	1.948E-08	1.251E-08	8.822E-09	6.596E-09	5.137E-09	4.122E-09	3.383E-09	2.828E-09
E	1.011E-07	5.055E-08	3.177E-08	1.719E-08	1.102E-08	7.757E-09	5.790E-09	4.502E-09	3.606E-09	2.956E-09	2.467E-09
ESE	1.193E-07	5.925E-08	3.708E-08	1.998E-08	1.279E-08	9.002E-09	6.724E-09	5.234E-09	4.199E-09	3.448E-09	2.884E-09
SE	1.119E-07	5.490E-08	3.409E-08	1.816E-08	1.154E-08	8.068E-09	5.996E-09	4.647E-09	3.714E-09	3.039E-09	2.534E-09
SSE	1.083E-07	5.299E-08	3.282E-08	1.743E-08	1.105E-08	7.712E-09	5.722E-09	4.428E-09	3.534E-09	2.888E-09	2.405E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	6.193E-06	1.355E-06	4.095E-07	2.021E-07	1.229E-07	5.208E-08	1.680E-08	7.333E-09	4.203E-09	2.741E-09
SSW	2.575E-06	5.552E-07	1.541E-07	7.223E-08	4.226E-08	1.680E-08	4.858E-09	1.942E-09	1.058E-09	6.662E-10
SW	1.349E-06	2.889E-07	7.959E-08	3.711E-08	2.163E-08	8.534E-09	2.434E-09	9.598E-10	5.177E-10	3.236E-10
WSW	1.124E-06	2.438E-07	6.794E-08	3.193E-08	1.872E-08	7.467E-09	2.171E-09	8.705E-10	4.744E-10	2.987E-10
W	1.201E-06	2.622E-07	7.356E-08	3.472E-08	2.043E-08	8.195E-09	2.407E-09	9.735E-10	5.332E-10	3.370E-10
WNW	2.526E-06	5.563E-07	1.578E-07	7.497E-08	4.432E-08	1.793E-08	5.350E-09	2.194E-09	1.214E-09	7.733E-10
NW	3.297E-06	7.321E-07	2.094E-07	1.000E-07	5.937E-08	2.418E-08	7.306E-09	3.030E-09	1.689E-09	1.082E-09
NNW	6.108E-06	1.410E-06	4.270E-07	2.109E-07	1.282E-07	5.426E-08	1.746E-08	7.600E-09	4.354E-09	2.842E-09
N	1.990E-05	4.564E-06	1.438E-06	7.257E-07	4.481E-07	1.942E-07	6.484E-08	2.897E-08	1.682E-08	1.108E-08
NNE	1.165E-05	2.673E-06	8.439E-07	4.264E-07	2.634E-07	1.142E-07	3.810E-08	1.698E-08	9.834E-09	6.455E-09
NE	7.079E-06	1.591E-06	5.043E-07	2.556E-07	1.582E-07	6.887E-08	2.314E-08	1.038E-08	6.038E-09	3.978E-09
ENE	6.386E-06	1.442E-06	4.509E-07	2.268E-07	1.397E-07	6.033E-08	2.003E-08	8.916E-09	5.167E-09	3.396E-09
E	5.604E-06	1.280E-06	4.004E-07	2.013E-07	1.239E-07	5.344E-08	1.769E-08	7.841E-09	4.529E-09	2.967E-09
ESE	6.877E-06	1.559E-06	4.799E-07	2.393E-07	1.466E-07	6.275E-08	2.059E-08	9.102E-09	5.266E-09	3.462E-09
SE	6.766E-06	1.522E-06	4.599E-07	2.269E-07	1.379E-07	5.831E-08	1.876E-08	8.164E-09	4.677E-09	3.052E-09
SSE	6.730E-06	1.492E-06	4.482E-07	2.204E-07	1.336E-07	5.632E-08	1.801E-08	7.806E-09	4.457E-09	2.901E-09

VENTS GROUND LEVEL RELEASES - OCT-DEC 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) AT FIXED POINTS BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	DISTANCES IN MILES .25	.50	.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
S	2.181E-07	7.376E-08	3.787E-08	1.801E-08	6.467E-09	3.207E-09	1.889E-09	1.237E-09	8.701E-10	6.449E-10	4.969E-10
SSW	1.031E-07	3.485E-08	1.789E-08	8.507E-09	3.056E-09	1.515E-09	8.923E-10	5.843E-10	4.111E-10	3.047E-10	2.348E-10
SW	4.309E-08	1.457E-08	7.482E-09	3.557E-09	1.278E-09	6.336E-10	3.731E-10	2.443E-10	1.719E-10	1.274E-10	9.817E-11
WSW	2.631E-08	8.898E-09	4.569E-09	2.172E-09	7.802E-10	3.869E-10	2.278E-10	1.492E-10	1.050E-10	7.779E-11	5.995E-11
W	2.952E-08	9.982E-09	5.125E-09	2.437E-09	8.752E-10	4.340E-10	2.556E-10	1.673E-10	1.177E-10	8.726E-11	6.725E-11
WNW	9.057E-08	3.063E-08	1.572E-08	7.476E-09	2.685E-09	1.332E-09	7.841E-10	5.134E-10	3.613E-10	2.677E-10	2.063E-10
NW	1.305E-07	4.414E-08	2.266E-08	1.077E-08	3.870E-09	1.919E-09	1.130E-09	7.400E-10	5.207E-10	3.859E-10	2.974E-10
NNW	1.475E-07	4.987E-08	2.560E-08	1.217E-08	4.372E-09	2.168E-09	1.277E-09	8.360E-10	5.883E-10	4.360E-10	3.360E-10
N	3.803E-07	1.286E-07	6.603E-08	3.139E-08	1.128E-08	5.592E-09	3.293E-09	2.156E-09	1.517E-09	1.124E-09	8.664E-10
NNE	1.533E-07	5.185E-08	2.662E-08	1.266E-08	4.547E-09	2.255E-09	1.328E-09	8.693E-10	6.117E-10	4.533E-10	3.493E-10
NE	1.079E-07	3.649E-08	1.874E-08	8.908E-09	3.200E-09	1.587E-09	9.343E-10	6.118E-10	4.305E-10	3.190E-10	2.459E-10
ENE	1.209E-07	4.089E-08	2.100E-08	9.982E-09	3.586E-09	1.778E-09	1.047E-09	6.856E-10	4.824E-10	3.575E-10	2.755E-10
E	9.371E-08	3.169E-08	1.627E-08	7.735E-09	2.778E-09	1.378E-09	8.113E-10	5.312E-10	3.738E-10	2.770E-10	2.135E-10
ESE	1.909E-07	6.455E-08	3.314E-08	1.576E-08	5.660E-09	2.807E-09	1.653E-09	1.082E-09	7.615E-10	5.643E-10	4.349E-10
SE	2.369E-07	8.011E-08	4.113E-08	1.956E-08	7.024E-09	3.484E-09	2.051E-09	1.343E-09	9.451E-10	7.004E-10	5.397E-10
SSE	2.433E-07	8.229E-08	4.225E-08	2.009E-08	7.215E-09	3.578E-09	2.107E-09	1.380E-09	9.707E-10	7.194E-10	5.544E-10

DIRECTION FROM SITE	DISTANCES IN MILES 5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
S	3.948E-10	1.754E-10	1.062E-10	5.370E-11	3.250E-11	2.179E-11	1.561E-11	1.172E-11	9.116E-12	7.282E-12	5.944E-12
SSW	1.865E-10	8.287E-11	5.020E-11	2.537E-11	1.536E-11	1.030E-11	7.378E-12	5.540E-12	4.307E-12	3.441E-12	2.808E-12
SW	7.799E-11	3.465E-11	2.099E-11	1.061E-11	6.420E-12	4.305E-12	3.085E-12	2.316E-12	1.801E-12	1.439E-12	1.174E-12
WSW	4.762E-11	2.116E-11	1.282E-11	6.478E-12	3.921E-12	2.629E-12	1.884E-12	1.414E-12	1.100E-12	8.784E-13	7.170E-13
W	5.342E-11	2.373E-11	1.438E-11	7.266E-12	4.398E-12	2.949E-12	2.113E-12	1.587E-12	1.234E-12	9.854E-13	8.043E-13
WNW	1.639E-10	7.282E-11	4.411E-11	2.229E-11	1.349E-11	9.047E-12	6.483E-12	4.868E-12	3.785E-12	3.023E-12	2.468E-12
NW	2.362E-10	1.049E-10	6.357E-11	3.213E-11	1.945E-11	1.304E-11	9.344E-12	7.016E-12	5.455E-12	4.358E-12	3.557E-12
NNW	2.669E-10	1.186E-10	7.182E-11	3.630E-11	2.197E-11	1.473E-11	1.056E-11	7.926E-12	6.163E-12	4.923E-12	4.018E-12
N	6.883E-10	3.058E-10	1.852E-10	9.363E-11	5.667E-11	3.799E-11	2.722E-11	2.044E-11	1.589E-11	1.270E-11	1.036E-11
NNE	2.775E-10	1.233E-10	7.468E-11	3.775E-11	2.285E-11	1.532E-11	1.098E-11	8.242E-12	6.409E-12	5.119E-12	4.178E-12
NE	1.953E-10	8.677E-11	5.256E-11	2.657E-11	1.608E-11	1.078E-11	7.725E-12	5.800E-12	4.510E-12	3.603E-12	2.941E-12
ENE	2.189E-10	9.723E-11	5.890E-11	2.977E-11	1.802E-11	1.208E-11	8.657E-12	6.500E-12	5.054E-12	4.037E-12	3.295E-12
E	1.696E-10	7.534E-11	4.564E-11	2.307E-11	1.396E-11	9.361E-12	6.708E-12	5.037E-12	3.916E-12	3.128E-12	2.553E-12
ESE	3.455E-10	1.535E-10	9.297E-11	4.699E-11	2.844E-11	1.907E-11	1.366E-11	1.026E-11	7.978E-12	6.373E-12	5.201E-12
SE	4.288E-10	1.905E-10	1.154E-10	5.832E-11	3.530E-11	2.367E-11	1.696E-11	1.273E-11	9.901E-12	7.909E-12	6.456E-12
SSE	4.404E-10	1.957E-10	1.185E-10	5.990E-11	3.626E-11	2.431E-11	1.742E-11	1.308E-11	1.017E-11	8.124E-12	6.631E-12

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES .5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	3.702E-08	7.582E-09	1.979E-09	8.890E-10	5.029E-10	1.934E-10	5.595E-11	2.218E-11	1.184E-11	7.330E-12
SSW	1.749E-08	3.583E-09	9.353E-10	4.201E-10	2.376E-10	9.139E-11	2.644E-11	1.048E-11	5.595E-12	3.463E-12
SW	7.313E-09	1.498E-09	3.910E-10	1.756E-10	9.936E-11	3.821E-11	1.105E-11	4.381E-12	2.339E-12	1.448E-12
WSW	4.465E-09	9.147E-10	2.388E-10	1.072E-10	6.067E-11	2.333E-11	6.749E-12	2.675E-12	1.429E-12	8.842E-13
W	5.009E-09	1.026E-09	2.679E-10	1.203E-10	6.806E-11	2.617E-11	7.572E-12	3.001E-12	1.603E-12	9.919E-13
WNW	1.537E-08	3.148E-09	8.219E-10	3.691E-10	2.088E-10	8.030E-11	2.323E-11	9.207E-12	4.917E-12	3.043E-12
NW	2.215E-08	4.537E-09	1.185E-09	5.320E-10	3.010E-10	1.157E-10	3.348E-11	1.327E-11	7.086E-12	4.386E-12
NNW	2.503E-08	5.126E-09	1.338E-09	6.010E-10	3.400E-10	1.308E-10	3.783E-11	1.499E-11	8.006E-12	4.955E-12
N	6.454E-08	1.322E-08	3.451E-09	1.550E-09	8.769E-10	3.372E-10	9.756E-11	3.867E-11	2.065E-11	1.278E-11
NNE	2.602E-08	5.330E-09	1.392E-09	6.250E-10	3.536E-10	1.360E-10	3.933E-11	1.559E-11	8.325E-12	5.153E-12
NE	1.831E-08	3.751E-09	9.793E-10	4.398E-10	2.488E-10	9.568E-11	2.768E-11	1.097E-11	5.859E-12	3.626E-12
ENE	2.052E-08	4.204E-09	1.097E-09	4.929E-10	2.788E-10	1.072E-10	3.102E-11	1.229E-11	6.565E-12	4.064E-12
E	1.590E-08	3.257E-09	8.504E-10	3.819E-10	2.161E-10	8.309E-11	2.404E-11	9.527E-12	5.087E-12	3.149E-12
ESE	3.239E-08	6.636E-09	1.732E-09	7.780E-10	4.401E-10	1.693E-10	4.896E-11	1.941E-11	1.036E-11	6.414E-12
SE	4.021E-08	8.235E-09	2.150E-09	9.656E-10	5.462E-10	2.101E-10	6.077E-11	2.409E-11	1.286E-11	7.961E-12
SSE	4.130E-08	8.459E-09	2.208E-09	9.918E-10	5.611E-10	2.158E-10	6.242E-11	2.474E-11	1.321E-11	8.177E-12

VENTS GROUND LEVEL RELEASES - OCT-DEC 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION FROM SITE	DIST. (MI)	X/Q (SEC/M3) NO DECAY UNDEPLETED	X/Q (SEC/M3) 2.26 DAY DECAY UNDEPLETED	X/Q (SEC/M3) 8.0 DAY DECAY DEPLETED	D/Q (PER SQ.METER)
A	Site Boundary	S	.80	6.0E-06	6.0E-06	5.3E-06	3.2E-08
A	Site Boundary	SSW	.82	2.4E-06	2.4E-06	2.1E-06	1.4E-08
A	Site Boundary	SW	.97	8.2E-07	8.2E-07	7.2E-07	3.8E-09
A	Site Boundary	WSW	.93	7.8E-07	7.8E-07	6.9E-07	2.7E-09
A	Site Boundary	W	.91	8.6E-07	8.6E-07	7.6E-07	3.1E-09
A	Site Boundary	WNW	.94	1.7E-06	1.7E-06	1.5E-06	8.8E-09
A	Site Boundary	NW	.81	3.2E-06	3.2E-06	2.8E-06	1.9E-08
A	Site Boundary	NNW	.69	8.0E-06	8.0E-06	7.2E-06	3.0E-08
A	Site Boundary	N	.67	2.7E-05	2.7E-05	2.4E-05	7.9E-08
A	Site Boundary	NNE	.60	1.9E-05	1.9E-05	1.7E-05	3.9E-08
A	Site Boundary	NE	.62	1.1E-05	1.1E-05	9.6E-06	2.5E-08
A	Site Boundary	ENE	.59	1.1E-05	1.1E-05	9.7E-06	3.1E-08
A	Site Boundary	E	.53	1.1E-05	1.1E-05	1.0E-05	2.9E-08
A	Site Boundary	ESE	.54	1.3E-05	1.3E-05	1.2E-05	5.7E-08
A	Site Boundary	SE	.65	9.6E-06	9.6E-06	8.6E-06	5.2E-08
A	Site Boundary	SSE	.81	6.4E-06	6.3E-06	5.6E-06	3.5E-08
A	Nearest Res	SW	1.30	4.1E-07	4.1E-07	3.5E-07	1.8E-09
A	Nearest Res	WSW	1.80	1.6E-07	1.6E-07	1.4E-07	5.0E-10
A	Nearest Res	WNW	1.90	3.4E-07	3.3E-07	2.8E-07	1.5E-09
A	Nearest Res	NW	.90	2.5E-06	2.5E-06	2.2E-06	1.4E-08
A	Nearest Res	NNW	1.90	8.9E-07	8.8E-07	7.4E-07	2.5E-09
A	Nearest Cow	NNW	3.50	2.7E-07	2.6E-07	2.1E-07	5.9E-10
A	Nearest Garde	SW	2.20	1.2E-07	1.2E-07	1.0E-07	5.0E-10
A	Nearest Garde	WSW	1.80	1.6E-07	1.6E-07	1.4E-07	5.0E-10
A	Nearest Garde	WNW	1.90	3.4E-07	3.3E-07	2.8E-07	1.5E-09
A	Nearest Garde	NNW	3.00	3.6E-07	3.5E-07	2.8E-07	8.4E-10

Atmospheric Diffusion Estimates

Ground Level Releases

July-December 2019

B270

VENTS GROUND LEVEL RELEASES - JUL-DEC 2019
NO DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	3.071E-05	1.032E-05	5.427E-06	2.692E-06	1.076E-06	5.806E-07	3.670E-07	2.555E-07	1.899E-07	1.479E-07	1.192E-07
SSW	1.445E-05	5.266E-06	2.832E-06	1.405E-06	5.394E-07	2.825E-07	1.743E-07	1.190E-07	8.693E-08	6.666E-08	5.302E-08
SW	9.289E-06	3.371E-06	1.818E-06	9.036E-07	3.481E-07	1.828E-07	1.130E-07	7.729E-08	5.655E-08	4.343E-08	3.458E-08
WSW	1.109E-05	3.961E-06	2.098E-06	1.034E-06	3.982E-07	2.091E-07	1.294E-07	8.852E-08	6.481E-08	4.980E-08	3.968E-08
W	1.392E-05	5.085E-06	2.723E-06	1.346E-06	5.139E-07	2.681E-07	1.649E-07	1.123E-07	8.189E-08	6.268E-08	4.977E-08
WNW	2.063E-05	7.486E-06	4.024E-06	1.997E-06	7.674E-07	4.021E-07	2.482E-07	1.695E-07	1.238E-07	9.499E-08	7.555E-08
NW	2.034E-05	7.362E-06	3.983E-06	1.986E-06	7.679E-07	4.043E-07	2.505E-07	1.716E-07	1.257E-07	9.668E-08	7.708E-08
NNW	3.473E-05	1.193E-05	6.524E-06	3.297E-06	1.312E-06	7.049E-07	4.441E-07	3.084E-07	2.286E-07	1.776E-07	1.429E-07
N	1.046E-04	3.354E-05	1.801E-05	9.113E-06	3.736E-06	2.050E-06	1.313E-06	9.237E-07	6.925E-07	5.433E-07	4.408E-07
NNE	6.702E-05	2.132E-05	1.152E-05	5.859E-06	2.412E-06	1.328E-06	8.519E-07	6.004E-07	4.507E-07	3.539E-07	2.874E-07
NE	4.172E-05	1.315E-05	6.927E-06	3.481E-06	1.445E-06	8.002E-07	5.157E-07	3.648E-07	2.747E-07	2.163E-07	1.761E-07
ENE	3.824E-05	1.183E-05	6.243E-06	3.151E-06	1.311E-06	7.267E-07	4.687E-07	3.317E-07	2.499E-07	1.968E-07	1.603E-07
E	3.627E-05	1.122E-05	5.984E-06	3.038E-06	1.263E-06	6.996E-07	4.509E-07	3.189E-07	2.401E-07	1.890E-07	1.539E-07
ESE	5.024E-05	1.555E-05	8.182E-06	4.123E-06	1.719E-06	9.545E-07	6.163E-07	4.366E-07	3.292E-07	2.594E-07	2.114E-07
SE	4.625E-05	1.468E-05	7.799E-06	3.932E-06	1.619E-06	8.913E-07	5.719E-07	4.031E-07	3.026E-07	2.377E-07	1.931E-07
SSE	4.167E-05	1.353E-05	7.244E-06	3.653E-06	1.484E-06	8.097E-07	5.159E-07	3.616E-07	2.702E-07	2.114E-07	1.711E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	9.877E-08	5.090E-08	3.307E-08	1.905E-08	1.295E-08	9.619E-09	7.557E-09	6.169E-09	5.179E-09	4.441E-09	3.872E-09
SSW	4.337E-08	2.127E-08	1.331E-08	7.262E-09	4.742E-09	3.411E-09	2.609E-09	2.081E-09	1.712E-09	1.441E-09	1.236E-09
SW	2.832E-08	1.396E-08	8.778E-09	4.814E-09	3.153E-09	2.274E-09	1.743E-09	1.393E-09	1.148E-09	9.677E-10	8.310E-10
WSW	3.252E-08	1.608E-08	1.014E-08	5.595E-09	3.690E-09	2.678E-09	2.063E-09	1.657E-09	1.371E-09	1.161E-09	1.001E-09
W	4.066E-08	1.983E-08	1.236E-08	6.709E-09	4.371E-09	3.140E-09	2.398E-09	1.910E-09	1.570E-09	1.320E-09	1.131E-09
WNW	6.182E-08	3.033E-08	1.900E-08	1.037E-08	6.772E-09	4.874E-09	3.729E-09	2.975E-09	2.448E-09	2.061E-09	1.768E-09
NW	6.319E-08	3.125E-08	1.969E-08	1.084E-08	7.116E-09	5.143E-09	3.949E-09	3.160E-09	2.607E-09	2.201E-09	1.892E-09
NNW	1.182E-07	6.041E-08	3.899E-08	2.223E-08	1.497E-08	1.104E-08	8.619E-09	6.996E-09	5.844E-09	4.988E-09	4.331E-09
N	3.672E-07	1.933E-07	1.274E-07	7.479E-08	5.145E-08	3.856E-08	3.051E-08	2.505E-08	2.112E-08	1.818E-08	1.591E-08
NNE	2.396E-07	1.265E-07	8.347E-08	4.909E-08	3.380E-08	2.535E-08	2.006E-08	1.648E-08	1.390E-08	1.197E-08	1.047E-08
NE	1.471E-07	7.828E-08	5.198E-08	3.082E-08	2.135E-08	1.609E-08	1.278E-08	1.053E-08	8.908E-09	7.690E-09	6.744E-09
ENE	1.339E-07	7.131E-08	4.737E-08	2.810E-08	1.947E-08	1.468E-08	1.166E-08	9.610E-09	8.131E-09	7.020E-09	6.158E-09
E	1.285E-07	6.833E-08	4.534E-08	2.685E-08	1.858E-08	1.399E-08	1.110E-08	9.143E-09	7.730E-09	6.670E-09	5.846E-09
ESE	1.767E-07	9.427E-08	6.270E-08	3.727E-08	2.585E-08	1.950E-08	1.551E-08	1.279E-08	1.083E-08	9.350E-09	8.205E-09
SE	1.610E-07	8.502E-08	5.616E-08	3.307E-08	2.279E-08	1.711E-08	1.356E-08	1.114E-08	9.406E-09	8.105E-09	7.097E-09
SSE	1.422E-07	7.424E-08	4.864E-08	2.833E-08	1.938E-08	1.447E-08	1.141E-08	9.339E-09	7.859E-09	6.752E-09	5.897E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	5.298E-06	1.215E-06	3.794E-07	1.927E-07	1.202E-07	5.361E-08	1.945E-08	9.682E-09	6.189E-09	4.449E-09
SSW	2.739E-06	6.175E-07	1.810E-07	8.837E-08	5.349E-08	2.264E-08	7.487E-09	3.445E-09	2.091E-09	1.445E-09
SW	1.757E-06	3.981E-07	1.173E-07	5.748E-08	3.488E-08	1.485E-08	4.957E-09	2.296E-09	1.400E-09	9.704E-10
WSW	2.039E-06	4.553E-07	1.343E-07	6.587E-08	4.003E-08	1.709E-08	5.758E-09	2.702E-09	1.664E-09	1.164E-09
W	2.636E-06	5.894E-07	1.714E-07	8.327E-08	5.022E-08	2.114E-08	6.926E-09	3.171E-09	1.920E-09	1.324E-09
WNW	3.892E-06	8.783E-07	2.578E-07	1.259E-07	7.622E-08	3.229E-08	1.069E-08	4.922E-09	2.990E-09	2.067E-09
NW	3.846E-06	8.769E-07	2.600E-07	1.278E-07	7.774E-08	3.321E-08	1.115E-08	5.191E-09	3.175E-09	2.207E-09
NNW	6.291E-06	1.483E-06	4.594E-07	2.320E-07	1.440E-07	6.372E-08	2.273E-08	1.112E-08	7.021E-09	4.998E-09
N	1.751E-05	4.182E-06	1.354E-06	7.017E-07	4.439E-07	2.027E-07	7.611E-08	3.878E-08	2.511E-08	1.821E-08
NNE	1.118E-05	2.696E-06	8.782E-07	4.566E-07	2.894E-07	1.325E-07	4.994E-08	2.549E-08	1.652E-08	1.199E-08
NE	6.778E-06	1.611E-06	5.312E-07	2.782E-07	1.773E-07	8.189E-08	3.131E-08	1.617E-08	1.056E-08	7.701E-09
ENE	6.111E-06	1.460E-06	4.827E-07	2.531E-07	1.613E-07	7.458E-08	2.855E-08	1.475E-08	9.633E-09	7.030E-09
E	5.838E-06	1.407E-06	4.644E-07	2.432E-07	1.549E-07	7.149E-08	2.728E-08	1.406E-08	9.165E-09	6.679E-09
ESE	8.016E-06	1.913E-06	6.346E-07	3.333E-07	2.128E-07	9.856E-08	3.785E-08	1.960E-08	1.282E-08	9.363E-09
SE	7.610E-06	1.810E-06	5.896E-07	3.066E-07	1.944E-07	8.907E-08	3.363E-08	1.720E-08	1.117E-08	8.117E-09
SSE	7.046E-06	1.666E-06	5.326E-07	2.739E-07	1.723E-07	7.797E-08	2.886E-08	1.455E-08	9.366E-09	6.764E-09

VENTS GROUND LEVEL RELEASES - JUL-DEC 2019
2.260 DAY DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	3.066E-05	1.029E-05	5.403E-06	2.677E-06	1.066E-06	5.733E-07	3.610E-07	2.505E-07	1.855E-07	1.439E-07	1.156E-07
SSW	1.444E-05	5.257E-06	2.825E-06	1.400E-06	5.365E-07	2.804E-07	1.727E-07	1.177E-07	8.580E-08	6.568E-08	5.213E-08
SW	9.279E-06	3.363E-06	1.812E-06	8.996E-07	3.458E-07	1.811E-07	1.118E-07	7.624E-08	5.565E-08	4.264E-08	3.387E-08
WSW	1.108E-05	3.952E-06	2.091E-06	1.029E-06	3.953E-07	2.071E-07	1.278E-07	8.720E-08	6.367E-08	4.880E-08	3.878E-08
W	1.390E-05	5.075E-06	2.716E-06	1.340E-06	5.109E-07	2.660E-07	1.633E-07	1.110E-07	8.076E-08	6.170E-08	4.890E-08
WNW	2.062E-05	7.474E-06	4.014E-06	1.990E-06	7.636E-07	3.993E-07	2.461E-07	1.677E-07	1.223E-07	9.367E-08	7.437E-08
NW	2.033E-05	7.351E-06	3.974E-06	1.980E-06	7.644E-07	4.017E-07	2.485E-07	1.700E-07	1.243E-07	9.544E-08	7.595E-08
NNW	3.468E-05	1.190E-05	6.501E-06	3.281E-06	1.302E-06	6.977E-07	4.384E-07	3.036E-07	2.245E-07	1.739E-07	1.396E-07
N	1.044E-04	3.342E-05	1.792E-05	9.050E-06	3.696E-06	2.021E-06	1.289E-06	9.034E-07	6.747E-07	5.272E-07	4.262E-07
NNE	6.686E-05	2.123E-05	1.145E-05	5.809E-06	2.381E-06	1.305E-06	8.333E-07	5.846E-07	4.368E-07	3.414E-07	2.760E-07
NE	4.163E-05	1.309E-05	6.882E-06	3.450E-06	1.426E-06	7.858E-07	5.040E-07	3.549E-07	2.659E-07	2.084E-07	1.689E-07
ENE	3.815E-05	1.178E-05	6.200E-06	3.122E-06	1.293E-06	7.133E-07	4.579E-07	3.225E-07	2.417E-07	1.895E-07	1.535E-07
E	3.617E-05	1.116E-05	5.941E-06	3.009E-06	1.245E-06	6.859E-07	4.398E-07	3.095E-07	2.318E-07	1.816E-07	1.471E-07
ESE	5.013E-05	1.548E-05	8.129E-06	4.087E-06	1.697E-06	9.376E-07	6.027E-07	4.250E-07	3.189E-07	2.502E-07	2.029E-07
SE	4.616E-05	1.463E-05	7.753E-06	3.901E-06	1.600E-06	8.769E-07	5.602E-07	3.932E-07	2.939E-07	2.298E-07	1.859E-07
SSE	4.159E-05	1.348E-05	7.204E-06	3.626E-06	1.468E-06	7.972E-07	5.059E-07	3.531E-07	2.628E-07	2.047E-07	1.650E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	9.540E-08	4.824E-08	3.075E-08	1.705E-08	1.116E-08	7.993E-09	6.060E-09	4.778E-09	3.878E-09	3.218E-09	2.718E-09
SSW	4.256E-08	2.067E-08	1.281E-08	6.853E-09	4.388E-09	3.096E-09	2.323E-09	1.818E-09	1.467E-09	1.212E-09	1.021E-09
SW	2.768E-08	1.348E-08	8.375E-09	4.485E-09	2.868E-09	2.021E-09	1.513E-09	1.181E-09	9.513E-10	7.841E-10	6.584E-10
WSW	3.169E-08	1.546E-08	9.610E-09	5.156E-09	3.307E-09	2.334E-09	1.749E-09	1.367E-09	1.101E-09	9.074E-10	7.619E-10
W	3.986E-08	1.924E-08	1.188E-08	6.319E-09	4.035E-09	2.841E-09	2.127E-09	1.662E-09	1.339E-09	1.105E-09	9.285E-10
WNW	6.074E-08	2.953E-08	1.833E-08	9.820E-09	6.297E-09	4.451E-09	3.344E-09	2.621E-09	2.118E-09	1.753E-09	1.478E-09
NW	6.216E-08	3.048E-08	1.904E-08	1.030E-08	6.649E-09	4.725E-09	3.568E-09	2.809E-09	2.280E-09	1.894E-09	1.603E-09
NNW	1.150E-07	5.800E-08	3.692E-08	2.048E-08	1.343E-08	9.644E-09	7.338E-09	5.810E-09	4.737E-09	3.948E-09	3.350E-09
N	3.536E-07	1.825E-07	1.180E-07	6.668E-08	4.421E-08	3.197E-08	2.444E-08	1.940E-08	1.585E-08	1.322E-08	1.122E-08
NNE	2.290E-07	1.181E-07	7.624E-08	4.288E-08	2.827E-08	2.034E-08	1.545E-08	1.220E-08	9.910E-09	8.224E-09	6.944E-09
NE	1.404E-07	7.294E-08	4.730E-08	2.678E-08	1.773E-08	1.279E-08	9.747E-09	7.710E-09	6.272E-09	5.212E-09	4.406E-09
ENE	1.277E-07	6.635E-08	4.303E-08	2.435E-08	1.612E-08	1.163E-08	8.854E-09	7.002E-09	5.694E-09	4.731E-09	3.998E-09
E	1.222E-07	6.333E-08	4.097E-08	2.310E-08	1.523E-08	1.095E-08	8.310E-09	6.552E-09	5.311E-09	4.400E-09	3.708E-09
ESE	1.688E-07	8.803E-08	5.724E-08	3.255E-08	2.163E-08	1.566E-08	1.196E-08	9.493E-09	7.744E-09	6.453E-09	5.470E-09
SE	1.543E-07	7.973E-08	5.154E-08	2.909E-08	1.924E-08	1.388E-08	1.058E-08	8.374E-09	6.819E-09	5.675E-09	4.804E-09
SSE	1.365E-07	6.976E-08	4.474E-08	2.499E-08	1.641E-08	1.177E-08	8.927E-09	7.040E-09	5.713E-09	4.739E-09	4.000E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	5.277E-06	1.205E-06	3.734E-07	1.882E-07	1.165E-07	5.095E-08	1.748E-08	8.065E-09	4.802E-09	3.229E-09
SSW	2.732E-06	6.145E-07	1.794E-07	8.724E-08	5.260E-08	2.204E-08	7.082E-09	3.131E-09	1.829E-09	1.217E-09
SW	1.751E-06	3.957E-07	1.161E-07	5.658E-08	3.417E-08	1.437E-08	4.631E-09	2.044E-09	1.188E-09	7.871E-10
WSW	2.032E-06	4.524E-07	1.327E-07	6.473E-08	3.912E-08	1.647E-08	5.324E-09	2.359E-09	1.375E-09	9.108E-10
W	2.629E-06	5.864E-07	1.698E-07	8.214E-08	4.934E-08	2.055E-08	6.539E-09	2.874E-09	1.672E-09	1.109E-09
WNW	3.883E-06	8.743E-07	2.556E-07	1.244E-07	7.504E-08	3.149E-08	1.014E-08	4.500E-09	2.636E-09	1.760E-09
NW	3.838E-06	8.732E-07	2.580E-07	1.264E-07	7.662E-08	3.244E-08	1.062E-08	4.776E-09	2.824E-09	1.901E-09
NNW	6.270E-06	1.473E-06	4.536E-07	2.278E-07	1.407E-07	6.131E-08	2.100E-08	9.730E-09	5.838E-09	3.960E-09
N	1.742E-05	4.141E-06	1.330E-06	6.839E-07	4.292E-07	1.919E-07	6.810E-08	3.222E-08	1.949E-08	1.326E-08
NNE	1.111E-05	2.665E-06	8.595E-07	4.427E-07	2.780E-07	1.242E-07	4.380E-08	2.050E-08	1.226E-08	8.250E-09
NE	6.736E-06	1.591E-06	5.195E-07	2.694E-07	1.700E-07	7.653E-08	2.732E-08	1.289E-08	7.744E-09	5.228E-09
ENE	6.072E-06	1.442E-06	4.718E-07	2.449E-07	1.546E-07	6.961E-08	2.484E-08	1.172E-08	7.033E-09	4.745E-09
E	5.798E-06	1.388E-06	4.533E-07	2.349E-07	1.481E-07	6.648E-08	2.357E-08	1.104E-08	6.582E-09	4.413E-09
ESE	7.967E-06	1.891E-06	6.209E-07	3.230E-07	2.043E-07	9.230E-08	3.318E-08	1.577E-08	9.532E-09	6.471E-09
SE	7.568E-06	1.790E-06	5.779E-07	2.979E-07	1.872E-07	8.377E-08	2.970E-08	1.399E-08	8.411E-09	5.691E-09
SSE	7.009E-06	1.649E-06	5.225E-07	2.664E-07	1.662E-07	7.348E-08	2.556E-08	1.187E-08	7.074E-09	4.754E-09

VENTS GROUND LEVEL RELEASES - JUL-DEC 2019
8.000 DAY DECAY, DEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	2.905E-05	9.414E-06	4.830E-06	2.353E-06	9.116E-07	4.790E-07	2.959E-07	2.018E-07	1.472E-07	1.127E-07	8.936E-08
SSW	1.367E-05	4.806E-06	2.522E-06	1.228E-06	4.574E-07	2.334E-07	1.408E-07	9.422E-08	6.758E-08	5.096E-08	3.989E-08
SW	8.788E-06	3.076E-06	1.618E-06	7.900E-07	2.951E-07	1.510E-07	9.127E-08	6.116E-08	4.393E-08	3.316E-08	2.599E-08
WSW	1.050E-05	3.615E-06	1.868E-06	9.035E-07	3.375E-07	1.727E-07	1.044E-07	7.002E-08	5.032E-08	3.801E-08	2.981E-08
W	1.317E-05	4.641E-06	2.425E-06	1.177E-06	4.357E-07	2.215E-07	1.332E-07	8.892E-08	6.365E-08	4.790E-08	3.744E-08
WNW	1.952E-05	6.833E-06	3.583E-06	1.746E-06	6.508E-07	3.323E-07	2.006E-07	1.342E-07	9.630E-08	7.263E-08	5.687E-08
NW	1.925E-05	6.720E-06	3.547E-06	1.737E-06	6.513E-07	3.341E-07	2.025E-07	1.359E-07	9.780E-08	7.395E-08	5.803E-08
NNW	3.285E-05	1.089E-05	5.808E-06	2.882E-06	1.112E-06	5.820E-07	3.584E-07	2.439E-07	1.775E-07	1.355E-07	1.073E-07
N	9.891E-05	3.060E-05	1.603E-05	7.961E-06	3.163E-06	1.691E-06	1.058E-06	7.291E-07	5.364E-07	4.135E-07	3.301E-07
NNE	6.339E-05	1.944E-05	1.025E-05	5.116E-06	2.041E-06	1.094E-06	6.857E-07	4.733E-07	3.485E-07	2.689E-07	2.148E-07
NE	3.946E-05	1.199E-05	6.162E-06	3.039E-06	1.223E-06	6.592E-07	4.150E-07	2.875E-07	2.124E-07	1.643E-07	1.316E-07
ENE	3.616E-05	1.079E-05	5.552E-06	2.751E-06	1.109E-06	5.986E-07	3.772E-07	2.614E-07	1.932E-07	1.495E-07	1.197E-07
E	3.430E-05	1.023E-05	5.322E-06	2.652E-06	1.068E-06	5.761E-07	3.627E-07	2.512E-07	1.855E-07	1.435E-07	1.148E-07
ESE	4.752E-05	1.418E-05	7.278E-06	3.600E-06	1.455E-06	7.864E-07	4.961E-07	3.441E-07	2.545E-07	1.971E-07	1.580E-07
SE	4.375E-05	1.339E-05	6.938E-06	3.434E-06	1.370E-06	7.346E-07	4.606E-07	3.179E-07	2.342E-07	1.807E-07	1.444E-07
SSE	3.942E-05	1.235E-05	6.445E-06	3.191E-06	1.257E-06	6.675E-07	4.156E-07	2.853E-07	2.092E-07	1.608E-07	1.280E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	7.290E-08	3.533E-08	2.175E-08	1.146E-08	7.229E-09	5.029E-09	3.721E-09	2.873E-09	2.289E-09	1.867E-09	1.553E-09
SSW	3.216E-08	1.487E-08	8.847E-09	4.441E-09	2.707E-09	1.835E-09	1.330E-09	1.009E-09	7.928E-10	6.390E-10	5.257E-10
SW	2.097E-08	9.747E-09	5.818E-09	2.933E-09	1.791E-09	1.216E-09	8.818E-10	6.698E-10	5.262E-10	4.242E-10	3.491E-10
WSW	2.406E-08	1.121E-08	6.707E-09	3.397E-09	2.087E-09	1.422E-09	1.036E-09	7.891E-10	6.216E-10	5.023E-10	4.142E-10
W	3.014E-08	1.386E-08	8.211E-09	4.101E-09	2.495E-09	1.688E-09	1.222E-09	9.263E-10	7.268E-10	5.853E-10	4.812E-10
WNW	4.585E-08	2.122E-08	1.263E-08	6.346E-09	3.872E-09	2.626E-09	1.904E-09	1.446E-09	1.137E-09	9.166E-10	7.545E-10
NW	4.688E-08	2.187E-08	1.310E-08	6.639E-09	4.073E-09	2.775E-09	2.020E-09	1.540E-09	1.213E-09	9.812E-10	8.097E-10
NNW	8.741E-08	4.209E-08	2.578E-08	1.349E-08	8.462E-09	5.863E-09	4.326E-09	3.333E-09	2.652E-09	2.161E-09	1.796E-09
N	2.708E-07	1.340E-07	8.369E-08	4.495E-08	2.870E-08	2.015E-08	1.502E-08	1.167E-08	9.342E-09	7.656E-09	6.392E-09
NNE	1.763E-07	8.741E-08	5.462E-08	2.933E-08	1.871E-08	1.312E-08	9.763E-09	7.573E-09	6.055E-09	4.955E-09	4.130E-09
NE	1.082E-07	5.407E-08	3.397E-08	1.839E-08	1.179E-08	8.302E-09	6.200E-09	4.822E-09	3.865E-09	3.169E-09	2.646E-09
ENE	9.847E-08	4.923E-08	3.094E-08	1.675E-08	1.075E-08	7.565E-09	5.649E-09	4.394E-09	3.522E-09	2.888E-09	2.411E-09
E	9.443E-08	4.713E-08	2.958E-08	1.597E-08	1.022E-08	7.186E-09	5.358E-09	4.161E-09	3.330E-09	2.727E-09	2.274E-09
ESE	1.300E-07	6.515E-08	4.102E-08	2.226E-08	1.431E-08	1.009E-08	7.549E-09	5.880E-09	4.719E-09	3.874E-09	3.239E-09
SE	1.185E-07	5.883E-08	3.680E-08	1.980E-08	1.265E-08	8.882E-09	6.620E-09	5.142E-09	4.117E-09	3.373E-09	2.815E-09
SSE	1.048E-07	5.140E-08	3.189E-08	1.697E-08	1.076E-08	7.516E-09	5.576E-09	4.315E-09	3.443E-09	2.813E-09	2.341E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	4.748E-06	1.040E-06	3.071E-07	1.497E-07	9.017E-08	3.764E-08	1.187E-08	5.092E-09	2.893E-09	1.876E-09
SSW	2.455E-06	5.292E-07	1.469E-07	6.886E-08	4.031E-08	1.603E-08	4.649E-09	1.865E-09	1.018E-09	6.426E-10
SW	1.574E-06	3.410E-07	9.514E-08	4.475E-08	2.626E-08	1.050E-08	3.067E-09	1.236E-09	6.756E-10	4.266E-10
WSW	1.828E-06	3.900E-07	1.089E-07	5.126E-08	3.011E-08	1.207E-08	3.550E-09	1.445E-09	7.957E-10	5.050E-10
W	2.363E-06	5.051E-07	1.390E-07	6.487E-08	3.784E-08	1.497E-08	4.301E-09	1.717E-09	9.347E-10	5.887E-10
WNW	3.489E-06	7.527E-07	2.092E-07	9.812E-08	5.746E-08	2.287E-08	6.643E-09	2.669E-09	1.459E-09	9.217E-10
NW	3.448E-06	7.515E-07	2.110E-07	9.961E-08	5.862E-08	2.353E-08	6.934E-09	2.819E-09	1.553E-09	9.865E-10
NNW	5.636E-06	1.270E-06	3.722E-07	1.805E-07	1.083E-07	4.491E-08	1.399E-08	5.941E-09	3.357E-09	2.171E-09
N	1.568E-05	3.575E-06	1.095E-06	5.446E-07	3.328E-07	1.420E-07	4.634E-08	2.038E-08	1.174E-08	7.687E-09
NNE	1.001E-05	2.304E-06	7.096E-07	3.538E-07	2.166E-07	9.259E-08	3.023E-08	1.327E-08	7.621E-09	4.975E-09
NE	6.069E-06	1.376E-06	4.291E-07	2.155E-07	1.326E-07	5.717E-08	1.892E-08	8.392E-09	4.851E-09	3.182E-09
ENE	5.471E-06	1.247E-06	3.899E-07	1.960E-07	1.207E-07	5.204E-08	1.724E-08	7.647E-09	4.420E-09	2.899E-09
E	5.226E-06	1.202E-06	3.750E-07	1.883E-07	1.158E-07	4.984E-08	1.644E-08	7.265E-09	4.187E-09	2.738E-09
ESE	7.178E-06	1.634E-06	5.127E-07	2.582E-07	1.592E-07	6.884E-08	2.290E-08	1.020E-08	5.914E-09	3.889E-09
SE	6.816E-06	1.546E-06	4.766E-07	2.377E-07	1.456E-07	6.231E-08	2.040E-08	8.982E-09	5.174E-09	3.387E-09
SSE	6.310E-06	1.425E-06	4.307E-07	2.125E-07	1.291E-07	5.459E-08	1.753E-08	7.606E-09	4.343E-09	2.825E-09

VENTS GROUND LEVEL RELEASES - JUL-DEC 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) AT FIXED POINTS BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	DISTANCES IN MILES .25	.50	.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
S	1.859E-07	6.286E-08	3.227E-08	1.534E-08	5.511E-09	2.733E-09	1.609E-09	1.054E-09	7.415E-10	5.495E-10	4.235E-10
SSW	9.568E-08	3.236E-08	1.661E-08	7.898E-09	2.837E-09	1.407E-09	8.284E-10	5.424E-10	3.817E-10	2.829E-10	2.180E-10
SW	4.683E-08	1.584E-08	8.132E-09	3.866E-09	1.389E-09	6.887E-10	4.055E-10	2.655E-10	1.868E-10	1.385E-10	1.067E-10
WSW	4.948E-08	1.673E-08	8.591E-09	4.084E-09	1.467E-09	7.276E-10	4.284E-10	2.805E-10	1.974E-10	1.463E-10	1.127E-10
W	7.463E-08	2.524E-08	1.296E-08	6.160E-09	2.213E-09	1.097E-09	6.461E-10	4.231E-10	2.977E-10	2.206E-10	1.700E-10
WNW	1.414E-07	4.782E-08	2.455E-08	1.167E-08	4.193E-09	2.079E-09	1.224E-09	8.017E-10	5.641E-10	4.180E-10	3.222E-10
NW	1.619E-07	5.475E-08	2.811E-08	1.336E-08	4.801E-09	2.381E-09	1.402E-09	9.179E-10	6.459E-10	4.787E-10	3.689E-10
NNW	1.768E-07	5.979E-08	3.070E-08	1.459E-08	5.242E-09	2.600E-09	1.531E-09	1.002E-09	7.053E-10	5.227E-10	4.028E-10
N	4.253E-07	1.438E-07	7.384E-08	3.511E-08	1.261E-08	6.254E-09	3.682E-09	2.411E-09	1.697E-09	1.257E-09	9.689E-10
NNE	2.014E-07	6.809E-08	3.496E-08	1.662E-08	5.970E-09	2.961E-09	1.743E-09	1.142E-09	8.033E-10	5.953E-10	4.587E-10
NE	1.032E-07	3.489E-08	1.792E-08	8.518E-09	3.060E-09	1.517E-09	8.934E-10	5.850E-10	4.116E-10	3.051E-10	2.351E-10
ENE	9.311E-08	3.149E-08	1.617E-08	7.686E-09	2.761E-09	1.369E-09	8.062E-10	5.279E-10	3.714E-10	2.753E-10	2.121E-10
E	7.748E-08	2.620E-08	1.345E-08	6.395E-09	2.297E-09	1.139E-09	6.708E-10	4.392E-10	3.091E-10	2.291E-10	1.765E-10
ESE	1.373E-07	4.641E-08	2.383E-08	1.133E-08	4.070E-09	2.018E-09	1.188E-09	7.781E-10	5.475E-10	4.058E-10	3.127E-10
SE	1.672E-07	5.655E-08	2.904E-08	1.380E-08	4.959E-09	2.459E-09	1.448E-09	9.481E-10	6.672E-10	4.944E-10	3.810E-10
SSE	1.785E-07	6.035E-08	3.099E-08	1.473E-08	5.292E-09	2.624E-09	1.545E-09	1.012E-09	7.119E-10	5.276E-10	4.066E-10

DIRECTION FROM SITE	DISTANCES IN MILES 5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
S	3.364E-10	1.494E-10	9.053E-11	4.576E-11	2.769E-11	1.857E-11	1.331E-11	9.991E-12	7.768E-12	6.205E-12	5.065E-12
SSW	1.732E-10	7.693E-11	4.660E-11	2.355E-11	1.426E-11	9.559E-12	6.849E-12	5.143E-12	3.999E-12	3.194E-12	2.607E-12
SW	8.477E-11	3.766E-11	2.281E-11	1.153E-11	6.978E-12	4.679E-12	3.353E-12	2.517E-12	1.957E-12	1.564E-12	1.276E-12
WSW	8.955E-11	3.978E-11	2.410E-11	1.218E-11	7.372E-12	4.943E-12	3.542E-12	2.660E-12	2.068E-12	1.652E-12	1.348E-12
W	1.351E-10	6.000E-11	3.635E-11	1.837E-11	1.112E-11	7.455E-12	5.342E-12	4.011E-12	3.119E-12	2.491E-12	2.034E-12
WNW	2.559E-10	1.137E-10	6.887E-11	3.481E-11	2.107E-11	1.413E-11	1.012E-11	7.601E-12	5.910E-12	4.721E-12	3.853E-12
NW	2.930E-10	1.302E-10	7.886E-11	3.986E-11	2.412E-11	1.617E-11	1.159E-11	8.703E-12	6.767E-12	5.405E-12	4.412E-12
NNW	3.200E-10	1.422E-10	8.611E-11	4.352E-11	2.634E-11	1.766E-11	1.266E-11	9.503E-12	7.389E-12	5.903E-12	4.818E-12
N	7.697E-10	3.419E-10	2.071E-10	1.047E-10	6.337E-11	4.249E-11	3.044E-11	2.286E-11	1.777E-11	1.420E-11	1.159E-11
NNE	3.644E-10	1.619E-10	9.807E-11	4.957E-11	3.000E-11	2.012E-11	1.441E-11	1.082E-11	8.415E-12	6.722E-12	5.487E-12
NE	1.868E-10	8.297E-11	5.026E-11	2.540E-11	1.538E-11	1.031E-11	7.387E-12	5.547E-12	4.313E-12	3.445E-12	2.812E-12
ENE	1.685E-10	7.487E-11	4.535E-11	2.292E-11	1.387E-11	9.302E-12	6.665E-12	5.005E-12	3.891E-12	3.109E-12	2.537E-12
E	1.402E-10	6.230E-11	3.774E-11	1.907E-11	1.154E-11	7.740E-12	5.546E-12	4.165E-12	3.238E-12	2.587E-12	2.111E-12
ESE	2.484E-10	1.104E-10	6.685E-11	3.379E-11	2.045E-11	1.371E-11	9.825E-12	7.378E-12	5.736E-12	4.582E-12	3.740E-12
SE	3.027E-10	1.345E-10	8.145E-11	4.117E-11	2.492E-11	1.671E-11	1.197E-11	8.989E-12	6.990E-12	5.583E-12	4.557E-12
SSE	3.230E-10	1.435E-10	8.692E-11	4.393E-11	2.659E-11	1.783E-11	1.278E-11	9.593E-12	7.459E-12	5.958E-12	4.863E-12

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES .5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	3.154E-08	6.461E-09	1.687E-09	7.576E-10	4.286E-10	1.648E-10	4.768E-11	1.890E-11	1.009E-11	6.246E-12
SSW	1.624E-08	3.326E-09	8.683E-10	3.900E-10	2.206E-10	8.484E-11	2.454E-11	9.728E-12	5.195E-12	3.215E-12
SW	7.948E-09	1.628E-09	4.250E-10	1.909E-10	1.080E-10	4.153E-11	1.201E-11	4.761E-12	2.543E-12	1.574E-12
WSW	8.397E-09	1.720E-09	4.490E-10	2.017E-10	1.141E-10	4.387E-11	1.269E-11	5.030E-12	2.686E-12	1.663E-12
W	1.266E-08	2.594E-09	6.772E-10	3.042E-10	1.721E-10	6.617E-11	1.914E-11	7.587E-12	4.052E-12	2.508E-12
WNW	2.400E-08	4.916E-09	1.283E-09	5.763E-10	3.260E-10	1.254E-10	3.627E-11	1.438E-11	7.677E-12	4.752E-12
NW	2.748E-08	5.628E-09	1.469E-09	6.599E-10	3.733E-10	1.436E-10	4.153E-11	1.646E-11	8.790E-12	5.441E-12
NNW	3.001E-08	6.146E-09	1.604E-09	7.206E-10	4.077E-10	1.568E-10	4.535E-11	1.797E-11	9.599E-12	5.941E-12
N	7.218E-08	1.478E-08	3.859E-09	1.733E-09	9.806E-10	3.771E-10	1.091E-10	4.324E-11	2.309E-11	1.429E-11
NNE	3.417E-08	7.000E-09	1.827E-09	8.207E-10	4.643E-10	1.785E-10	5.165E-11	2.047E-11	1.093E-11	6.766E-12
NE	1.751E-08	3.587E-09	9.364E-10	4.206E-10	2.379E-10	9.150E-11	2.647E-11	1.049E-11	5.602E-12	3.468E-12
ENE	1.580E-08	3.237E-09	8.450E-10	3.795E-10	2.147E-10	8.256E-11	2.388E-11	9.466E-12	5.055E-12	3.129E-12
E	1.315E-08	2.693E-09	7.031E-10	3.158E-10	1.786E-10	6.870E-11	1.987E-11	7.877E-12	4.206E-12	2.604E-12
ESE	2.329E-08	4.771E-09	1.246E-09	5.594E-10	3.165E-10	1.217E-10	3.521E-11	1.395E-11	7.452E-12	4.612E-12
SE	2.838E-08	5.814E-09	1.518E-09	6.816E-10	3.856E-10	1.483E-10	4.290E-11	1.700E-11	9.080E-12	5.620E-12
SSE	3.029E-08	6.204E-09	1.620E-09	7.274E-10	4.115E-10	1.582E-10	4.578E-11	1.814E-11	9.689E-12	5.997E-12

VENTS GROUND LEVEL RELEASES - JUL-DEC 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION FROM SITE	DIST. (MI)	X/Q (SEC/M3) NO DECAY UNDEPLETED	X/Q (SEC/M3) 2.26 DAY DECAY UNDEPLETED	X/Q (SEC/M3) 8.0 DAY DECAY DEPLETED	D/Q (PER SQ.METER)
A	Site Boundary	S	.80	4.7E-06	4.6E-06	4.1E-06	2.7E-08
A	Site Boundary	SSW	.82	2.3E-06	2.2E-06	2.0E-06	1.3E-08
A	Site Boundary	SW	.97	9.6E-07	9.6E-07	8.4E-07	4.1E-09
A	Site Boundary	WSW	.93	1.3E-06	1.2E-06	1.1E-06	5.0E-09
A	Site Boundary	W	.91	1.7E-06	1.7E-06	1.5E-06	7.8E-09
A	Site Boundary	WNW	.94	2.3E-06	2.3E-06	2.1E-06	1.4E-08
A	Site Boundary	NW	.81	3.3E-06	3.3E-06	2.9E-06	2.3E-08
A	Site Boundary	NNW	.69	7.4E-06	7.4E-06	6.6E-06	3.6E-08
A	Site Boundary	N	.67	2.1E-05	2.1E-05	1.9E-05	8.8E-08
A	Site Boundary	NNE	.60	1.6E-05	1.6E-05	1.4E-05	5.1E-08
A	Site Boundary	NE	.62	9.2E-06	9.1E-06	8.3E-06	2.4E-08
A	Site Boundary	ENE	.59	9.1E-06	9.1E-06	8.2E-06	2.4E-08
A	Site Boundary	E	.53	1.0E-05	1.0E-05	9.4E-06	2.4E-08
A	Site Boundary	ESE	.54	1.4E-05	1.4E-05	1.3E-05	4.1E-08
A	Site Boundary	SE	.65	9.7E-06	9.6E-06	8.7E-06	3.7E-08
A	Site Boundary	SSE	.81	6.0E-06	6.0E-06	5.3E-06	2.5E-08
A	Nearest Res	SW	1.30	4.8E-07	4.8E-07	4.2E-07	2.0E-09
A	Nearest Res	WSW	1.80	2.6E-07	2.6E-07	2.2E-07	9.4E-10
A	Nearest Res	WNW	1.90	4.5E-07	4.5E-07	3.7E-07	2.4E-09
A	Nearest Res	NW	.90	2.6E-06	2.6E-06	2.3E-06	1.8E-08
A	Nearest Res	NNW	1.90	7.9E-07	7.8E-07	6.5E-07	2.9E-09
A	Nearest Cow	NNW	3.50	2.3E-07	2.2E-07	1.8E-07	7.1E-10
A	Nearest Garde	SW	2.20	1.5E-07	1.5E-07	1.2E-07	5.5E-10
A	Nearest Garde	WSW	1.80	2.6E-07	2.6E-07	2.2E-07	9.4E-10
A	Nearest Garde	WNW	1.90	4.5E-07	4.5E-07	3.7E-07	2.4E-09
A	Nearest Garde	NNW	3.00	3.1E-07	3.0E-07	2.4E-07	1.0E-09

Atmospheric Diffusion Estimates

Ground Level Releases

January-December 2019

VENTS GROUND LEVEL RELEASES - JAN-DEC 2019
NO DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	3.667E-05	1.242E-05	6.603E-06	3.294E-06	1.312E-06	7.057E-07	4.449E-07	3.092E-07	2.294E-07	1.783E-07	1.436E-07
SSW	2.163E-05	7.739E-06	4.157E-06	2.067E-06	8.052E-07	4.263E-07	2.654E-07	1.826E-07	1.342E-07	1.035E-07	8.278E-08
SW	1.216E-05	4.340E-06	2.359E-06	1.181E-06	4.599E-07	2.433E-07	1.514E-07	1.040E-07	7.644E-08	5.893E-08	4.708E-08
WSW	1.194E-05	4.325E-06	2.322E-06	1.152E-06	4.443E-07	2.335E-07	1.446E-07	9.895E-08	7.246E-08	5.569E-08	4.437E-08
W	1.572E-05	5.757E-06	3.104E-06	1.540E-06	5.919E-07	3.102E-07	1.916E-07	1.308E-07	9.563E-08	7.337E-08	5.838E-08
WNW	2.167E-05	7.906E-06	4.270E-06	2.124E-06	8.186E-07	4.299E-07	2.659E-07	1.818E-07	1.331E-07	1.022E-07	8.137E-08
NW	2.178E-05	7.854E-06	4.247E-06	2.117E-06	8.234E-07	4.353E-07	2.707E-07	1.860E-07	1.367E-07	1.053E-07	8.415E-08
NNW	3.624E-05	1.220E-05	6.594E-06	3.322E-06	1.337E-06	7.248E-07	4.597E-07	3.210E-07	2.391E-07	1.865E-07	1.506E-07
N	7.730E-05	2.497E-05	1.339E-05	6.758E-06	2.768E-06	1.519E-06	9.724E-07	6.841E-07	5.129E-07	4.023E-07	3.264E-07
NNE	5.057E-05	1.630E-05	8.768E-06	4.438E-06	1.819E-06	9.983E-07	6.391E-07	4.497E-07	3.371E-07	2.644E-07	2.145E-07
NE	3.300E-05	1.055E-05	5.594E-06	2.814E-06	1.158E-06	6.371E-07	4.087E-07	2.880E-07	2.162E-07	1.698E-07	1.379E-07
ENE	2.733E-05	8.605E-06	4.575E-06	2.311E-06	9.538E-07	5.258E-07	3.377E-07	2.382E-07	1.790E-07	1.406E-07	1.143E-07
E	2.835E-05	8.830E-06	4.699E-06	2.380E-06	9.870E-07	5.458E-07	3.514E-07	2.484E-07	1.869E-07	1.471E-07	1.196E-07
ESE	4.100E-05	1.286E-05	6.789E-06	3.419E-06	1.418E-06	7.844E-07	5.051E-07	3.571E-07	2.687E-07	2.115E-07	1.721E-07
SE	3.970E-05	1.280E-05	6.814E-06	3.429E-06	1.403E-06	7.694E-07	4.922E-07	3.461E-07	2.593E-07	2.033E-07	1.649E-07
SSE	4.105E-05	1.337E-05	7.106E-06	3.568E-06	1.451E-06	7.916E-07	5.046E-07	3.538E-07	2.645E-07	2.069E-07	1.676E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	1.188E-07	6.087E-08	3.938E-08	2.254E-08	1.524E-08	1.128E-08	8.829E-09	7.186E-09	6.017E-09	5.148E-09	4.479E-09
SSW	6.804E-08	3.402E-08	2.161E-08	1.204E-08	7.984E-09	5.816E-09	4.495E-09	3.619E-09	3.001E-09	2.545E-09	2.197E-09
SW	3.868E-08	1.930E-08	1.223E-08	6.796E-09	4.492E-09	3.264E-09	2.517E-09	2.022E-09	1.674E-09	1.417E-09	1.222E-09
WSW	3.637E-08	1.797E-08	1.132E-08	6.228E-09	4.094E-09	2.961E-09	2.275E-09	1.822E-09	1.504E-09	1.271E-09	1.093E-09
W	4.777E-08	2.346E-08	1.471E-08	8.035E-09	5.253E-09	3.782E-09	2.895E-09	2.311E-09	1.902E-09	1.602E-09	1.374E-09
WNW	6.664E-08	3.283E-08	2.062E-08	1.130E-08	7.397E-09	5.333E-09	4.086E-09	3.264E-09	2.688E-09	2.266E-09	1.945E-09
NW	6.912E-08	3.446E-08	2.184E-08	1.213E-08	8.014E-09	5.823E-09	4.490E-09	3.607E-09	2.986E-09	2.528E-09	2.179E-09
NNW	1.249E-07	6.468E-08	4.213E-08	2.433E-08	1.655E-08	1.229E-08	9.655E-09	7.878E-09	6.610E-09	5.665E-09	4.937E-09
N	2.719E-07	1.431E-07	9.430E-08	5.535E-08	3.807E-08	2.853E-08	2.257E-08	1.853E-08	1.563E-08	1.345E-08	1.177E-08
NNE	1.787E-07	9.400E-08	6.192E-08	3.632E-08	2.496E-08	1.870E-08	1.478E-08	1.213E-08	1.023E-08	8.801E-09	7.697E-09
NE	1.150E-07	6.070E-08	4.009E-08	2.361E-08	1.627E-08	1.221E-08	9.676E-09	7.952E-09	6.714E-09	5.785E-09	5.066E-09
ENE	9.533E-08	5.042E-08	3.334E-08	1.966E-08	1.356E-08	1.019E-08	8.075E-09	6.639E-09	5.607E-09	4.833E-09	4.233E-09
E	9.989E-08	5.303E-08	3.515E-08	2.080E-08	1.438E-08	1.082E-08	8.586E-09	7.067E-09	5.974E-09	5.153E-09	4.516E-09
ESE	1.437E-07	7.634E-08	5.063E-08	2.998E-08	2.074E-08	1.562E-08	1.240E-08	1.021E-08	8.634E-09	7.451E-09	6.532E-09
SE	1.373E-07	7.217E-08	4.752E-08	2.785E-08	1.914E-08	1.434E-08	1.134E-08	9.302E-09	7.843E-09	6.750E-09	5.905E-09
SSE	1.393E-07	7.279E-08	4.773E-08	2.783E-08	1.906E-08	1.424E-08	1.123E-08	9.204E-09	7.749E-09	6.661E-09	5.821E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	6.424E-06	1.483E-06	4.602E-07	2.327E-07	1.447E-07	6.418E-08	2.304E-08	1.135E-08	7.210E-09	5.158E-09
SSW	4.024E-06	9.171E-07	2.752E-07	1.364E-07	8.348E-08	3.606E-08	1.236E-08	5.866E-09	3.634E-09	2.551E-09
SW	2.276E-06	5.239E-07	1.569E-07	7.765E-08	4.748E-08	2.046E-08	6.981E-09	3.293E-09	2.031E-09	1.421E-09
WSW	2.247E-06	5.078E-07	1.500E-07	7.364E-08	4.476E-08	1.910E-08	6.410E-09	2.989E-09	1.830E-09	1.274E-09
W	2.999E-06	6.775E-07	1.989E-07	9.721E-08	5.889E-08	2.497E-08	8.281E-09	3.820E-09	2.322E-09	1.606E-09
WNW	4.124E-06	9.359E-07	2.760E-07	1.352E-07	8.208E-08	3.492E-08	1.164E-08	5.384E-09	3.279E-09	2.272E-09
NW	4.102E-06	9.384E-07	2.807E-07	1.388E-07	8.486E-08	3.655E-08	1.246E-08	5.874E-09	3.623E-09	2.535E-09
NNW	6.385E-06	1.506E-06	4.749E-07	2.425E-07	1.517E-07	6.804E-08	2.483E-08	1.237E-08	7.903E-09	5.675E-09
N	1.302E-05	3.100E-06	1.003E-06	5.197E-07	3.287E-07	1.500E-07	5.633E-08	2.869E-08	1.858E-08	1.347E-08
NNE	8.517E-06	2.036E-06	6.591E-07	3.416E-07	2.160E-07	9.856E-08	3.696E-08	1.880E-08	1.216E-08	8.815E-09
NE	5.459E-06	1.294E-06	4.213E-07	2.190E-07	1.388E-07	6.360E-08	2.401E-08	1.228E-08	7.973E-09	5.794E-09
ENE	4.464E-06	1.065E-06	3.481E-07	1.813E-07	1.151E-07	5.281E-08	1.999E-08	1.024E-08	6.656E-09	4.840E-09
E	4.586E-06	1.100E-06	3.621E-07	1.893E-07	1.204E-07	5.550E-08	2.114E-08	1.088E-08	7.085E-09	5.160E-09
ESE	6.639E-06	1.581E-06	5.204E-07	2.722E-07	1.732E-07	7.989E-08	3.046E-08	1.570E-08	1.024E-08	7.461E-09
SE	6.640E-06	1.572E-06	5.077E-07	2.628E-07	1.661E-07	7.569E-08	2.835E-08	1.442E-08	9.327E-09	6.761E-09
SSE	6.925E-06	1.628E-06	5.208E-07	2.681E-07	1.688E-07	7.643E-08	2.835E-08	1.432E-08	9.230E-09	6.672E-09

VENTS GROUND LEVEL RELEASES - JAN-DEC 2019
2.260 DAY DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	3.661E-05	1.238E-05	6.577E-06	3.276E-06	1.301E-06	6.977E-07	4.385E-07	3.038E-07	2.247E-07	1.741E-07	1.397E-07
SSW	2.161E-05	7.723E-06	4.143E-06	2.058E-06	8.000E-07	4.226E-07	2.625E-07	1.801E-07	1.321E-07	1.017E-07	8.108E-08
SW	1.214E-05	4.329E-06	2.350E-06	1.175E-06	4.563E-07	2.407E-07	1.494E-07	1.024E-07	7.500E-08	5.766E-08	4.594E-08
WSW	1.192E-05	4.316E-06	2.315E-06	1.147E-06	4.415E-07	2.315E-07	1.430E-07	9.766E-08	7.136E-08	5.471E-08	4.350E-08
W	1.571E-05	5.746E-06	3.095E-06	1.534E-06	5.885E-07	3.078E-07	1.897E-07	1.293E-07	9.431E-08	7.222E-08	5.734E-08
WNW	2.166E-05	7.894E-06	4.260E-06	2.117E-06	8.147E-07	4.271E-07	2.637E-07	1.801E-07	1.315E-07	1.009E-07	8.017E-08
NW	2.176E-05	7.841E-06	4.236E-06	2.110E-06	8.191E-07	4.323E-07	2.683E-07	1.840E-07	1.349E-07	1.038E-07	8.277E-08
NNW	3.619E-05	1.216E-05	6.566E-06	3.304E-06	1.326E-06	7.164E-07	4.529E-07	3.153E-07	2.341E-07	1.821E-07	1.465E-07
N	7.717E-05	2.489E-05	1.332E-05	6.715E-06	2.741E-06	1.499E-06	9.561E-07	6.703E-07	5.007E-07	3.914E-07	3.164E-07
NNE	5.047E-05	1.624E-05	8.719E-06	4.405E-06	1.798E-06	9.831E-07	6.268E-07	4.392E-07	3.279E-07	2.562E-07	2.070E-07
NE	3.294E-05	1.051E-05	5.562E-06	2.793E-06	1.145E-06	6.272E-07	4.007E-07	2.812E-07	2.102E-07	1.644E-07	1.330E-07
ENE	2.727E-05	8.571E-06	4.548E-06	2.293E-06	9.424E-07	5.173E-07	3.309E-07	2.324E-07	1.739E-07	1.360E-07	1.101E-07
E	2.829E-05	8.793E-06	4.670E-06	2.360E-06	9.744E-07	5.365E-07	3.439E-07	2.419E-07	1.812E-07	1.419E-07	1.150E-07
ESE	4.092E-05	1.280E-05	6.750E-06	3.393E-06	1.402E-06	7.721E-07	4.952E-07	3.486E-07	2.612E-07	2.047E-07	1.659E-07
SE	3.963E-05	1.276E-05	6.780E-06	3.406E-06	1.389E-06	7.589E-07	4.837E-07	3.389E-07	2.530E-07	1.976E-07	1.597E-07
SSE	4.098E-05	1.332E-05	7.070E-06	3.545E-06	1.436E-06	7.804E-07	4.956E-07	3.462E-07	2.578E-07	2.009E-07	1.620E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	1.152E-07	5.806E-08	3.694E-08	2.045E-08	1.338E-08	9.588E-09	7.275E-09	5.742E-09	4.666E-09	3.877E-09	3.278E-09
SSW	6.648E-08	3.283E-08	2.059E-08	1.119E-08	7.236E-09	5.142E-09	3.878E-09	3.048E-09	2.468E-09	2.045E-09	1.725E-09
SW	3.763E-08	1.851E-08	1.157E-08	6.245E-09	4.013E-09	2.836E-09	2.127E-09	1.663E-09	1.340E-09	1.105E-09	9.285E-10
WSW	3.557E-08	1.738E-08	1.082E-08	5.817E-09	3.736E-09	2.641E-09	1.984E-09	1.554E-09	1.254E-09	1.037E-09	8.726E-10
W	4.683E-08	2.277E-08	1.413E-08	7.563E-09	4.845E-09	3.420E-09	2.566E-09	2.009E-09	1.621E-09	1.340E-09	1.128E-09
WNW	6.555E-08	3.202E-08	1.994E-08	1.074E-08	6.914E-09	4.901E-09	3.693E-09	2.902E-09	2.351E-09	1.950E-09	1.648E-09
NW	6.786E-08	3.350E-08	2.102E-08	1.144E-08	7.415E-09	5.284E-09	3.997E-09	3.151E-09	2.560E-09	2.128E-09	1.802E-09
NNW	1.212E-07	6.173E-08	3.957E-08	2.214E-08	1.460E-08	1.052E-08	8.024E-09	6.362E-09	5.191E-09	4.329E-09	3.674E-09
N	2.626E-07	1.358E-07	8.789E-08	4.981E-08	3.311E-08	2.401E-08	1.840E-08	1.464E-08	1.198E-08	1.002E-08	8.516E-09
NNE	1.717E-07	8.852E-08	5.715E-08	3.221E-08	2.130E-08	1.537E-08	1.171E-08	9.278E-09	7.557E-09	6.290E-09	5.326E-09
NE	1.104E-07	5.710E-08	3.695E-08	2.089E-08	1.384E-08	1.000E-08	7.633E-09	6.051E-09	4.933E-09	4.109E-09	3.481E-09
ENE	9.143E-08	4.735E-08	3.065E-08	1.734E-08	1.149E-08	8.306E-09	6.339E-09	5.025E-09	4.096E-09	3.411E-09	2.889E-09
E	9.556E-08	4.961E-08	3.216E-08	1.822E-08	1.207E-08	8.719E-09	6.650E-09	5.266E-09	4.288E-09	3.567E-09	3.018E-09
ESE	1.380E-07	7.181E-08	4.666E-08	2.655E-08	1.767E-08	1.281E-08	9.808E-09	7.797E-09	6.373E-09	5.320E-09	4.517E-09
SE	1.325E-07	6.837E-08	4.419E-08	2.499E-08	1.657E-08	1.200E-08	9.177E-09	7.292E-09	5.960E-09	4.976E-09	4.227E-09
SSE	1.342E-07	6.875E-08	4.420E-08	2.479E-08	1.635E-08	1.177E-08	8.960E-09	7.089E-09	5.770E-09	4.799E-09	4.061E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	6.400E-06	1.472E-06	4.537E-07	2.280E-07	1.408E-07	6.137E-08	2.097E-08	9.675E-09	5.770E-09	3.889E-09
SSW	4.012E-06	9.118E-07	2.722E-07	1.342E-07	8.177E-08	3.487E-08	1.152E-08	5.195E-09	3.064E-09	2.052E-09
SW	2.268E-06	5.203E-07	1.549E-07	7.621E-08	4.633E-08	1.967E-08	6.436E-09	2.866E-09	1.673E-09	1.110E-09
WSW	2.241E-06	5.049E-07	1.485E-07	7.253E-08	4.389E-08	1.850E-08	6.003E-09	2.670E-09	1.563E-09	1.040E-09
W	2.991E-06	6.739E-07	1.970E-07	9.589E-08	5.786E-08	2.427E-08	7.814E-09	3.459E-09	2.020E-09	1.345E-09
WNW	4.115E-06	9.318E-07	2.738E-07	1.337E-07	8.088E-08	3.410E-08	1.108E-08	4.955E-09	2.918E-09	1.957E-09
NW	4.092E-06	9.340E-07	2.783E-07	1.371E-07	8.348E-08	3.559E-08	1.178E-08	5.337E-09	3.168E-09	2.135E-09
NNW	6.360E-06	1.495E-06	4.681E-07	2.375E-07	1.477E-07	6.509E-08	2.266E-08	1.061E-08	6.391E-09	4.342E-09
N	1.296E-05	3.072E-06	9.865E-07	5.075E-07	3.187E-07	1.427E-07	5.085E-08	2.419E-08	1.470E-08	1.004E-08
NNE	8.472E-06	2.015E-06	6.468E-07	3.324E-07	2.085E-07	9.306E-08	3.290E-08	1.549E-08	9.318E-09	6.308E-09
NE	5.430E-06	1.281E-06	4.133E-07	2.131E-07	1.339E-07	5.999E-08	2.133E-08	1.008E-08	6.077E-09	4.121E-09
ENE	4.440E-06	1.054E-06	3.412E-07	1.762E-07	1.109E-07	4.972E-08	1.770E-08	8.369E-09	5.046E-09	3.421E-09
E	4.559E-06	1.088E-06	3.545E-07	1.836E-07	1.158E-07	5.206E-08	1.858E-08	8.786E-09	5.289E-09	3.578E-09
ESE	6.604E-06	1.564E-06	5.104E-07	2.647E-07	1.671E-07	7.534E-08	2.707E-08	1.291E-08	7.829E-09	5.334E-09
SE	6.610E-06	1.557E-06	4.992E-07	2.565E-07	1.609E-07	7.187E-08	2.552E-08	1.209E-08	7.323E-09	4.990E-09
SSE	6.892E-06	1.613E-06	5.118E-07	2.614E-07	1.632E-07	7.238E-08	2.535E-08	1.187E-08	7.121E-09	4.813E-09

VENTS GROUND LEVEL RELEASES - JAN-DEC 2019
8.000 DAY DECAY, DEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	3.469E-05	1.133E-05	5.878E-06	2.879E-06	1.111E-06	5.824E-07	3.589E-07	2.444E-07	1.779E-07	1.360E-07	1.077E-07
SSW	2.047E-05	7.063E-06	3.701E-06	1.807E-06	6.826E-07	3.521E-07	2.143E-07	1.444E-07	1.043E-07	7.907E-08	6.222E-08
SW	1.150E-05	3.961E-06	2.100E-06	1.033E-06	3.897E-07	2.009E-07	1.221E-07	8.225E-08	5.932E-08	4.495E-08	3.535E-08
WSW	1.129E-05	3.948E-06	2.068E-06	1.007E-06	3.766E-07	1.929E-07	1.167E-07	7.830E-08	5.629E-08	4.253E-08	3.336E-08
W	1.487E-05	5.255E-06	2.764E-06	1.347E-06	5.019E-07	2.563E-07	1.547E-07	1.036E-07	7.433E-08	5.607E-08	4.391E-08
WNW	2.051E-05	7.217E-06	3.803E-06	1.857E-06	6.943E-07	3.553E-07	2.149E-07	1.440E-07	1.035E-07	7.815E-08	6.126E-08
NW	2.060E-05	7.169E-06	3.782E-06	1.851E-06	6.982E-07	3.598E-07	2.188E-07	1.473E-07	1.063E-07	8.052E-08	6.333E-08
NNW	3.429E-05	1.113E-05	5.869E-06	2.904E-06	1.133E-06	5.982E-07	3.708E-07	2.537E-07	1.854E-07	1.422E-07	1.130E-07
N	7.313E-05	2.278E-05	1.191E-05	5.905E-06	2.345E-06	1.253E-06	7.839E-07	5.403E-07	3.975E-07	3.064E-07	2.446E-07
NNE	4.783E-05	1.487E-05	7.801E-06	3.876E-06	1.540E-06	8.230E-07	5.148E-07	3.548E-07	2.610E-07	2.011E-07	1.605E-07
NE	3.122E-05	9.622E-06	4.977E-06	2.458E-06	9.801E-07	5.252E-07	3.292E-07	2.272E-07	1.674E-07	1.291E-07	1.032E-07
ENE	2.585E-05	7.849E-06	4.070E-06	2.019E-06	8.073E-07	4.334E-07	2.720E-07	1.879E-07	1.385E-07	1.069E-07	8.549E-08
E	2.681E-05	8.054E-06	4.180E-06	2.078E-06	8.352E-07	4.498E-07	2.829E-07	1.958E-07	1.446E-07	1.117E-07	8.943E-08
ESE	3.878E-05	1.173E-05	6.040E-06	2.987E-06	1.200E-06	6.466E-07	4.069E-07	2.817E-07	2.080E-07	1.608E-07	1.288E-07
SE	3.755E-05	1.168E-05	6.063E-06	2.996E-06	1.188E-06	6.346E-07	3.967E-07	2.733E-07	2.009E-07	1.548E-07	1.235E-07
SSE	3.883E-05	1.219E-05	6.323E-06	3.118E-06	1.228E-06	6.529E-07	4.067E-07	2.793E-07	2.049E-07	1.575E-07	1.255E-07

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	8.775E-08	4.233E-08	2.597E-08	1.362E-08	8.559E-09	5.939E-09	4.386E-09	3.382E-09	2.692E-09	2.195E-09	1.824E-09
SSW	5.039E-08	2.374E-08	1.432E-08	7.329E-09	4.529E-09	3.102E-09	2.267E-09	1.734E-09	1.370E-09	1.110E-09	9.177E-10
SW	2.861E-08	1.344E-08	8.088E-09	4.123E-09	2.538E-09	1.732E-09	1.262E-09	9.624E-10	7.585E-10	6.131E-10	5.056E-10
WSW	2.694E-08	1.255E-08	7.505E-09	3.797E-09	2.328E-09	1.584E-09	1.152E-09	8.772E-10	6.907E-10	5.579E-10	4.599E-10
W	3.541E-08	1.640E-08	9.767E-09	4.910E-09	2.997E-09	2.033E-09	1.474E-09	1.120E-09	8.796E-10	7.093E-10	5.838E-10
WNW	4.944E-08	2.298E-08	1.372E-08	6.924E-09	4.236E-09	2.879E-09	2.092E-09	1.591E-09	1.252E-09	1.011E-09	8.336E-10
NW	5.125E-08	2.409E-08	1.451E-08	7.413E-09	4.574E-09	3.130E-09	2.286E-09	1.747E-09	1.381E-09	1.119E-09	9.250E-10
NNW	9.230E-08	4.498E-08	2.779E-08	1.472E-08	9.306E-09	6.488E-09	4.810E-09	3.721E-09	2.970E-09	2.428E-09	2.022E-09
N	2.007E-07	9.936E-08	6.207E-08	3.336E-08	2.132E-08	1.498E-08	1.117E-08	8.689E-09	6.964E-09	5.713E-09	4.773E-09
NNE	1.317E-07	6.513E-08	4.064E-08	2.180E-08	1.390E-08	9.748E-09	7.258E-09	5.634E-09	4.508E-09	3.692E-09	3.080E-09
NE	8.471E-08	4.204E-08	2.630E-08	1.416E-08	9.053E-09	6.361E-09	4.744E-09	3.687E-09	2.954E-09	2.422E-09	2.022E-09
ENE	7.021E-08	3.490E-08	2.186E-08	1.178E-08	7.538E-09	5.299E-09	3.954E-09	3.074E-09	2.463E-09	2.020E-09	1.687E-09
E	7.352E-08	3.667E-08	2.301E-08	1.244E-08	7.970E-09	5.608E-09	4.187E-09	3.257E-09	2.610E-09	2.141E-09	1.788E-09
ESE	1.059E-07	5.287E-08	3.322E-08	1.798E-08	1.155E-08	8.137E-09	6.084E-09	4.739E-09	3.804E-09	3.124E-09	2.613E-09
SE	1.013E-07	5.009E-08	3.125E-08	1.677E-08	1.070E-08	7.514E-09	5.601E-09	4.352E-09	3.486E-09	2.858E-09	2.387E-09
SSE	1.027E-07	5.047E-08	3.136E-08	1.672E-08	1.063E-08	7.434E-09	5.525E-09	4.282E-09	3.422E-09	2.800E-09	2.334E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
	SEGMENT BOUNDARIES IN MILES FROM THE SITE									
S	5.757E-06	1.269E-06	3.727E-07	1.809E-07	1.087E-07	4.515E-08	1.411E-08	6.016E-09	3.406E-09	2.205E-09
SSW	3.606E-06	7.855E-07	2.231E-07	1.062E-07	6.283E-08	2.547E-08	7.637E-09	3.148E-09	1.747E-09	1.116E-09
SW	2.039E-06	4.486E-07	1.272E-07	6.040E-08	3.570E-08	1.443E-08	4.300E-09	1.759E-09	9.704E-10	6.164E-10
WSW	2.014E-06	4.350E-07	1.217E-07	5.734E-08	3.370E-08	1.350E-08	3.968E-09	1.610E-09	8.847E-10	5.609E-10
W	2.688E-06	5.805E-07	1.614E-07	7.573E-08	4.437E-08	1.768E-08	5.139E-09	2.066E-09	1.129E-09	7.133E-10
WNW	3.697E-06	8.021E-07	2.240E-07	1.054E-07	6.189E-08	2.474E-08	7.240E-09	2.926E-09	1.605E-09	1.017E-09
NW	3.676E-06	8.041E-07	2.278E-07	1.082E-07	6.395E-08	2.587E-08	7.728E-09	3.177E-09	1.762E-09	1.125E-09
NNW	5.720E-06	1.289E-06	3.846E-07	1.885E-07	1.140E-07	4.786E-08	1.522E-08	6.568E-09	3.746E-09	2.438E-09
N	1.166E-05	2.651E-06	8.115E-07	4.036E-07	2.466E-07	1.053E-07	3.439E-08	1.515E-08	8.742E-09	5.736E-09
NNE	7.627E-06	1.741E-06	5.330E-07	2.650E-07	1.619E-07	6.903E-08	2.248E-08	9.860E-09	5.669E-09	3.707E-09
NE	4.889E-06	1.106E-06	3.407E-07	1.699E-07	1.040E-07	4.453E-08	1.459E-08	6.432E-09	3.710E-09	2.432E-09
ENE	3.998E-06	9.103E-07	2.814E-07	1.406E-07	8.619E-08	3.695E-08	1.213E-08	5.358E-09	3.093E-09	2.028E-09
E	4.107E-06	9.401E-07	2.926E-07	1.467E-07	9.015E-08	3.879E-08	1.280E-08	5.669E-09	3.276E-09	2.149E-09
ESE	5.947E-06	1.351E-06	4.207E-07	2.111E-07	1.298E-07	5.592E-08	1.851E-08	8.225E-09	4.767E-09	3.136E-09
SE	5.948E-06	1.344E-06	4.108E-07	2.040E-07	1.246E-07	5.310E-08	1.729E-08	7.599E-09	4.379E-09	2.870E-09
SSE	6.203E-06	1.392E-06	4.214E-07	2.081E-07	1.265E-07	5.359E-08	1.727E-08	7.523E-09	4.310E-09	2.812E-09

VENTS GROUND LEVEL RELEASES - JAN-DEC 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) AT FIXED POINTS BY DOWNWIND SECTORS **********

DIRECTION	DISTANCES IN MILES										
FROM SITE	.25	.50	.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
S	2.312E-07	7.819E-08	4.015E-08	1.909E-08	6.856E-09	3.400E-09	2.002E-09	1.311E-09	9.224E-10	6.836E-10	5.268E-10
SSW	1.305E-07	4.413E-08	2.266E-08	1.077E-08	3.869E-09	1.919E-09	1.130E-09	7.398E-10	5.206E-10	3.858E-10	2.973E-10
SW	5.794E-08	1.959E-08	1.006E-08	4.782E-09	1.718E-09	8.519E-10	5.016E-10	3.285E-10	2.311E-10	1.713E-10	1.320E-10
WSW	6.308E-08	2.133E-08	1.095E-08	5.207E-09	1.870E-09	9.276E-10	5.462E-10	3.576E-10	2.516E-10	1.865E-10	1.437E-10
W	9.404E-08	3.180E-08	1.633E-08	7.763E-09	2.788E-09	1.383E-09	8.142E-10	5.332E-10	3.752E-10	2.780E-10	2.143E-10
WNW	1.549E-07	5.239E-08	2.690E-08	1.279E-08	4.593E-09	2.278E-09	1.341E-09	8.783E-10	6.180E-10	4.580E-10	3.529E-10
NW	1.653E-07	5.591E-08	2.871E-08	1.365E-08	4.902E-09	2.431E-09	1.431E-09	9.373E-10	6.595E-10	4.888E-10	3.767E-10
NNW	1.622E-07	5.485E-08	2.816E-08	1.339E-08	4.810E-09	2.385E-09	1.404E-09	9.196E-10	6.471E-10	4.795E-10	3.695E-10
N	3.175E-07	1.074E-07	5.512E-08	2.621E-08	9.413E-09	4.668E-09	2.749E-09	1.800E-09	1.266E-09	9.385E-10	7.233E-10
NNE	1.804E-07	6.100E-08	3.132E-08	1.489E-08	5.349E-09	2.653E-09	1.562E-09	1.023E-09	7.196E-10	5.333E-10	4.110E-10
NE	1.052E-07	3.558E-08	1.827E-08	8.684E-09	3.119E-09	1.547E-09	9.108E-10	5.964E-10	4.197E-10	3.110E-10	2.397E-10
ENE	7.723E-08	2.611E-08	1.341E-08	6.374E-09	2.290E-09	1.136E-09	6.686E-10	4.378E-10	3.081E-10	2.283E-10	1.759E-10
E	7.267E-08	2.457E-08	1.262E-08	5.998E-09	2.155E-09	1.068E-09	6.291E-10	4.120E-10	2.899E-10	2.148E-10	1.655E-10
ESE	1.244E-07	4.206E-08	2.160E-08	1.027E-08	3.688E-09	1.829E-09	1.077E-09	7.052E-10	4.962E-10	3.677E-10	2.834E-10
SE	1.780E-07	6.019E-08	3.091E-08	1.469E-08	5.278E-09	2.617E-09	1.541E-09	1.009E-09	7.101E-10	5.262E-10	4.055E-10
SSE	2.014E-07	6.811E-08	3.497E-08	1.663E-08	5.972E-09	2.962E-09	1.744E-09	1.142E-09	8.035E-10	5.955E-10	4.589E-10

DIRECTION	DISTANCES IN MILES										
FROM SITE	5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
S	4.185E-10	1.859E-10	1.126E-10	5.692E-11	3.445E-11	2.310E-11	1.655E-11	1.243E-11	9.663E-12	7.719E-12	6.301E-12
SSW	2.362E-10	1.049E-10	6.356E-11	3.212E-11	1.944E-11	1.304E-11	9.341E-12	7.014E-12	5.454E-12	4.356E-12	3.556E-12
SW	1.049E-10	4.658E-11	2.822E-11	1.426E-11	8.632E-12	5.788E-12	4.147E-12	3.114E-12	2.421E-12	1.934E-12	1.579E-12
WSW	1.142E-10	5.072E-11	3.072E-11	1.553E-11	9.399E-12	6.302E-12	4.516E-12	3.391E-12	2.636E-12	2.106E-12	1.719E-12
W	1.702E-10	7.561E-11	4.580E-11	2.315E-11	1.401E-11	9.395E-12	6.732E-12	5.055E-12	3.930E-12	3.140E-12	2.563E-12
WNW	2.804E-10	1.246E-10	7.545E-11	3.814E-11	2.308E-11	1.548E-11	1.109E-11	8.327E-12	6.475E-12	5.172E-12	4.221E-12
NW	2.992E-10	1.329E-10	8.052E-11	4.070E-11	2.463E-11	1.652E-11	1.183E-11	8.887E-12	6.910E-12	5.520E-12	4.505E-12
NNW	2.936E-10	1.304E-10	7.900E-11	3.993E-11	2.417E-11	1.620E-11	1.161E-11	8.719E-12	6.779E-12	5.415E-12	4.420E-12
N	5.746E-10	2.553E-10	1.546E-10	7.815E-11	4.730E-11	3.172E-11	2.273E-11	1.706E-11	1.327E-11	1.060E-11	8.651E-12
NNE	3.265E-10	1.450E-10	8.786E-11	4.441E-11	2.688E-11	1.802E-11	1.291E-11	9.697E-12	7.539E-12	6.023E-12	4.916E-12
NE	1.904E-10	8.459E-11	5.124E-11	2.590E-11	1.567E-11	1.051E-11	7.531E-12	5.655E-12	4.397E-12	3.512E-12	2.867E-12
ENE	1.398E-10	6.209E-11	3.761E-11	1.901E-11	1.151E-11	7.715E-12	5.528E-12	4.151E-12	3.227E-12	2.578E-12	2.104E-12
E	1.315E-10	5.842E-11	3.539E-11	1.789E-11	1.083E-11	7.259E-12	5.202E-12	3.906E-12	3.037E-12	2.426E-12	1.980E-12
ESE	2.251E-10	1.000E-10	6.058E-11	3.062E-11	1.853E-11	1.243E-11	8.904E-12	6.686E-12	5.199E-12	4.153E-12	3.390E-12
SE	3.222E-10	1.431E-10	8.669E-11	4.382E-11	2.652E-11	1.778E-11	1.274E-11	9.568E-12	7.439E-12	5.942E-12	4.850E-12
SSE	3.646E-10	1.620E-10	9.810E-11	4.959E-11	3.001E-11	2.012E-11	1.442E-11	1.083E-11	8.418E-12	6.725E-12	5.489E-12

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) BY DOWNWIND SECTORS **********

	SEGMENT BOUNDARIES IN MILES									
DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	3.924E-08	8.038E-09	2.098E-09	9.424E-10	5.331E-10	2.050E-10	5.931E-11	2.351E-11	1.255E-11	7.770E-12
SSW	2.215E-08	4.536E-09	1.184E-09	5.319E-10	3.009E-10	1.157E-10	3.347E-11	1.327E-11	7.085E-12	4.385E-12
SW	9.832E-09	2.014E-09	5.258E-10	2.361E-10	1.336E-10	5.137E-11	1.486E-11	5.890E-12	3.145E-12	1.947E-12
WSW	1.071E-08	2.193E-09	5.725E-10	2.571E-10	1.454E-10	5.593E-11	1.618E-11	6.413E-12	3.425E-12	2.120E-12
W	1.596E-08	3.269E-09	8.534E-10	3.833E-10	2.168E-10	8.339E-11	2.412E-11	9.561E-12	5.106E-12	3.160E-12
WNW	2.629E-08	5.385E-09	1.406E-09	6.314E-10	3.572E-10	1.374E-10	3.974E-11	1.575E-11	8.411E-12	5.206E-12
NW	2.806E-08	5.747E-09	1.500E-09	6.738E-10	3.812E-10	1.466E-10	4.241E-11	1.681E-11	8.976E-12	5.556E-12
NNW	2.753E-08	5.639E-09	1.472E-09	6.611E-10	3.740E-10	1.438E-10	4.161E-11	1.649E-11	8.806E-12	5.451E-12
N	5.388E-08	1.104E-08	2.881E-09	1.294E-09	7.320E-10	2.815E-10	8.143E-11	3.228E-11	1.724E-11	1.067E-11
NNE	3.062E-08	6.271E-09	1.637E-09	7.353E-10	4.159E-10	1.600E-10	4.627E-11	1.834E-11	9.794E-12	6.062E-12
NE	1.785E-08	3.657E-09	9.547E-10	4.288E-10	2.426E-10	9.328E-11	2.699E-11	1.070E-11	5.711E-12	3.535E-12
ENE	1.311E-08	2.684E-09	7.008E-10	3.147E-10	1.781E-10	6.847E-11	1.981E-11	7.851E-12	4.193E-12	2.595E-12
E	1.233E-08	2.526E-09	6.594E-10	2.962E-10	1.675E-10	6.443E-11	1.864E-11	7.388E-12	3.945E-12	2.442E-12
ESE	2.111E-08	4.324E-09	1.129E-09	5.070E-10	2.868E-10	1.103E-10	3.191E-11	1.265E-11	6.753E-12	4.180E-12
SE	3.021E-08	6.188E-09	1.615E-09	7.255E-10	4.104E-10	1.578E-10	4.566E-11	1.810E-11	9.664E-12	5.981E-12
SSE	3.418E-08	7.002E-09	1.828E-09	8.210E-10	4.644E-10	1.786E-10	5.167E-11	2.048E-11	1.094E-11	6.769E-12

VENTS GROUND LEVEL RELEASES - JAN-DEC 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION FROM SITE	DIST. (MI)	X/Q (SEC/M3) NO DECAY UNDEPLETED	X/Q (SEC/M3) 2.26 DAY DECAY UNDEPLETED	X/Q (SEC/M3) 8.0 DAY DECAY DEPLETED	D/Q (PER SQ.METER)
A	Site Boundary	S	.80	5.7E-06	5.7E-06	5.0E-06	3.4E-08
A	Site Boundary	SSW	.82	3.3E-06	3.3E-06	2.9E-06	1.8E-08
A	Site Boundary	SW	.97	1.3E-06	1.2E-06	1.1E-06	5.1E-09
A	Site Boundary	WSW	.93	1.4E-06	1.4E-06	1.2E-06	6.4E-09
A	Site Boundary	W	.91	1.9E-06	1.9E-06	1.7E-06	9.8E-09
A	Site Boundary	WNW	.94	2.5E-06	2.5E-06	2.2E-06	1.5E-08
A	Site Boundary	NW	.81	3.5E-06	3.5E-06	3.1E-06	2.3E-08
A	Site Boundary	NNW	.69	7.5E-06	7.5E-06	6.7E-06	3.3E-08
A	Site Boundary	N	.67	1.6E-05	1.6E-05	1.4E-05	6.6E-08
A	Site Boundary	NNE	.60	1.2E-05	1.2E-05	1.1E-05	4.5E-08
A	Site Boundary	NE	.62	7.4E-06	7.4E-06	6.7E-06	2.5E-08
A	Site Boundary	ENE	.59	6.7E-06	6.6E-06	6.0E-06	2.0E-08
A	Site Boundary	E	.53	8.1E-06	8.1E-06	7.4E-06	2.3E-08
A	Site Boundary	ESE	.54	1.1E-05	1.1E-05	1.0E-05	3.7E-08
A	Site Boundary	SE	.65	8.5E-06	8.4E-06	7.6E-06	3.9E-08
A	Site Boundary	SSE	.81	5.9E-06	5.9E-06	5.2E-06	2.9E-08
A	Nearest Res	SW	1.30	6.4E-07	6.3E-07	5.5E-07	2.5E-09
A	Nearest Res	WSW	1.80	2.9E-07	2.9E-07	2.5E-07	1.2E-09
A	Nearest Res	WNW	1.90	4.8E-07	4.8E-07	4.0E-07	2.6E-09
A	Nearest Res	NW	.90	2.7E-06	2.7E-06	2.4E-06	1.8E-08
A	Nearest Res	NNW	1.90	8.1E-07	8.0E-07	6.7E-07	2.7E-09
A	Nearest Cow	NNW	3.50	2.4E-07	2.3E-07	1.9E-07	6.5E-10
A	Nearest Garde	SW	2.20	2.0E-07	2.0E-07	1.6E-07	6.8E-10
A	Nearest Garde	WSW	1.80	2.9E-07	2.9E-07	2.5E-07	1.2E-09
A	Nearest Garde	WNW	1.90	4.8E-07	4.8E-07	4.0E-07	2.6E-09
A	Nearest Garde	NNW	3.00	3.2E-07	3.2E-07	2.5E-07	9.2E-10

Atmospheric Diffusion Estimates

Elevated Releases

January-March 2019

ERP ELEVATED STACK RELEASES - JAN-MAR 2019
NO DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	2.469E-11	4.325E-09	4.957E-08	9.160E-08	1.110E-07	9.765E-08	8.096E-08	6.689E-08	5.589E-08	6.193E-08	6.389E-08
SSW	3.238E-11	5.441E-09	3.661E-08	6.430E-08	7.819E-08	6.941E-08	5.792E-08	6.104E-08	5.973E-08	5.079E-08	4.376E-08
SW	7.246E-16	7.935E-10	3.111E-08	8.565E-08	1.556E-07	1.075E-07	7.835E-08	5.984E-08	4.747E-08	3.879E-08	3.247E-08
WSW	7.540E-16	9.830E-10	4.988E-08	1.458E-07	2.612E-07	1.662E-07	1.154E-07	8.532E-08	6.610E-08	5.304E-08	4.375E-08
W	4.074E-13	4.123E-08	2.136E-07	2.849E-07	2.708E-07	1.704E-07	1.174E-07	8.636E-08	6.665E-08	5.333E-08	4.389E-08
WNW	2.671E-14	9.350E-09	1.457E-07	2.774E-07	3.507E-07	2.167E-07	1.487E-07	1.154E-07	9.344E-08	7.468E-08	6.147E-08
NW	1.543E-15	1.460E-09	8.222E-08	2.529E-07	4.437E-07	2.584E-07	1.700E-07	1.232E-07	9.400E-08	7.370E-08	5.969E-08
NNW	3.975E-16	4.352E-10	1.453E-08	4.107E-08	8.227E-08	8.712E-08	8.073E-08	6.969E-08	5.918E-08	4.635E-08	3.750E-08
N	1.968E-16	2.485E-10	5.290E-09	1.279E-08	2.174E-08	2.387E-08	2.273E-08	2.018E-08	1.776E-08	1.567E-08	1.391E-08
NNE	2.846E-16	2.700E-10	4.965E-09	1.080E-08	1.629E-08	1.638E-08	1.483E-08	1.305E-08	1.143E-08	1.005E-08	8.912E-09
NE	1.052E-15	1.122E-09	1.873E-08	3.655E-08	4.574E-08	4.052E-08	3.366E-08	2.783E-08	2.326E-08	1.973E-08	1.697E-08
ENE	6.839E-16	7.218E-10	1.222E-08	2.417E-08	3.098E-08	2.794E-08	2.352E-08	1.967E-08	1.661E-08	1.421E-08	1.233E-08
E	4.139E-16	3.803E-10	6.243E-09	1.233E-08	1.629E-08	1.525E-08	1.327E-08	1.142E-08	9.875E-09	8.624E-09	7.615E-09
ESE	3.238E-11	4.445E-09	2.024E-08	3.226E-08	3.736E-08	3.266E-08	2.704E-08	2.234E-08	1.867E-08	1.583E-08	1.362E-08
SE	3.238E-11	6.166E-09	4.423E-08	7.592E-08	8.914E-08	7.751E-08	6.376E-08	5.235E-08	4.349E-08	3.667E-08	3.137E-08
SSE	8.946E-11	1.103E-08	5.327E-08	8.425E-08	9.572E-08	8.304E-08	6.857E-08	5.659E-08	4.727E-08	4.007E-08	3.446E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	5.573E-08	3.392E-08	2.171E-08	1.218E-08	8.318E-09	6.174E-09	4.765E-09	3.831E-09	3.193E-09	2.716E-09	2.342E-09
SSW	3.888E-08	2.364E-08	1.494E-08	8.240E-09	5.482E-09	3.972E-09	3.045E-09	2.434E-09	2.006E-09	1.692E-09	1.453E-09
SW	2.961E-08	2.102E-08	1.374E-08	7.937E-09	5.580E-09	4.227E-09	3.376E-09	2.735E-09	2.279E-09	1.942E-09	1.684E-09
WSW	3.814E-08	2.286E-08	1.541E-08	9.003E-09	5.987E-09	4.371E-09	3.386E-09	2.729E-09	2.264E-09	1.922E-09	1.660E-09
W	3.693E-08	1.987E-08	1.379E-08	8.528E-09	6.045E-09	4.438E-09	3.438E-09	2.774E-09	2.304E-09	1.958E-09	1.693E-09
WNW	5.250E-08	3.012E-08	2.082E-08	1.294E-08	8.954E-09	6.732E-09	5.357E-09	4.397E-09	3.691E-09	3.155E-09	2.743E-09
NW	4.990E-08	2.630E-08	1.719E-08	9.848E-09	6.537E-09	4.765E-09	3.704E-09	2.986E-09	2.476E-09	2.099E-09	1.811E-09
NNW	3.151E-08	1.682E-08	1.079E-08	6.094E-09	4.074E-09	2.986E-09	2.325E-09	1.883E-09	1.572E-09	1.338E-09	1.157E-09
N	1.246E-08	8.110E-09	6.680E-09	5.055E-09	4.013E-09	3.192E-09	2.494E-09	2.021E-09	1.685E-09	1.436E-09	1.245E-09
NNE	9.982E-09	1.338E-08	8.695E-09	5.002E-09	3.392E-09	2.515E-09	1.972E-09	1.607E-09	1.347E-09	1.153E-09	1.004E-09
NE	1.749E-08	2.081E-08	1.339E-08	7.604E-09	5.111E-09	3.765E-09	2.963E-09	2.418E-09	2.027E-09	1.729E-09	1.500E-09
ENE	1.280E-08	2.102E-08	1.409E-08	8.426E-09	5.856E-09	4.421E-09	3.747E-09	3.212E-09	2.706E-09	2.328E-09	2.036E-09
E	8.358E-09	1.329E-08	8.817E-09	5.202E-09	3.583E-09	2.686E-09	2.124E-09	1.743E-09	1.520E-09	1.337E-09	1.167E-09
ESE	1.346E-08	1.444E-08	9.595E-09	5.672E-09	3.912E-09	2.935E-09	2.323E-09	1.907E-09	1.608E-09	1.384E-09	1.210E-09
SE	2.719E-08	1.584E-08	1.147E-08	7.516E-09	5.345E-09	4.159E-09	3.427E-09	2.932E-09	2.452E-09	2.095E-09	1.820E-09
SSE	3.520E-08	3.272E-08	2.081E-08	1.162E-08	7.719E-09	5.632E-09	4.359E-09	3.513E-09	2.916E-09	2.475E-09	2.139E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	5.820E-08	1.008E-07	7.978E-08	6.133E-08	6.029E-08	3.334E-08	1.258E-08	6.182E-09	3.855E-09	2.719E-09
SSW	4.199E-08	7.120E-08	6.223E-08	5.670E-08	4.404E-08	2.316E-08	8.502E-09	4.004E-09	2.446E-09	1.696E-09
SW	4.861E-08	1.187E-07	7.873E-08	4.770E-08	3.328E-08	1.969E-08	8.180E-09	4.247E-09	2.744E-09	1.946E-09
WSW	8.162E-08	1.933E-07	1.169E-07	6.661E-08	4.442E-08	2.294E-08	9.086E-09	4.408E-09	2.740E-09	1.926E-09
W	2.070E-07	2.293E-07	1.191E-07	6.721E-08	4.411E-08	2.096E-08	8.593E-09	4.466E-09	2.785E-09	1.962E-09
WNW	1.739E-07	2.748E-07	1.535E-07	9.256E-08	6.206E-08	3.096E-08	1.292E-08	6.774E-09	4.402E-09	3.161E-09
NW	1.401E-07	3.190E-07	1.748E-07	9.460E-08	6.021E-08	2.749E-08	1.001E-08	4.813E-09	2.997E-09	2.104E-09
NNW	2.319E-08	7.527E-08	7.802E-08	5.729E-08	3.791E-08	1.740E-08	6.240E-09	3.012E-09	1.891E-09	1.340E-09
N	7.503E-09	2.070E-08	2.201E-08	1.766E-08	1.389E-08	8.442E-09	4.953E-09	3.132E-09	2.028E-09	1.439E-09
NNE	6.514E-09	1.511E-08	1.453E-08	1.137E-08	9.647E-09	1.054E-08	5.107E-09	2.532E-09	1.612E-09	1.155E-09
NE	2.274E-08	4.138E-08	3.316E-08	2.322E-08	1.798E-08	1.677E-08	7.782E-09	3.803E-09	2.425E-09	1.733E-09
ENE	1.498E-08	2.811E-08	2.316E-08	1.657E-08	1.306E-08	1.611E-08	8.542E-09	4.534E-09	3.172E-09	2.332E-09
E	7.644E-09	1.495E-08	1.306E-08	9.840E-09	8.189E-09	1.021E-08	5.286E-09	2.700E-09	1.767E-09	1.328E-09
ESE	2.207E-08	3.414E-08	2.666E-08	1.864E-08	1.422E-08	1.207E-08	5.762E-09	2.951E-09	1.912E-09	1.386E-09
SE	4.986E-08	8.104E-08	6.286E-08	4.343E-08	3.140E-08	1.642E-08	7.429E-09	4.182E-09	2.890E-09	2.099E-09
SSE	5.765E-08	8.753E-08	6.763E-08	4.719E-08	3.640E-08	2.798E-08	1.193E-08	5.679E-09	3.527E-09	2.481E-09

ERP ELEVATED STACK RELEASES - JAN-MAR 2019
2.260 DAY DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	2.469E-11	4.323E-09	4.953E-08	9.149E-08	1.108E-07	9.738E-08	8.066E-08	6.659E-08	5.559E-08	6.152E-08	6.337E-08
SSW	3.236E-11	5.435E-09	3.656E-08	6.420E-08	7.800E-08	6.918E-08	5.767E-08	6.072E-08	5.935E-08	5.042E-08	4.340E-08
SW	7.244E-16	7.929E-10	3.107E-08	8.550E-08	1.551E-07	1.071E-07	7.789E-08	5.941E-08	4.705E-08	3.840E-08	3.209E-08
WSW	7.538E-16	9.822E-10	4.981E-08	1.455E-07	2.602E-07	1.653E-07	1.146E-07	8.455E-08	6.538E-08	5.236E-08	4.311E-08
W	4.073E-13	4.120E-08	2.132E-07	2.842E-07	2.695E-07	1.693E-07	1.164E-07	8.549E-08	6.585E-08	5.259E-08	4.319E-08
WNW	2.670E-14	9.344E-09	1.455E-07	2.770E-07	3.495E-07	2.156E-07	1.477E-07	1.143E-07	9.238E-08	7.368E-08	6.053E-08
NW	1.543E-15	1.459E-09	8.214E-08	2.526E-07	4.427E-07	2.576E-07	1.693E-07	1.225E-07	9.340E-08	7.315E-08	5.918E-08
NNW	3.974E-16	4.348E-10	1.451E-08	4.099E-08	8.204E-08	8.681E-08	8.038E-08	6.933E-08	5.883E-08	4.603E-08	3.722E-08
N	1.967E-16	2.483E-10	5.281E-09	1.276E-08	2.167E-08	2.377E-08	2.261E-08	2.005E-08	1.763E-08	1.554E-08	1.378E-08
NNE	2.845E-16	2.698E-10	4.959E-09	1.078E-08	1.624E-08	1.632E-08	1.476E-08	1.298E-08	1.136E-08	9.982E-09	8.841E-09
NE	1.051E-15	1.121E-09	1.871E-08	3.649E-08	4.563E-08	4.039E-08	3.352E-08	2.769E-08	2.313E-08	1.959E-08	1.685E-08
ENE	6.837E-16	7.213E-10	1.220E-08	2.414E-08	3.090E-08	2.784E-08	2.342E-08	1.957E-08	1.651E-08	1.411E-08	1.223E-08
E	4.138E-16	3.801E-10	6.236E-09	1.231E-08	1.625E-08	1.520E-08	1.322E-08	1.136E-08	9.818E-09	8.567E-09	7.559E-09
ESE	3.236E-11	4.440E-09	2.022E-08	3.221E-08	3.728E-08	3.257E-08	2.695E-08	2.225E-08	1.858E-08	1.575E-08	1.354E-08
SE	3.237E-11	6.161E-09	4.419E-08	7.583E-08	8.898E-08	7.732E-08	6.356E-08	5.215E-08	4.330E-08	3.648E-08	3.119E-08
SSE	8.941E-11	1.102E-08	5.322E-08	8.416E-08	9.555E-08	8.283E-08	6.835E-08	5.637E-08	4.705E-08	3.985E-08	3.424E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	5.522E-08	3.341E-08	2.126E-08	1.180E-08	7.957E-09	5.833E-09	4.448E-09	3.534E-09	2.909E-09	2.445E-09	2.083E-09
SSW	3.852E-08	2.330E-08	1.465E-08	8.005E-09	5.274E-09	3.785E-09	2.873E-09	2.275E-09	1.857E-09	1.551E-09	1.320E-09
SW	2.921E-08	2.050E-08	1.328E-08	7.535E-09	5.195E-09	3.860E-09	3.022E-09	2.404E-09	1.969E-09	1.648E-09	1.405E-09
WSW	3.749E-08	2.219E-08	1.477E-08	8.426E-09	5.481E-09	3.916E-09	2.970E-09	2.344E-09	1.907E-09	1.587E-09	1.345E-09
W	3.628E-08	1.934E-08	1.328E-08	8.050E-09	5.592E-09	4.027E-09	3.063E-09	2.427E-09	1.981E-09	1.654E-09	1.405E-09
WNW	5.158E-08	2.927E-08	2.001E-08	1.216E-08	8.240E-09	6.070E-09	4.733E-09	3.810E-09	3.137E-09	2.633E-09	2.248E-09
NW	4.942E-08	2.589E-08	1.682E-08	9.521E-09	6.249E-09	4.505E-09	3.462E-09	2.760E-09	2.265E-09	1.900E-09	1.623E-09
NNW	3.124E-08	1.660E-08	1.061E-08	5.944E-09	3.942E-09	2.866E-09	2.214E-09	1.779E-09	1.474E-09	1.244E-09	1.068E-09
N	1.234E-08	7.997E-09	6.564E-09	4.936E-09	3.897E-09	3.081E-09	2.392E-09	1.926E-09	1.596E-09	1.351E-09	1.164E-09
NNE	9.898E-09	1.317E-08	8.507E-09	4.838E-09	3.243E-09	2.377E-09	1.843E-09	1.484E-09	1.230E-09	1.041E-09	8.958E-10
NE	1.734E-08	2.057E-08	1.319E-08	7.431E-09	4.958E-09	3.625E-09	2.832E-09	2.294E-09	1.909E-09	1.616E-09	1.392E-09
ENE	1.269E-08	2.072E-08	1.382E-08	8.185E-09	5.632E-09	4.209E-09	3.529E-09	2.991E-09	2.495E-09	2.124E-09	1.839E-09
E	8.288E-09	1.315E-08	8.693E-09	5.093E-09	3.484E-09	2.594E-09	2.038E-09	1.662E-09	1.440E-09	1.259E-09	1.091E-09
ESE	1.337E-08	1.427E-08	9.443E-09	5.533E-09	3.781E-09	2.811E-09	2.204E-09	1.792E-09	1.497E-09	1.277E-09	1.106E-09
SE	2.702E-08	1.569E-08	1.132E-08	7.366E-09	5.198E-09	4.010E-09	3.274E-09	2.773E-09	2.300E-09	1.948E-09	1.679E-09
SSE	3.495E-08	3.231E-08	2.046E-08	1.133E-08	7.458E-09	5.394E-09	4.138E-09	3.306E-09	2.720E-09	2.289E-09	1.961E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	5.813E-08	1.005E-07	7.949E-08	6.099E-08	5.981E-08	3.286E-08	1.219E-08	5.845E-09	3.557E-09	2.448E-09
SSW	4.193E-08	7.101E-08	6.196E-08	5.634E-08	4.367E-08	2.284E-08	8.268E-09	3.817E-09	2.287E-09	1.556E-09
SW	4.853E-08	1.183E-07	7.827E-08	4.729E-08	3.289E-08	1.923E-08	7.772E-09	3.881E-09	2.415E-09	1.653E-09
WSW	8.147E-08	1.925E-07	1.161E-07	6.590E-08	4.377E-08	2.229E-08	8.528E-09	3.955E-09	2.356E-09	1.592E-09
W	2.065E-07	2.282E-07	1.181E-07	6.641E-08	4.342E-08	2.041E-08	8.119E-09	4.059E-09	2.439E-09	1.659E-09
WNW	1.737E-07	2.739E-07	1.525E-07	9.153E-08	6.111E-08	3.011E-08	1.216E-08	6.114E-09	3.817E-09	2.640E-09
NW	1.400E-07	3.182E-07	1.741E-07	9.401E-08	5.970E-08	2.709E-08	9.690E-09	4.553E-09	2.772E-09	1.906E-09
NNW	2.315E-08	7.503E-08	7.767E-08	5.695E-08	3.762E-08	1.719E-08	6.091E-09	2.892E-09	1.787E-09	1.247E-09
N	7.486E-09	2.062E-08	2.189E-08	1.753E-08	1.377E-08	8.325E-09	4.836E-09	3.023E-09	1.933E-09	1.354E-09
NNE	6.503E-09	1.506E-08	1.446E-08	1.130E-08	9.570E-09	1.037E-08	4.945E-09	2.394E-09	1.490E-09	1.043E-09
NE	2.270E-08	4.127E-08	3.302E-08	2.308E-08	1.784E-08	1.657E-08	7.611E-09	3.663E-09	2.301E-09	1.620E-09
ENE	1.496E-08	2.804E-08	2.306E-08	1.647E-08	1.296E-08	1.587E-08	8.303E-09	4.317E-09	2.956E-09	2.128E-09
E	7.634E-09	1.491E-08	1.301E-08	9.783E-09	8.128E-09	1.009E-08	5.178E-09	2.609E-09	1.685E-09	1.250E-09
ESE	2.204E-08	3.406E-08	2.657E-08	1.855E-08	1.413E-08	1.193E-08	5.623E-09	2.827E-09	1.797E-09	1.279E-09
SE	4.980E-08	8.088E-08	6.267E-08	4.323E-08	3.121E-08	1.626E-08	7.281E-09	4.032E-09	2.736E-09	1.953E-09
SSE	5.759E-08	8.736E-08	6.742E-08	4.697E-08	3.616E-08	2.763E-08	1.164E-08	5.442E-09	3.321E-09	2.295E-09

ERP ELEVATED STACK RELEASES - JAN-MAR 2019
8.000 DAY DECAY, DEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	2.469E-11	4.313E-09	4.952E-08	9.152E-08	1.099E-07	9.581E-08	7.875E-08	6.455E-08	5.355E-08	5.913E-08	6.084E-08
SSW	3.238E-11	5.407E-09	3.646E-08	6.413E-08	7.734E-08	6.806E-08	5.631E-08	5.898E-08	5.741E-08	4.852E-08	4.158E-08
SW	7.246E-16	7.933E-10	3.110E-08	8.561E-08	1.540E-07	1.056E-07	7.646E-08	5.810E-08	4.589E-08	3.736E-08	3.116E-08
WSW	7.540E-16	9.827E-10	4.986E-08	1.455E-07	2.580E-07	1.628E-07	1.123E-07	8.255E-08	6.363E-08	5.084E-08	4.177E-08
W	4.074E-13	4.122E-08	2.124E-07	2.819E-07	2.654E-07	1.656E-07	1.133E-07	8.287E-08	6.362E-08	5.067E-08	4.152E-08
WNW	2.671E-14	9.348E-09	1.454E-07	2.750E-07	3.445E-07	2.110E-07	1.439E-07	1.111E-07	8.970E-08	7.133E-08	5.841E-08
NW	1.543E-15	1.460E-09	8.220E-08	2.518E-07	4.383E-07	2.532E-07	1.654E-07	1.192E-07	9.061E-08	7.066E-08	5.689E-08
NNW	3.974E-16	4.351E-10	1.453E-08	4.104E-08	8.168E-08	8.606E-08	7.950E-08	6.846E-08	5.801E-08	4.522E-08	3.640E-08
N	1.968E-16	2.484E-10	5.288E-09	1.278E-08	2.158E-08	2.356E-08	2.233E-08	1.974E-08	1.732E-08	1.524E-08	1.349E-08
NNE	2.846E-16	2.700E-10	4.963E-09	1.079E-08	1.616E-08	1.614E-08	1.454E-08	1.273E-08	1.111E-08	9.740E-09	8.607E-09
NE	1.051E-15	1.121E-09	1.873E-08	3.653E-08	4.529E-08	3.975E-08	3.271E-08	2.682E-08	2.225E-08	1.873E-08	1.602E-08
ENE	6.838E-16	7.216E-10	1.221E-08	2.416E-08	3.068E-08	2.742E-08	2.289E-08	1.900E-08	1.593E-08	1.354E-08	1.168E-08
E	4.139E-16	3.803E-10	6.241E-09	1.232E-08	1.614E-08	1.500E-08	1.297E-08	1.110E-08	9.550E-09	8.305E-09	7.307E-09
ESE	3.238E-11	4.411E-09	2.010E-08	3.210E-08	3.692E-08	3.201E-08	2.629E-08	2.156E-08	1.790E-08	1.508E-08	1.290E-08
SE	3.238E-11	6.133E-09	4.408E-08	7.575E-08	8.821E-08	7.601E-08	6.199E-08	5.049E-08	4.163E-08	3.486E-08	2.963E-08
SSE	8.944E-11	1.095E-08	5.294E-08	8.389E-08	9.462E-08	8.140E-08	6.668E-08	5.463E-08	4.533E-08	3.818E-08	3.265E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	5.284E-08	3.144E-08	1.948E-08	1.028E-08	6.581E-09	4.618E-09	3.396E-09	2.614E-09	2.095E-09	1.727E-09	1.446E-09
SSW	3.678E-08	2.180E-08	1.333E-08	6.925E-09	4.340E-09	3.017E-09	2.230E-09	1.724E-09	1.378E-09	1.130E-09	9.445E-10
SW	2.837E-08	1.984E-08	1.253E-08	6.741E-09	4.375E-09	3.095E-09	2.363E-09	1.844E-09	1.485E-09	1.225E-09	1.030E-09
WSW	3.631E-08	2.125E-08	1.384E-08	7.626E-09	4.825E-09	3.373E-09	2.513E-09	1.954E-09	1.569E-09	1.291E-09	1.082E-09
W	3.481E-08	1.843E-08	1.260E-08	7.360E-09	4.895E-09	3.446E-09	2.571E-09	2.004E-09	1.613E-09	1.330E-09	1.118E-09
WNW	4.962E-08	2.763E-08	1.846E-08	1.067E-08	6.800E-09	4.786E-09	3.623E-09	2.856E-09	2.312E-09	1.909E-09	1.607E-09
NW	4.727E-08	2.410E-08	1.522E-08	8.168E-09	5.122E-09	3.558E-09	2.655E-09	2.067E-09	1.660E-09	1.367E-09	1.147E-09
NNW	3.041E-08	1.570E-08	9.726E-09	5.110E-09	3.147E-09	2.153E-09	1.583E-09	1.226E-09	9.894E-10	8.163E-10	6.857E-10
N	1.205E-08	7.774E-09	6.383E-09	4.817E-09	3.716E-09	2.816E-09	2.135E-09	1.684E-09	1.370E-09	1.141E-09	9.684E-10
NNE	9.652E-09	1.288E-08	8.081E-09	4.373E-09	2.799E-09	1.976E-09	1.483E-09	1.162E-09	9.398E-10	7.782E-10	6.567E-10
NE	1.646E-08	1.963E-08	1.221E-08	6.548E-09	4.185E-09	2.954E-09	2.244E-09	1.775E-09	1.447E-09	1.202E-09	1.017E-09
ENE	1.212E-08	2.017E-08	1.308E-08	7.300E-09	4.685E-09	3.305E-09	2.637E-09	2.156E-09	1.754E-09	1.461E-09	1.239E-09
E	8.031E-09	1.286E-08	8.245E-09	4.532E-09	2.876E-09	2.013E-09	1.498E-09	1.165E-09	9.661E-10	8.156E-10	6.908E-10
ESE	1.271E-08	1.366E-08	8.803E-09	4.884E-09	3.135E-09	2.212E-09	1.657E-09	1.295E-09	1.043E-09	8.607E-10	7.234E-10
SE	2.552E-08	1.451E-08	1.033E-08	6.640E-09	4.654E-09	3.591E-09	2.944E-09	2.502E-09	2.046E-09	1.712E-09	1.459E-09
SSE	3.328E-08	3.064E-08	1.881E-08	9.880E-09	6.200E-09	4.309E-09	3.195E-09	2.477E-09	1.984E-09	1.630E-09	1.365E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	5.814E-08	9.957E-08	7.762E-08	5.882E-08	5.737E-08	3.088E-08	1.068E-08	4.653E-09	2.640E-09	1.732E-09
SSW	4.185E-08	7.028E-08	6.051E-08	5.447E-08	4.186E-08	2.137E-08	7.200E-09	3.055E-09	1.737E-09	1.135E-09
SW	4.859E-08	1.173E-07	7.689E-08	4.613E-08	3.197E-08	1.849E-08	6.976E-09	3.143E-09	1.855E-09	1.229E-09
WSW	8.151E-08	1.907E-07	1.139E-07	6.416E-08	4.243E-08	2.130E-08	7.762E-09	3.416E-09	1.967E-09	1.296E-09
W	2.053E-07	2.247E-07	1.151E-07	6.419E-08	4.175E-08	1.948E-08	7.430E-09	3.482E-09	2.017E-09	1.335E-09
WNW	1.728E-07	2.697E-07	1.487E-07	8.882E-08	5.898E-08	2.844E-08	1.068E-08	4.858E-09	2.868E-09	1.917E-09
NW	1.397E-07	3.146E-07	1.704E-07	9.119E-08	5.741E-08	2.530E-08	8.382E-09	3.614E-09	2.080E-09	1.372E-09
NNW	2.318E-08	7.460E-08	7.684E-08	5.612E-08	3.680E-08	1.631E-08	5.263E-09	2.190E-09	1.238E-09	8.192E-10
N	7.498E-09	2.050E-08	2.162E-08	1.722E-08	1.347E-08	8.107E-09	4.675E-09	2.783E-09	1.693E-09	1.145E-09
NNE	6.511E-09	1.496E-08	1.424E-08	1.105E-08	9.329E-09	1.003E-08	4.498E-09	1.998E-09	1.169E-09	7.811E-10
NE	2.273E-08	4.088E-08	3.223E-08	2.222E-08	1.699E-08	1.563E-08	6.755E-09	2.998E-09	1.784E-09	1.206E-09
ENE	1.497E-08	2.778E-08	2.254E-08	1.590E-08	1.240E-08	1.523E-08	7.422E-09	3.406E-09	2.140E-09	1.465E-09
E	7.641E-09	1.479E-08	1.276E-08	9.517E-09	7.871E-09	9.735E-09	4.621E-09	2.037E-09	1.184E-09	8.140E-10
ESE	2.194E-08	3.366E-08	2.592E-08	1.787E-08	1.348E-08	1.129E-08	4.978E-09	2.236E-09	1.303E-09	8.640E-10
SE	4.972E-08	8.002E-08	6.113E-08	4.158E-08	2.966E-08	1.510E-08	6.578E-09	3.616E-09	2.455E-09	1.717E-09
SSE	5.736E-08	8.636E-08	6.579E-08	4.526E-08	3.452E-08	2.597E-08	1.023E-08	4.368E-09	2.495E-09	1.637E-09

ERP ELEVATED STACK RELEASES - JAN-MAR 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) AT FIXED POINTS BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	.25	.50	.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
					DISTANCES IN MILES						
S	5.382E-10	1.857E-09	3.678E-09	3.747E-09	2.323E-09	1.554E-09	1.097E-09	8.053E-10	6.097E-10	5.049E-10	4.573E-10
SSW	4.271E-10	1.190E-09	2.259E-09	2.276E-09	1.405E-09	9.384E-10	6.617E-10	4.857E-10	4.629E-10	3.500E-10	2.739E-10
SW	6.695E-11	4.017E-10	8.553E-10	8.859E-10	1.079E-09	5.895E-10	3.659E-10	2.487E-10	1.798E-10	1.360E-10	1.065E-10
WSW	8.034E-11	4.820E-10	1.026E-09	2.310E-09	1.317E-09	7.163E-10	4.431E-10	3.004E-10	2.169E-10	1.639E-10	1.282E-10
W	8.436E-11	4.133E-09	4.068E-09	2.907E-09	1.400E-09	7.555E-10	4.651E-10	3.142E-10	2.261E-10	1.705E-10	1.331E-10
WNW	1.178E-10	7.070E-10	5.278E-09	4.016E-09	2.536E-09	1.279E-09	7.598E-10	5.051E-10	3.740E-10	2.861E-10	2.312E-10
NW	1.219E-10	7.311E-10	1.557E-09	4.236E-09	2.815E-09	1.400E-09	8.277E-10	5.497E-10	3.989E-10	3.101E-10	2.552E-10
NNW	3.883E-11	2.330E-10	4.961E-10	5.138E-10	6.187E-10	3.394E-10	2.157E-10	1.894E-10	1.454E-10	1.208E-10	1.067E-10
N	2.544E-11	1.526E-10	3.250E-10	3.366E-10	2.103E-10	1.410E-10	9.959E-11	7.316E-11	5.541E-11	4.301E-11	3.406E-11
NNE	2.678E-11	1.607E-10	3.421E-10	3.544E-10	2.213E-10	1.484E-10	1.048E-10	7.701E-11	5.832E-11	4.527E-11	3.585E-11
NE	9.373E-11	5.623E-10	1.197E-09	1.240E-09	7.747E-10	5.195E-10	3.669E-10	2.695E-10	2.041E-10	1.584E-10	1.255E-10
ENE	6.160E-11	3.695E-10	7.869E-10	8.150E-10	5.091E-10	3.414E-10	2.411E-10	1.771E-10	1.341E-10	1.041E-10	8.246E-11
E	3.348E-11	2.008E-10	4.276E-10	4.430E-10	2.767E-10	1.855E-10	1.310E-10	9.626E-11	7.291E-11	5.659E-11	4.481E-11
ESE	3.441E-10	6.920E-10	1.198E-09	1.178E-09	7.186E-10	4.783E-10	3.367E-10	2.470E-10	1.869E-10	1.450E-10	1.148E-10
SE	5.235E-10	1.769E-09	3.490E-09	3.552E-09	2.202E-09	1.473E-09	1.039E-09	7.629E-10	5.777E-10	4.483E-10	3.550E-10
SSE	1.036E-09	2.100E-09	3.646E-09	3.587E-09	2.189E-09	1.457E-09	1.026E-09	7.524E-10	5.694E-10	4.418E-10	3.499E-10

DIRECTION FROM SITE	5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
					DISTANCES IN MILES						
S	3.676E-10	1.951E-10	1.216E-10	6.438E-11	3.963E-11	3.569E-11	2.550E-11	1.908E-11	1.502E-11	1.193E-11	9.739E-12
SSW	2.211E-10	1.277E-10	8.204E-11	4.481E-11	3.298E-11	2.291E-11	1.642E-11	1.233E-11	9.663E-12	7.719E-12	6.300E-12
SW	8.622E-11	6.824E-11	4.780E-11	2.823E-11	1.788E-11	1.312E-11	8.838E-12	6.636E-12	5.160E-12	4.122E-12	3.364E-12
WSW	1.031E-10	7.239E-11	4.929E-11	3.170E-11	1.918E-11	1.286E-11	9.336E-12	7.011E-12	5.451E-12	4.354E-12	3.554E-12
W	1.069E-10	4.771E-11	4.731E-11	2.950E-11	1.967E-11	1.361E-11	9.755E-12	7.325E-12	5.695E-12	4.549E-12	3.713E-12
WNW	1.978E-10	1.138E-10	7.958E-11	4.685E-11	3.035E-11	2.049E-11	1.473E-11	1.105E-11	8.640E-12	6.901E-12	5.633E-12
NW	2.209E-10	1.346E-10	9.652E-11	5.956E-11	3.622E-11	2.426E-11	1.753E-11	1.316E-11	1.023E-11	8.175E-12	6.673E-12
NNW	9.849E-11	7.173E-11	5.537E-11	3.524E-11	2.268E-11	1.497E-11	9.410E-12	6.786E-12	5.275E-12	4.214E-12	3.441E-12
N	2.743E-11	1.299E-11	7.914E-12	4.169E-12	3.366E-11	1.700E-11	1.218E-11	9.151E-12	7.117E-12	5.687E-12	4.643E-12
NNE	2.887E-11	7.444E-11	4.576E-11	2.356E-11	1.435E-11	9.606E-12	6.869E-12	5.146E-12	3.995E-12	3.188E-12	2.600E-12
NE	1.011E-10	1.138E-10	6.972E-11	3.576E-11	2.174E-11	1.456E-11	1.071E-11	8.042E-12	6.253E-12	5.015E-12	4.093E-12
ENE	6.641E-11	7.674E-11	5.574E-11	3.391E-11	2.160E-11	1.431E-11	1.005E-11	7.142E-12	5.556E-12	4.442E-12	3.628E-12
E	3.609E-11	5.847E-11	4.469E-11	2.824E-11	1.815E-11	1.199E-11	8.378E-12	6.108E-12	4.631E-12	3.368E-12	2.749E-12
ESE	9.250E-11	8.781E-11	6.131E-11	3.614E-11	2.287E-11	1.519E-11	1.072E-11	7.907E-12	6.062E-12	4.790E-12	3.876E-12
SE	2.860E-10	1.354E-10	8.254E-11	4.336E-11	2.634E-11	1.798E-11	1.327E-11	1.915E-11	1.479E-11	1.176E-11	9.585E-12
SSE	2.818E-10	2.763E-10	1.690E-10	8.653E-11	5.262E-11	3.527E-11	2.526E-11	1.895E-11	1.472E-11	1.175E-11	9.591E-12

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
					SEGMENT BOUNDARIES IN MILES					
S	3.304E-09	2.298E-09	1.102E-09	6.257E-10	4.382E-10	2.007E-10	6.609E-11	3.267E-11	1.937E-11	1.203E-11
SSW	2.029E-09	1.391E-09	6.651E-10	4.264E-10	2.769E-10	1.282E-10	4.782E-11	2.300E-11	1.248E-11	7.770E-12
SW	7.681E-10	8.184E-10	3.787E-10	1.828E-10	1.077E-10	6.315E-11	2.798E-11	1.267E-11	6.703E-12	4.149E-12
WSW	1.476E-09	1.270E-09	4.589E-10	2.206E-10	1.295E-10	6.895E-11	3.004E-11	1.314E-11	7.081E-12	4.383E-12
W	3.566E-09	1.448E-09	4.822E-10	2.301E-10	1.344E-10	6.068E-11	2.909E-11	1.369E-11	7.398E-12	4.579E-12
WNW	3.701E-09	2.306E-09	7.965E-10	3.780E-10	2.351E-10	1.173E-10	4.679E-11	2.081E-11	1.118E-11	6.947E-12
NW	2.564E-09	2.502E-09	8.692E-10	4.082E-10	2.587E-10	1.368E-10	5.740E-11	2.476E-11	1.330E-11	8.229E-12
NNW	4.455E-10	4.713E-10	2.382E-10	1.486E-10	1.078E-10	7.041E-11	3.413E-11	1.480E-11	6.960E-12	4.242E-12
N	2.919E-10	2.076E-10	1.001E-10	5.576E-11	3.425E-11	1.394E-11	1.811E-11	1.952E-11	9.243E-12	5.724E-12
NNE	3.072E-10	2.185E-10	1.053E-10	5.869E-11	3.606E-11	5.157E-11	2.440E-11	9.775E-12	5.200E-12	3.209E-12
NE	1.075E-09	7.647E-10	3.686E-10	2.054E-10	1.262E-10	9.138E-11	3.708E-11	1.494E-11	8.122E-12	5.041E-12
ENE	7.066E-10	5.025E-10	2.422E-10	1.350E-10	8.293E-11	6.511E-11	3.329E-11	1.455E-11	7.368E-12	4.471E-12
E	3.840E-10	2.731E-10	1.317E-10	7.336E-11	4.507E-11	4.737E-11	2.741E-11	1.219E-11	6.194E-12	3.513E-12
ESE	1.077E-09	7.139E-10	3.386E-10	1.881E-10	1.155E-10	7.708E-11	3.583E-11	1.545E-11	8.008E-12	4.829E-12
SE	3.135E-09	2.178E-09	1.044E-09	5.813E-10	3.571E-10	1.454E-10	4.450E-11	1.833E-11	1.581E-11	1.185E-11
SSE	3.276E-09	2.174E-09	1.032E-09	5.731E-10	3.519E-10	2.298E-10	8.979E-11	3.589E-11	1.914E-11	1.183E-11

ERP ELEVATED STACK RELEASES - JAN-MAR 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION FROM SITE	DIST. (MI)	X/Q (SEC/M3) NO DECAY UNDEPLETED	X/Q (SEC/M3) 2.26 DAY DECAY UNDEPLETED	X/Q (SEC/M3) 8.0 DAY DECAY DEPLETED	D/Q (PER SQ.METER)
A	Site Boundary	S	.80	6.0E-08	6.0E-08	6.0E-08	3.8E-09
A	Site Boundary	SSW	.82	4.6E-08	4.6E-08	4.6E-08	2.4E-09
A	Site Boundary	SW	.97	8.0E-08	8.0E-08	8.0E-08	9.1E-10
A	Site Boundary	WSW	.93	1.2E-07	1.2E-07	1.2E-07	1.5E-09
A	Site Boundary	W	.91	2.7E-07	2.7E-07	2.7E-07	3.1E-09
A	Site Boundary	WNW	.94	2.5E-07	2.5E-07	2.5E-07	4.5E-09
A	Site Boundary	NW	.81	1.2E-07	1.2E-07	1.2E-07	1.6E-09
A	Site Boundary	NNW	.69	8.5E-09	8.5E-09	8.5E-09	4.3E-10
A	Site Boundary	N	.67	3.0E-09	2.9E-09	3.0E-09	2.7E-10
A	Site Boundary	NNE	.60	1.3E-09	1.3E-09	1.3E-09	2.3E-10
A	Site Boundary	NE	.62	7.1E-09	7.1E-09	7.1E-09	8.7E-10
A	Site Boundary	ENE	.59	3.0E-09	3.0E-09	3.0E-09	5.1E-10
A	Site Boundary	E	.53	6.1E-10	6.1E-10	6.1E-10	2.2E-10
A	Site Boundary	ESE	.54	5.9E-09	5.9E-09	5.9E-09	7.6E-10
A	Site Boundary	SE	.65	2.5E-08	2.5E-08	2.5E-08	2.8E-09
A	Site Boundary	SSE	.81	6.3E-08	6.3E-08	6.3E-08	3.8E-09
A	Nearest Res	SW	1.30	1.4E-07	1.4E-07	1.4E-07	1.4E-09
A	Nearest Res	WSW	1.80	2.0E-07	2.0E-07	1.9E-07	8.9E-10
A	Nearest Res	WNW	1.90	2.4E-07	2.4E-07	2.3E-07	1.4E-09
A	Nearest Res	NW	.90	1.8E-07	1.8E-07	1.8E-07	4.6E-09
A	Nearest Res	NNW	1.90	8.7E-08	8.7E-08	8.6E-08	3.8E-10
A	Nearest Cow	NNW	3.50	5.9E-08	5.9E-08	5.8E-08	1.5E-10
A	Nearest Garde	SW	2.20	9.4E-08	9.4E-08	9.2E-08	4.8E-10
A	Nearest Garde	WSW	1.80	2.0E-07	2.0E-07	1.9E-07	8.9E-10
A	Nearest Garde	WNW	1.90	2.4E-07	2.4E-07	2.3E-07	1.4E-09
A	Nearest Garde	NNW	3.00	7.0E-08	6.9E-08	6.8E-08	1.9E-10
A	MAXIMUM CHI/Q	S	1.50	1.1E-07	1.1E-07	1.1E-07	2.3E-09
A	MAXIMUM CHI/Q	SSW	1.50	7.8E-08	7.8E-08	7.7E-08	1.4E-09
A	MAXIMUM CHI/Q	SW	1.50	1.6E-07	1.6E-07	1.5E-07	1.1E-09
A	MAXIMUM CHI/Q	WSW	1.50	2.6E-07	2.6E-07	2.6E-07	1.3E-09
A	MAXIMUM CHI/Q	W	1.00	2.8E-07	2.8E-07	2.8E-07	2.9E-09
A	MAXIMUM CHI/Q	WNW	1.50	3.5E-07	3.5E-07	3.4E-07	2.5E-09
A	MAXIMUM CHI/Q	NW	1.50	4.4E-07	4.4E-07	4.4E-07	2.8E-09
A	MAXIMUM CHI/Q	NNW	2.00	8.7E-08	8.7E-08	8.6E-08	3.4E-10
A	MAXIMUM CHI/Q	N	2.00	2.4E-08	2.4E-08	2.4E-08	1.4E-10
A	MAXIMUM CHI/Q	NNE	2.00	1.6E-08	1.6E-08	1.6E-08	1.5E-10
A	MAXIMUM CHI/Q	NE	1.50	4.6E-08	4.6E-08	4.5E-08	7.7E-10
A	MAXIMUM CHI/Q	ENE	1.50	3.1E-08	3.1E-08	3.1E-08	5.1E-10
A	MAXIMUM CHI/Q	E	1.50	1.6E-08	1.6E-08	1.6E-08	2.8E-10
A	MAXIMUM CHI/Q	ESE	1.50	3.7E-08	3.7E-08	3.7E-08	7.2E-10
A	MAXIMUM CHI/Q	SE	1.50	8.9E-08	8.9E-08	8.8E-08	2.2E-09
A	MAXIMUM CHI/Q	SSE	1.50	9.6E-08	9.6E-08	9.5E-08	2.2E-09

Atmospheric Diffusion Estimates

Elevated Releases

April-June 2019

ERP ELEVATED STACK RELEASES - APR-JUN 2019
NO DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	3.016E-15	2.629E-09	4.243E-08	8.206E-08	1.020E-07	8.983E-08	7.413E-08	6.087E-08	5.054E-08	5.426E-08	5.461E-08
SSW	1.317E-15	1.355E-09	2.296E-08	4.525E-08	5.699E-08	5.040E-08	4.167E-08	4.245E-08	4.003E-08	3.349E-08	2.844E-08
SW	8.603E-16	8.985E-10	3.396E-08	8.561E-08	1.239E-07	8.033E-08	5.609E-08	4.152E-08	3.214E-08	2.575E-08	2.120E-08
WSW	9.211E-16	9.171E-10	4.382E-08	1.195E-07	1.879E-07	1.180E-07	8.142E-08	6.001E-08	4.641E-08	3.722E-08	3.069E-08
W	6.327E-13	5.779E-08	2.633E-07	3.091E-07	2.553E-07	1.558E-07	1.057E-07	7.703E-08	5.911E-08	4.712E-08	3.868E-08
WNW	3.230E-14	1.213E-08	1.953E-07	3.651E-07	4.099E-07	2.421E-07	1.601E-07	1.176E-07	9.048E-08	7.068E-08	5.704E-08
NW	2.601E-15	2.728E-09	1.554E-07	4.312E-07	6.186E-07	3.540E-07	2.300E-07	1.646E-07	1.244E-07	9.698E-08	7.812E-08
NNW	1.063E-15	1.134E-09	3.563E-08	9.420E-08	1.729E-07	1.760E-07	1.596E-07	1.371E-07	1.174E-07	9.207E-08	7.463E-08
N	2.283E-15	1.672E-09	2.571E-08	5.059E-08	6.909E-08	6.844E-08	6.162E-08	5.294E-08	4.558E-08	3.955E-08	3.464E-08
NNE	2.309E-15	1.674E-09	2.591E-08	5.065E-08	6.679E-08	6.225E-08	5.378E-08	4.584E-08	3.925E-08	3.393E-08	2.968E-08
NE	1.276E-15	9.930E-10	1.520E-08	2.886E-08	3.632E-08	3.300E-08	2.809E-08	2.373E-08	2.020E-08	1.740E-08	1.517E-08
ENE	5.670E-16	3.827E-10	5.671E-09	1.076E-08	1.404E-08	1.332E-08	1.176E-08	1.023E-08	8.918E-09	7.829E-09	6.939E-09
E	7.764E-16	6.187E-10	9.669E-09	1.854E-08	2.357E-08	2.152E-08	1.837E-08	1.553E-08	1.322E-08	1.138E-08	9.915E-09
ESE	8.391E-16	6.480E-10	9.741E-09	1.818E-08	2.203E-08	1.937E-08	1.611E-08	1.338E-08	1.127E-08	9.634E-09	8.363E-09
SE	1.094E-15	8.968E-10	1.408E-08	2.685E-08	3.333E-08	2.970E-08	2.486E-08	2.070E-08	1.740E-08	1.482E-08	1.279E-08
SSE	2.330E-15	1.801E-09	2.780E-08	5.308E-08	6.622E-08	5.907E-08	4.943E-08	4.116E-08	3.462E-08	2.953E-08	2.554E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	4.733E-08	2.802E-08	1.781E-08	9.893E-09	6.672E-09	4.906E-09	3.769E-09	3.018E-09	2.503E-09	2.122E-09	1.825E-09
SSW	2.485E-08	1.457E-08	9.141E-09	4.991E-09	3.302E-09	2.380E-09	1.815E-09	1.445E-09	1.186E-09	9.972E-10	8.540E-10
SW	1.870E-08	1.198E-08	7.691E-09	4.337E-09	2.983E-09	2.225E-09	1.749E-09	1.407E-09	1.166E-09	9.890E-10	8.536E-10
WSW	2.686E-08	1.673E-08	1.157E-08	6.949E-09	4.641E-09	3.401E-09	2.642E-09	2.135E-09	1.776E-09	1.511E-09	1.309E-09
W	3.250E-08	1.745E-08	1.226E-08	7.831E-09	5.739E-09	4.237E-09	3.292E-09	2.663E-09	2.218E-09	1.888E-09	1.636E-09
WNW	4.749E-08	2.464E-08	1.589E-08	8.975E-09	5.930E-09	4.303E-09	3.317E-09	2.659E-09	2.194E-09	1.851E-09	1.591E-09
NW	6.493E-08	3.349E-08	2.157E-08	1.212E-08	7.964E-09	5.758E-09	4.440E-09	3.557E-09	2.934E-09	2.477E-09	2.129E-09
NNW	6.295E-08	3.422E-08	2.204E-08	1.251E-08	8.390E-09	6.166E-09	4.826E-09	3.924E-09	3.301E-09	2.821E-09	2.443E-09
N	3.071E-08	1.930E-08	1.528E-08	1.097E-08	8.587E-09	6.901E-09	5.401E-09	4.380E-09	3.648E-09	3.105E-09	2.690E-09
NNE	3.205E-08	3.749E-08	2.412E-08	1.369E-08	9.190E-09	6.762E-09	5.270E-09	4.272E-09	3.564E-09	3.039E-09	2.637E-09
NE	1.628E-08	1.761E-08	1.128E-08	6.362E-09	4.253E-09	3.118E-09	2.436E-09	1.976E-09	1.650E-09	1.403E-09	1.215E-09
ENE	7.569E-09	1.023E-08	6.770E-09	3.977E-09	2.730E-09	2.041E-09	1.683E-09	1.418E-09	1.189E-09	1.018E-09	8.872E-10
E	1.026E-08	9.365E-09	5.985E-09	3.353E-09	2.227E-09	1.623E-09	1.255E-09	1.010E-09	8.421E-10	7.165E-10	6.178E-10
ESE	8.610E-09	1.136E-08	7.617E-09	4.544E-09	3.148E-09	2.368E-09	1.877E-09	1.543E-09	1.302E-09	1.121E-09	9.813E-10
SE	1.118E-08	6.717E-09	5.037E-09	3.428E-09	2.441E-09	1.878E-09	1.518E-09	1.269E-09	1.057E-09	9.003E-10	7.799E-10
SSE	2.688E-08	3.165E-08	2.035E-08	1.155E-08	7.751E-09	5.703E-09	4.444E-09	3.603E-09	3.006E-09	2.563E-09	2.224E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
					SEGMENT BOUNDARIES IN MILES FROM THE SITE					
S	5.120E-08	9.215E-08	7.301E-08	5.491E-08	5.181E-08	2.777E-08	1.022E-08	4.922E-09	3.037E-09	2.125E-09
SSW	2.806E-08	5.145E-08	4.431E-08	3.823E-08	2.861E-08	1.444E-08	5.163E-09	2.400E-09	1.452E-09	1.000E-09
SW	4.957E-08	9.602E-08	5.672E-08	3.239E-08	2.162E-08	1.157E-08	4.481E-09	2.237E-09	1.413E-09	9.914E-10
WSW	6.792E-08	1.416E-07	8.262E-08	4.679E-08	3.120E-08	1.669E-08	6.950E-09	3.428E-09	2.143E-09	1.515E-09
W	2.380E-07	2.230E-07	1.076E-07	5.966E-08	3.889E-08	1.849E-08	7.885E-09	4.260E-09	2.673E-09	1.893E-09
WNW	2.301E-07	3.254E-07	1.650E-07	9.068E-08	5.755E-08	2.583E-08	9.159E-09	4.342E-09	2.670E-09	1.856E-09
NW	2.440E-07	4.593E-07	2.369E-07	1.255E-07	7.883E-08	3.518E-08	1.237E-08	5.819E-09	3.572E-09	2.483E-09
NNW	5.400E-08	1.568E-07	1.550E-07	1.134E-07	7.547E-08	3.519E-08	1.279E-08	6.223E-09	3.944E-09	2.823E-09
N	3.142E-08	6.469E-08	5.997E-08	4.539E-08	3.464E-08	2.005E-08	1.087E-08	6.750E-09	4.393E-09	3.112E-09
NNE	3.152E-08	6.119E-08	5.286E-08	3.910E-08	3.182E-08	3.034E-08	1.401E-08	6.813E-09	4.288E-09	3.046E-09
NE	1.811E-08	3.319E-08	2.766E-08	2.014E-08	1.624E-08	1.450E-08	6.518E-09	3.148E-09	1.983E-09	1.407E-09
ENE	6.756E-09	1.299E-08	1.157E-08	8.879E-09	7.436E-09	8.101E-09	4.044E-09	2.081E-09	1.406E-09	1.020E-09
E	1.160E-08	2.154E-08	1.807E-08	1.318E-08	1.048E-08	8.061E-09	3.437E-09	1.637E-09	1.016E-09	7.172E-10
ESE	1.147E-08	1.999E-08	1.589E-08	1.125E-08	8.831E-09	9.086E-09	4.606E-09	2.380E-09	1.547E-09	1.123E-09
SE	1.683E-08	3.028E-08	2.449E-08	1.736E-08	1.280E-08	6.962E-09	3.347E-09	1.884E-09	1.259E-09	9.022E-10
SSE	3.326E-08	6.012E-08	4.869E-08	3.455E-08	2.722E-08	2.557E-08	1.182E-08	5.746E-09	3.616E-09	2.569E-09

ERP ELEVATED STACK RELEASES - APR-JUN 2019
2.260 DAY DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	3.016E-15	2.628E-09	4.239E-08	8.194E-08	1.017E-07	8.953E-08	7.381E-08	6.055E-08	5.023E-08	5.387E-08	5.415E-08
SSW	1.316E-15	1.354E-09	2.293E-08	4.517E-08	5.683E-08	5.021E-08	4.146E-08	4.219E-08	3.974E-08	3.320E-08	2.816E-08
SW	8.601E-16	8.979E-10	3.392E-08	8.547E-08	1.235E-07	8.002E-08	5.581E-08	4.127E-08	3.191E-08	2.554E-08	2.101E-08
WSW	9.208E-16	9.164E-10	4.376E-08	1.193E-07	1.872E-07	1.174E-07	8.087E-08	5.952E-08	4.596E-08	3.680E-08	3.030E-08
W	6.325E-13	5.775E-08	2.630E-07	3.086E-07	2.546E-07	1.552E-07	1.051E-07	7.653E-08	5.866E-08	4.670E-08	3.829E-08
WNW	3.229E-14	1.212E-08	1.951E-07	3.644E-07	4.086E-07	2.411E-07	1.592E-07	1.168E-07	8.976E-08	7.004E-08	5.646E-08
NW	2.600E-15	2.726E-09	1.552E-07	4.305E-07	6.170E-07	3.528E-07	2.290E-07	1.638E-07	1.237E-07	9.630E-08	7.750E-08
NNW	1.063E-15	1.133E-09	3.559E-08	9.404E-08	1.724E-07	1.754E-07	1.589E-07	1.363E-07	1.165E-07	9.131E-08	7.393E-08
N	2.283E-15	1.671E-09	2.569E-08	5.053E-08	6.896E-08	6.826E-08	6.142E-08	5.273E-08	4.537E-08	3.934E-08	3.444E-08
NNE	2.308E-15	1.673E-09	2.589E-08	5.058E-08	6.663E-08	6.205E-08	5.355E-08	4.560E-08	3.901E-08	3.370E-08	2.944E-08
NE	1.275E-15	9.925E-10	1.519E-08	2.883E-08	3.626E-08	3.291E-08	2.800E-08	2.363E-08	2.010E-08	1.729E-08	1.506E-08
ENE	5.669E-16	3.825E-10	5.667E-09	1.074E-08	1.401E-08	1.328E-08	1.171E-08	1.017E-08	8.851E-09	7.760E-09	6.867E-09
E	7.762E-16	6.184E-10	9.661E-09	1.852E-08	2.352E-08	2.145E-08	1.829E-08	1.546E-08	1.315E-08	1.130E-08	9.835E-09
ESE	8.389E-16	6.477E-10	9.734E-09	1.816E-08	2.199E-08	1.933E-08	1.606E-08	1.334E-08	1.122E-08	9.591E-09	8.320E-09
SE	1.094E-15	8.963E-10	1.406E-08	2.682E-08	3.326E-08	2.962E-08	2.477E-08	2.060E-08	1.730E-08	1.472E-08	1.270E-08
SSE	2.329E-15	1.800E-09	2.777E-08	5.302E-08	6.608E-08	5.890E-08	4.925E-08	4.097E-08	3.444E-08	2.934E-08	2.536E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	4.688E-08	2.760E-08	1.745E-08	9.595E-09	6.403E-09	4.658E-09	3.542E-09	2.807E-09	2.304E-09	1.932E-09	1.644E-09
SSW	2.459E-08	1.433E-08	8.942E-09	4.829E-09	3.161E-09	2.253E-09	1.700E-09	1.339E-09	1.088E-09	9.048E-10	7.668E-10
SW	1.851E-08	1.179E-08	7.530E-09	4.200E-09	2.858E-09	2.109E-09	1.640E-09	1.306E-09	1.071E-09	8.984E-10	7.673E-10
WSW	2.647E-08	1.635E-08	1.122E-08	6.628E-09	4.357E-09	3.142E-09	2.402E-09	1.911E-09	1.565E-09	1.311E-09	1.117E-09
W	3.213E-08	1.715E-08	1.196E-08	7.523E-09	5.425E-09	3.945E-09	3.021E-09	2.408E-09	1.976E-09	1.658E-09	1.416E-09
WNW	4.695E-08	2.422E-08	1.553E-08	8.672E-09	5.665E-09	4.065E-09	3.098E-09	2.456E-09	2.004E-09	1.673E-09	1.422E-09
NW	6.435E-08	3.303E-08	2.118E-08	1.179E-08	7.668E-09	5.491E-09	4.193E-09	3.328E-09	2.719E-09	2.273E-09	1.935E-09
NNW	6.229E-08	3.366E-08	2.155E-08	1.209E-08	8.017E-09	5.824E-09	4.504E-09	3.619E-09	3.007E-09	2.539E-09	2.173E-09
N	3.050E-08	1.910E-08	1.508E-08	1.074E-08	8.323E-09	6.614E-09	5.130E-09	4.123E-09	3.404E-09	2.872E-09	2.466E-09
NNE	3.178E-08	3.698E-08	2.368E-08	1.332E-08	8.865E-09	6.466E-09	4.994E-09	4.013E-09	3.319E-09	2.806E-09	2.413E-09
NE	1.615E-08	1.739E-08	1.109E-08	6.197E-09	4.107E-09	2.985E-09	2.311E-09	1.859E-09	1.538E-09	1.297E-09	1.113E-09
ENE	7.473E-09	9.965E-09	6.532E-09	3.765E-09	2.535E-09	1.859E-09	1.501E-09	1.239E-09	1.019E-09	8.558E-10	7.311E-10
E	1.016E-08	9.220E-09	5.862E-09	3.250E-09	2.136E-09	1.540E-09	1.178E-09	9.382E-10	7.745E-10	6.523E-10	5.567E-10
ESE	8.558E-09	1.118E-08	7.451E-09	4.390E-09	3.002E-09	2.229E-09	1.744E-09	1.415E-09	1.179E-09	1.002E-09	8.649E-10
SE	1.108E-08	6.629E-09	4.946E-09	3.333E-09	2.351E-09	1.792E-09	1.436E-09	1.190E-09	9.827E-10	8.294E-10	7.122E-10
SSE	2.667E-08	3.118E-08	1.995E-08	1.120E-08	7.442E-09	5.419E-09	4.179E-09	3.353E-09	2.768E-09	2.336E-09	2.006E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	5.113E-08	9.191E-08	7.270E-08	5.457E-08	5.138E-08	2.737E-08	9.922E-09	4.677E-09	2.825E-09	1.936E-09
SSW	2.802E-08	5.130E-08	4.409E-08	3.795E-08	2.833E-08	1.421E-08	5.002E-09	2.274E-09	1.347E-09	9.079E-10
SW	4.950E-08	9.574E-08	5.645E-08	3.216E-08	2.143E-08	1.139E-08	4.344E-09	2.121E-09	1.312E-09	9.009E-10
WSW	6.780E-08	1.411E-07	8.207E-08	4.634E-08	3.080E-08	1.632E-08	6.638E-09	3.170E-09	1.919E-09	1.314E-09
W	2.376E-07	2.224E-07	1.070E-07	5.921E-08	3.850E-08	1.817E-08	7.576E-09	3.970E-09	2.419E-09	1.663E-09
WNW	2.297E-07	3.243E-07	1.641E-07	8.997E-08	5.696E-08	2.541E-08	8.860E-09	4.105E-09	2.467E-09	1.678E-09
NW	2.437E-07	4.581E-07	2.359E-07	1.247E-07	7.820E-08	3.472E-08	1.204E-08	5.553E-09	3.343E-09	2.280E-09
NNW	5.391E-08	1.563E-07	1.542E-07	1.126E-07	7.477E-08	3.464E-08	1.238E-08	5.881E-09	3.639E-09	2.542E-09
N	3.139E-08	6.455E-08	5.977E-08	4.517E-08	3.443E-08	1.985E-08	1.063E-08	6.476E-09	4.137E-09	2.879E-09
NNE	3.148E-08	6.103E-08	5.264E-08	3.887E-08	3.157E-08	2.991E-08	1.364E-08	6.517E-09	4.029E-09	2.812E-09
NE	1.809E-08	3.312E-08	2.756E-08	2.004E-08	1.612E-08	1.431E-08	6.355E-09	3.014E-09	1.866E-09	1.301E-09
ENE	6.749E-09	1.296E-08	1.151E-08	8.812E-09	7.356E-09	7.885E-09	3.833E-09	1.896E-09	1.230E-09	8.579E-10
E	1.159E-08	2.149E-08	1.800E-08	1.310E-08	1.039E-08	7.937E-09	3.335E-09	1.554E-09	9.444E-10	6.531E-10
ESE	1.146E-08	1.996E-08	1.585E-08	1.121E-08	8.785E-09	8.941E-09	4.453E-09	2.241E-09	1.419E-09	1.003E-09
SE	1.681E-08	3.021E-08	2.439E-08	1.726E-08	1.270E-08	6.871E-09	3.255E-09	1.799E-09	1.181E-09	8.314E-10
SSE	3.322E-08	5.999E-08	4.851E-08	3.436E-08	2.703E-08	2.519E-08	1.147E-08	5.462E-09	3.366E-09	2.342E-09

ERP ELEVATED STACK RELEASES - APR-JUN 2019
8.000 DAY DECAY, DEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	3.016E-15	2.629E-09	4.242E-08	8.203E-08	1.010E-07	8.807E-08	7.199E-08	5.859E-08	4.824E-08	5.150E-08	5.160E-08
SSW	1.317E-15	1.354E-09	2.295E-08	4.523E-08	5.642E-08	4.940E-08	4.044E-08	4.085E-08	3.822E-08	3.171E-08	2.672E-08
SW	8.603E-16	8.983E-10	3.395E-08	8.557E-08	1.222E-07	7.829E-08	5.413E-08	3.973E-08	3.052E-08	2.429E-08	1.988E-08
WSW	9.210E-16	9.169E-10	4.380E-08	1.193E-07	1.852E-07	1.151E-07	7.874E-08	5.764E-08	4.431E-08	3.534E-08	2.901E-08
W	6.326E-13	5.778E-08	2.616E-07	3.046E-07	2.486E-07	1.501E-07	1.010E-07	7.308E-08	5.574E-08	4.420E-08	3.610E-08
WNW	3.230E-14	1.212E-08	1.950E-07	3.620E-07	4.015E-07	2.343E-07	1.534E-07	1.117E-07	8.535E-08	6.617E-08	5.300E-08
NW	2.601E-15	2.728E-09	1.553E-07	4.292E-07	6.080E-07	3.436E-07	2.210E-07	1.569E-07	1.178E-07	9.110E-08	7.284E-08
NNW	1.063E-15	1.134E-09	3.562E-08	9.416E-08	1.715E-07	1.735E-07	1.568E-07	1.343E-07	1.147E-07	8.953E-08	7.217E-08
N	2.283E-15	1.672E-09	2.570E-08	5.057E-08	6.853E-08	6.744E-08	6.039E-08	5.164E-08	4.428E-08	3.828E-08	3.342E-08
NNE	2.309E-15	1.674E-09	2.590E-08	5.063E-08	6.619E-08	6.120E-08	5.249E-08	4.446E-08	3.785E-08	3.257E-08	2.835E-08
NE	1.276E-15	9.928E-10	1.520E-08	2.885E-08	3.600E-08	3.243E-08	2.741E-08	2.301E-08	1.948E-08	1.669E-08	1.448E-08
ENE	5.670E-16	3.826E-10	5.670E-09	1.075E-08	1.392E-08	1.311E-08	1.151E-08	9.964E-09	8.648E-09	7.565E-09	6.683E-09
E	7.763E-16	6.186E-10	9.667E-09	1.853E-08	2.335E-08	2.114E-08	1.792E-08	1.506E-08	1.275E-08	1.091E-08	9.462E-09
ESE	8.391E-16	6.480E-10	9.739E-09	1.817E-08	2.182E-08	1.902E-08	1.568E-08	1.294E-08	1.082E-08	9.198E-09	7.943E-09
SE	1.094E-15	8.967E-10	1.407E-08	2.684E-08	3.302E-08	2.916E-08	2.421E-08	2.000E-08	1.670E-08	1.414E-08	1.213E-08
SSE	2.329E-15	1.801E-09	2.779E-08	5.307E-08	6.559E-08	5.798E-08	4.811E-08	3.975E-08	3.320E-08	2.814E-08	2.420E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	4.446E-08	2.562E-08	1.578E-08	8.278E-09	5.273E-09	3.689E-09	2.715E-09	2.091E-09	1.676E-09	1.378E-09	1.152E-09
SSW	2.320E-08	1.319E-08	8.020E-09	4.143E-09	2.603E-09	1.800E-09	1.323E-09	1.019E-09	8.110E-10	6.623E-10	5.519E-10
SW	1.746E-08	1.097E-08	6.826E-09	3.621E-09	2.337E-09	1.649E-09	1.246E-09	9.683E-10	7.773E-10	6.397E-10	5.369E-10
WSW	2.531E-08	1.544E-08	1.035E-08	5.883E-09	3.748E-09	2.636E-09	1.974E-09	1.543E-09	1.245E-09	1.029E-09	8.668E-10
W	3.020E-08	1.591E-08	1.104E-08	6.692E-09	4.629E-09	3.282E-09	2.460E-09	1.925E-09	1.555E-09	1.287E-09	1.086E-09
WNW	4.382E-08	2.194E-08	1.370E-08	7.277E-09	4.512E-09	3.113E-09	2.304E-09	1.784E-09	1.424E-09	1.166E-09	9.731E-10
NW	6.011E-08	2.994E-08	1.867E-08	9.871E-09	6.123E-09	4.217E-09	3.124E-09	2.418E-09	1.932E-09	1.583E-09	1.324E-09
NNW	6.052E-08	3.183E-08	1.978E-08	1.044E-08	6.456E-09	4.428E-09	3.265E-09	2.529E-09	2.048E-09	1.694E-09	1.423E-09
N	2.953E-08	1.835E-08	1.446E-08	1.032E-08	7.878E-09	6.036E-09	4.581E-09	3.613E-09	2.932E-09	2.437E-09	2.065E-09
NNE	3.063E-08	3.570E-08	2.218E-08	1.184E-08	7.513E-09	5.268E-09	3.935E-09	3.071E-09	2.474E-09	2.042E-09	1.719E-09
NE	1.554E-08	1.674E-08	1.035E-08	5.483E-09	3.456E-09	2.411E-09	1.808E-09	1.418E-09	1.149E-09	9.503E-10	8.014E-10
ENE	7.295E-09	9.862E-09	6.298E-09	3.437E-09	2.167E-09	1.508E-09	1.166E-09	9.293E-10	7.426E-10	6.082E-10	5.078E-10
E	9.779E-09	8.849E-09	5.470E-09	2.871E-09	1.776E-09	1.218E-09	8.932E-10	6.853E-10	5.471E-10	4.480E-10	3.735E-10
ESE	8.173E-09	1.088E-08	7.057E-09	3.934E-09	2.521E-09	1.775E-09	1.327E-09	1.034E-09	8.314E-10	6.843E-10	5.738E-10
SE	1.055E-08	6.211E-09	4.602E-09	3.089E-09	2.173E-09	1.657E-09	1.330E-09	1.103E-09	8.957E-10	7.451E-10	6.314E-10
SSE	2.544E-08	2.993E-08	1.859E-08	9.914E-09	6.280E-09	4.397E-09	3.280E-09	2.556E-09	2.057E-09	1.696E-09	1.426E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
	SEGMENT BOUNDARIES IN MILES FROM THE SITE									
S	5.118E-08	9.103E-08	7.092E-08	5.244E-08	4.893E-08	2.544E-08	8.610E-09	3.722E-09	2.111E-09	1.383E-09
SSW	2.805E-08	5.081E-08	4.299E-08	3.649E-08	2.690E-08	1.312E-08	4.320E-09	1.823E-09	1.027E-09	6.655E-10
SW	4.955E-08	9.454E-08	5.481E-08	3.078E-08	2.029E-08	1.057E-08	3.763E-09	1.671E-09	9.749E-10	6.424E-10
WSW	6.781E-08	1.394E-07	8.000E-08	4.470E-08	2.952E-08	1.537E-08	5.927E-09	2.668E-09	1.553E-09	1.033E-09
W	2.354E-07	2.173E-07	1.029E-07	5.630E-08	3.631E-08	1.692E-08	6.741E-09	3.312E-09	1.937E-09	1.292E-09
WNW	2.286E-07	3.184E-07	1.583E-07	8.558E-08	5.350E-08	2.314E-08	7.476E-09	3.162E-09	1.796E-09	1.171E-09
NW	2.431E-07	4.508E-07	2.281E-07	1.188E-07	7.354E-08	3.164E-08	1.016E-08	4.288E-09	2.435E-09	1.591E-09
NNW	5.397E-08	1.552E-07	1.523E-07	1.107E-07	7.300E-08	3.285E-08	1.075E-08	4.504E-09	2.556E-09	1.698E-09
N	3.141E-08	6.405E-08	5.877E-08	4.410E-08	3.342E-08	1.911E-08	1.016E-08	5.945E-09	3.630E-09	2.446E-09
NNE	3.151E-08	6.051E-08	5.160E-08	3.773E-08	3.044E-08	2.856E-08	1.222E-08	5.334E-09	3.090E-09	2.050E-09
NE	1.811E-08	3.282E-08	2.699E-08	1.942E-08	1.553E-08	1.363E-08	5.663E-09	2.448E-09	1.426E-09	9.539E-10
ENE	6.754E-09	1.286E-08	1.132E-08	8.612E-09	7.171E-09	7.708E-09	3.508E-09	1.547E-09	9.257E-10	6.108E-10
E	1.160E-08	2.130E-08	1.763E-08	1.271E-08	1.001E-08	7.554E-09	2.962E-09	1.237E-09	6.921E-10	4.498E-10
ESE	1.147E-08	1.977E-08	1.548E-08	1.081E-08	8.400E-09	8.578E-09	4.000E-09	1.795E-09	1.041E-09	6.870E-10
SE	1.682E-08	2.993E-08	2.385E-08	1.667E-08	1.214E-08	6.460E-09	3.018E-09	1.664E-09	1.089E-09	7.476E-10
SSE	3.325E-08	5.943E-08	4.740E-08	3.314E-08	2.583E-08	2.389E-08	1.023E-08	4.452E-09	2.573E-09	1.703E-09

ERP ELEVATED STACK RELEASES - APR-JUN 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) AT FIXED POINTS BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	.25	.50	.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
					DISTANCES IN MILES						
S	2.371E-10	1.422E-09	3.028E-09	3.137E-09	1.959E-09	1.314E-09	9.279E-10	6.817E-10	5.163E-10	4.213E-10	3.875E-10
SSW	1.179E-10	7.071E-10	1.506E-09	1.560E-09	9.742E-10	6.532E-10	4.614E-10	3.389E-10	3.229E-10	2.442E-10	1.911E-10
SW	7.549E-11	4.529E-10	9.643E-10	9.988E-10	1.230E-09	6.704E-10	4.153E-10	2.819E-10	2.037E-10	1.540E-10	1.205E-10
WSW	8.078E-11	4.847E-10	1.032E-09	2.415E-09	1.323E-09	7.197E-10	4.452E-10	3.019E-10	2.179E-10	1.647E-10	1.288E-10
W	1.218E-10	6.601E-09	6.397E-09	4.191E-09	2.269E-09	1.184E-09	7.152E-10	4.765E-10	3.399E-10	2.549E-10	1.989E-10
WNW	1.549E-10	9.296E-10	6.359E-09	5.216E-09	3.239E-09	1.643E-09	9.758E-10	6.433E-10	4.714E-10	3.512E-10	2.747E-10
NW	2.238E-10	1.343E-09	2.859E-09	7.755E-09	5.160E-09	2.559E-09	1.498E-09	9.766E-10	6.878E-10	5.137E-10	4.031E-10
NNW	9.668E-11	5.800E-10	1.235E-09	1.279E-09	1.562E-09	8.541E-10	5.369E-10	4.530E-10	3.366E-10	2.686E-10	2.275E-10
N	1.576E-10	9.455E-10	2.013E-09	2.085E-09	1.303E-09	8.734E-10	6.169E-10	4.532E-10	3.432E-10	2.664E-10	2.110E-10
NNE	1.602E-10	9.614E-10	2.047E-09	2.120E-09	1.324E-09	8.880E-10	6.273E-10	4.608E-10	3.490E-10	2.709E-10	2.145E-10
NE	9.005E-11	5.403E-10	1.150E-09	1.192E-09	7.443E-10	4.991E-10	3.525E-10	2.590E-10	1.961E-10	1.522E-10	1.206E-10
ENE	3.708E-11	2.225E-10	4.737E-10	4.907E-10	3.065E-10	2.055E-10	1.452E-10	1.066E-10	8.076E-11	6.268E-11	4.964E-11
E	5.695E-11	3.416E-10	7.275E-10	7.535E-10	4.707E-10	3.156E-10	2.229E-10	1.638E-10	1.240E-10	9.626E-11	7.623E-11
ESE	5.827E-11	3.496E-10	7.444E-10	7.710E-10	4.816E-10	3.229E-10	2.281E-10	1.676E-10	1.269E-10	9.850E-11	7.800E-11
SE	8.078E-11	4.847E-10	1.032E-09	1.069E-09	6.677E-10	4.477E-10	3.162E-10	2.323E-10	1.759E-10	1.366E-10	1.081E-10
SSE	1.655E-10	9.932E-10	2.115E-09	2.190E-09	1.368E-09	9.174E-10	6.480E-10	4.760E-10	3.605E-10	2.798E-10	2.216E-10

DIRECTION FROM SITE	5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
					DISTANCES IN MILES						
S	3.115E-10	1.630E-10	1.010E-10	5.316E-11	3.269E-11	2.893E-11	2.071E-11	1.554E-11	1.245E-11	9.932E-12	8.109E-12
SSW	1.546E-10	7.657E-11	4.641E-11	2.386E-11	1.916E-11	1.369E-11	9.811E-12	7.369E-12	5.803E-12	4.635E-12	3.783E-12
SW	9.716E-11	5.490E-11	3.498E-11	1.895E-11	1.174E-11	9.698E-12	7.194E-12	5.402E-12	4.200E-12	3.355E-12	2.739E-12
WSW	1.051E-10	6.006E-11	3.864E-11	2.597E-11	1.572E-11	1.054E-11	7.671E-12	5.760E-12	4.479E-12	3.578E-12	2.920E-12
W	1.608E-10	7.473E-11	5.733E-11	3.298E-11	2.457E-11	1.658E-11	1.188E-11	8.921E-12	6.936E-12	5.541E-12	4.522E-12
WNW	2.267E-10	1.145E-10	7.405E-11	4.075E-11	2.863E-11	1.936E-11	1.473E-11	1.106E-11	8.722E-12	6.967E-12	5.687E-12
NW	3.320E-10	1.697E-10	1.107E-10	7.285E-11	4.435E-11	2.970E-11	2.187E-11	1.642E-11	1.279E-11	1.022E-11	8.341E-12
NNW	2.023E-10	1.335E-10	9.919E-11	6.138E-11	3.926E-11	2.597E-11	1.727E-11	1.291E-11	9.926E-12	7.931E-12	6.474E-12
N	1.699E-10	8.045E-11	4.902E-11	2.574E-11	6.806E-11	4.133E-11	2.962E-11	2.224E-11	1.729E-11	1.381E-11	1.128E-11
NNE	1.728E-10	2.401E-10	1.485E-10	7.694E-11	4.692E-11	3.140E-11	2.243E-11	1.678E-11	1.301E-11	1.037E-11	8.446E-12
NE	9.709E-11	1.223E-10	7.564E-11	3.918E-11	2.389E-11	1.599E-11	1.138E-11	8.481E-12	6.594E-12	5.267E-12	4.299E-12
ENE	3.998E-11	3.739E-11	2.599E-11	1.526E-11	9.641E-12	6.400E-12	4.514E-12	3.730E-12	2.888E-12	2.298E-12	1.870E-12
E	6.140E-11	5.155E-11	3.488E-11	2.000E-11	1.257E-11	8.355E-12	5.911E-12	4.374E-12	3.365E-12	3.157E-12	2.573E-12
ESE	6.282E-11	5.652E-11	3.893E-11	2.267E-11	1.429E-11	9.494E-12	6.703E-12	4.948E-12	3.798E-12	3.004E-12	2.433E-12
SE	8.710E-11	4.124E-11	2.513E-11	1.320E-11	8.018E-12	5.485E-12	4.066E-12	6.924E-12	5.323E-12	4.217E-12	3.424E-12
SSE	1.785E-10	2.124E-10	1.305E-10	6.713E-11	4.085E-11	2.735E-11	1.956E-11	1.465E-11	1.137E-11	9.067E-12	7.391E-12

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) BY DOWNWIND SECTORS **********

DIRECTION FROM SITE .5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
				SEGMENT BOUNDARIES IN MILES					
S 2.720E-09	1.934E-09	9.323E-10	5.274E-10	3.694E-10	1.685E-10	5.469E-11	2.664E-11	1.584E-11	1.000E-11
SSW 1.352E-09	9.616E-10	4.635E-10	2.975E-10	1.933E-10	8.050E-11	2.678E-11	1.360E-11	7.470E-12	4.666E-12
SW 8.660E-10	9.299E-10	4.300E-10	2.071E-10	1.218E-10	5.543E-11	1.930E-11	9.240E-12	5.456E-12	3.377E-12
WSW 1.525E-09	1.298E-09	4.611E-10	2.216E-10	1.307E-10	6.055E-11	2.423E-11	1.077E-11	5.818E-12	3.601E-12
W 5.462E-09	2.214E-09	7.448E-10	3.465E-10	2.014E-10	8.613E-11	3.465E-11	1.683E-11	9.010E-12	5.577E-12
WNW 4.645E-09	2.969E-09	1.021E-09	4.747E-10	2.796E-10	1.214E-10	4.276E-11	1.998E-11	1.122E-11	7.013E-12
NW 4.698E-09	4.580E-09	1.572E-09	7.040E-10	4.095E-10	1.796E-10	6.860E-11	3.047E-11	1.660E-11	1.029E-11
NNW 1.109E-09	1.185E-09	5.879E-10	3.440E-10	2.304E-10	1.336E-10	5.995E-11	2.603E-11	1.302E-11	7.983E-12
N 1.808E-09	1.286E-09	6.198E-10	3.454E-10	2.122E-10	8.636E-11	4.973E-11	4.377E-11	2.246E-11	1.391E-11
NNE 1.838E-09	1.307E-09	6.302E-10	3.512E-10	2.157E-10	1.844E-10	7.951E-11	3.195E-11	1.696E-11	1.044E-11
NE 1.033E-09	7.347E-10	3.542E-10	1.974E-10	1.212E-10	9.597E-11	4.048E-11	1.625E-11	8.590E-12	5.302E-12
ENE 4.254E-10	3.025E-10	1.458E-10	8.126E-11	4.993E-11	3.290E-11	1.515E-11	6.510E-12	3.633E-12	2.314E-12
E 6.533E-10	4.646E-10	2.240E-10	1.248E-10	7.667E-11	4.633E-11	2.000E-11	8.500E-12	4.429E-12	3.002E-12
ESE 6.685E-10	4.754E-10	2.292E-10	1.277E-10	7.845E-11	5.010E-11	2.256E-11	9.657E-12	5.011E-12	3.028E-12
SE 9.268E-10	6.591E-10	3.177E-10	1.770E-10	1.088E-10	4.427E-11	1.355E-11	5.593E-12	5.497E-12	4.251E-12
SSE 1.899E-09	1.351E-09	6.510E-10	3.628E-10	2.229E-10	1.685E-10	6.954E-11	2.783E-11	1.480E-11	9.129E-12

ERP ELEVATED STACK RELEASES - APR-JUN 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION FROM SITE	DIST. (MI)	X/Q (SEC/M3) NO DECAY UNDEPLETED	X/Q (SEC/M3) 2.26 DAY DECAY UNDEPLETED	X/Q (SEC/M3) 8.0 DAY DECAY DEPLETED	D/Q (PER SQ.METER)
A	Site Boundary	S	.80	5.2E-08	5.2E-08	5.2E-08	3.2E-09
A	Site Boundary	SSW	.82	3.1E-08	3.1E-08	3.1E-08	1.6E-09
A	Site Boundary	SW	.97	8.1E-08	8.1E-08	8.1E-08	1.0E-09
A	Site Boundary	WSW	.93	9.8E-08	9.8E-08	9.8E-08	2.0E-09
A	Site Boundary	W	.91	3.1E-07	3.0E-07	3.0E-07	4.8E-09
A	Site Boundary	WNW	.94	3.3E-07	3.3E-07	3.3E-07	5.8E-09
A	Site Boundary	NW	.81	2.3E-07	2.3E-07	2.3E-07	3.0E-09
A	Site Boundary	NNW	.69	2.1E-08	2.1E-08	2.1E-08	1.1E-09
A	Site Boundary	N	.67	1.6E-08	1.6E-08	1.6E-08	1.7E-09
A	Site Boundary	NNE	.60	7.7E-09	7.7E-09	7.7E-09	1.4E-09
A	Site Boundary	NE	.62	6.0E-09	6.0E-09	6.0E-09	8.4E-10
A	Site Boundary	ENE	.59	1.5E-09	1.5E-09	1.5E-09	3.1E-10
A	Site Boundary	E	.53	9.9E-10	9.8E-10	9.9E-10	3.8E-10
A	Site Boundary	ESE	.54	1.3E-09	1.3E-09	1.3E-09	4.1E-10
A	Site Boundary	SE	.65	6.9E-09	6.9E-09	6.9E-09	8.1E-10
A	Site Boundary	SSE	.81	3.5E-08	3.5E-08	3.5E-08	2.2E-09
A	Nearest Res	SW	1.30	1.2E-07	1.2E-07	1.2E-07	1.6E-09
A	Nearest Res	WSW	1.80	1.4E-07	1.4E-07	1.4E-07	9.0E-10
A	Nearest Res	WNW	1.90	2.7E-07	2.7E-07	2.6E-07	1.9E-09
A	Nearest Res	NW	.90	3.3E-07	3.3E-07	3.3E-07	8.1E-09
A	Nearest Res	NNW	1.90	1.8E-07	1.8E-07	1.8E-07	9.5E-10
A	Nearest Cow	NNW	3.50	1.2E-07	1.2E-07	1.1E-07	3.4E-10
A	Nearest Garde	SW	2.20	6.9E-08	6.9E-08	6.7E-08	5.5E-10
A	Nearest Garde	WSW	1.80	1.4E-07	1.4E-07	1.4E-07	9.0E-10
A	Nearest Garde	WNW	1.90	2.7E-07	2.7E-07	2.6E-07	1.9E-09
A	Nearest Garde	NNW	3.00	1.4E-07	1.4E-07	1.3E-07	4.5E-10
A	MAXIMUM CHI/Q	S	1.50	1.0E-07	1.0E-07	1.0E-07	2.0E-09
A	MAXIMUM CHI/Q	SSW	1.50	5.7E-08	5.7E-08	5.6E-08	9.7E-10
A	MAXIMUM CHI/Q	SW	1.50	1.2E-07	1.2E-07	1.2E-07	1.2E-09
A	MAXIMUM CHI/Q	WSW	1.50	1.9E-07	1.9E-07	1.9E-07	1.3E-09
A	MAXIMUM CHI/Q	W	1.00	3.1E-07	3.1E-07	3.0E-07	4.2E-09
A	MAXIMUM CHI/Q	WNW	1.50	4.1E-07	4.1E-07	4.0E-07	3.2E-09
A	MAXIMUM CHI/Q	NW	1.50	6.2E-07	6.2E-07	6.1E-07	5.2E-09
A	MAXIMUM CHI/Q	NNW	2.00	1.8E-07	1.8E-07	1.7E-07	8.5E-10
A	MAXIMUM CHI/Q	N	1.50	6.9E-08	6.9E-08	6.9E-08	1.3E-09
A	MAXIMUM CHI/Q	NNE	1.50	6.7E-08	6.7E-08	6.6E-08	1.3E-09
A	MAXIMUM CHI/Q	NE	1.50	3.6E-08	3.6E-08	3.6E-08	7.4E-10
A	MAXIMUM CHI/Q	ENE	1.50	1.4E-08	1.4E-08	1.4E-08	3.1E-10
A	MAXIMUM CHI/Q	E	1.50	2.4E-08	2.4E-08	2.3E-08	4.7E-10
A	MAXIMUM CHI/Q	ESE	1.50	2.2E-08	2.2E-08	2.2E-08	4.8E-10
A	MAXIMUM CHI/Q	SE	1.50	3.3E-08	3.3E-08	3.3E-08	6.7E-10
A	MAXIMUM CHI/Q	SSE	1.50	6.6E-08	6.6E-08	6.6E-08	1.4E-09

Atmospheric Diffusion Estimates

Elevated Releases

January-June 2019

ERP ELEVATED STACK RELEASES - JAN-JUN 2019
NO DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	1.228E-11	3.473E-09	4.598E-08	8.680E-08	1.065E-07	9.372E-08	7.753E-08	6.387E-08	5.320E-08	5.811E-08	5.932E-08
SSW	1.610E-11	3.386E-09	2.974E-08	5.472E-08	6.753E-08	5.985E-08	4.975E-08	5.169E-08	4.983E-08	4.209E-08	3.606E-08
SW	7.929E-16	8.462E-10	3.254E-08	8.563E-08	1.396E-07	9.377E-08	6.705E-08	5.052E-08	3.965E-08	3.212E-08	2.670E-08
WSW	8.380E-16	9.498E-10	4.683E-08	1.326E-07	2.243E-07	1.419E-07	9.821E-08	7.250E-08	5.612E-08	4.501E-08	3.711E-08
W	5.207E-13	4.955E-08	2.386E-07	2.971E-07	2.629E-07	1.630E-07	1.114E-07	8.161E-08	6.281E-08	5.016E-08	4.123E-08
WNW	2.952E-14	1.075E-08	1.706E-07	3.215E-07	3.794E-07	2.283E-07	1.534E-07	1.154E-07	9.089E-08	7.176E-08	5.845E-08
NW	2.075E-15	2.098E-09	1.190E-07	3.425E-07	5.315E-07	3.063E-07	2.001E-07	1.439E-07	1.092E-07	8.534E-08	6.890E-08
NNW	7.322E-16	7.866E-10	2.514E-08	6.778E-08	1.278E-07	1.319E-07	1.206E-07	1.039E-07	8.881E-08	6.966E-08	5.644E-08
N	1.246E-15	9.642E-10	1.556E-08	3.179E-08	4.555E-08	4.628E-08	4.228E-08	3.665E-08	3.175E-08	2.768E-08	2.433E-08
NNE	1.302E-15	9.760E-10	1.550E-08	3.083E-08	4.168E-08	3.944E-08	3.441E-08	2.954E-08	2.542E-08	2.207E-08	1.936E-08
NE	1.164E-15	1.057E-09	1.696E-08	3.268E-08	4.100E-08	3.674E-08	3.086E-08	2.577E-08	2.172E-08	1.855E-08	1.607E-08
ENE	6.251E-16	5.513E-10	8.927E-09	1.743E-08	2.247E-08	2.059E-08	1.761E-08	1.493E-08	1.275E-08	1.101E-08	9.627E-09
E	5.961E-16	5.002E-10	7.965E-09	1.545E-08	1.995E-08	1.840E-08	1.583E-08	1.349E-08	1.156E-08	1.001E-08	8.771E-09
ESE	1.610E-11	2.536E-09	1.496E-08	2.518E-08	2.965E-08	2.598E-08	2.154E-08	1.784E-08	1.495E-08	1.272E-08	1.098E-08
SE	1.610E-11	3.517E-09	2.907E-08	5.125E-08	6.108E-08	5.348E-08	4.420E-08	3.644E-08	3.037E-08	2.569E-08	2.203E-08
SSE	4.448E-11	6.391E-09	4.046E-08	6.858E-08	8.089E-08	7.099E-08	5.895E-08	4.883E-08	4.092E-08	3.477E-08	2.998E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	5.162E-08	3.109E-08	1.985E-08	1.109E-08	7.537E-09	5.574E-09	4.294E-09	3.447E-09	2.867E-09	2.435E-09	2.098E-09
SSW	3.183E-08	1.908E-08	1.202E-08	6.607E-09	4.386E-09	3.172E-09	2.427E-09	1.937E-09	1.594E-09	1.343E-09	1.152E-09
SW	2.400E-08	1.630E-08	1.058E-08	6.051E-09	4.216E-09	3.174E-09	2.519E-09	2.035E-09	1.693E-09	1.440E-09	1.246E-09
WSW	3.240E-08	1.971E-08	1.342E-08	7.933E-09	5.284E-09	3.864E-09	2.996E-09	2.417E-09	2.008E-09	1.706E-09	1.475E-09
W	3.467E-08	1.863E-08	1.300E-08	8.162E-09	5.878E-09	4.327E-09	3.357E-09	2.712E-09	2.255E-09	1.918E-09	1.660E-09
WNW	4.926E-08	2.687E-08	1.797E-08	1.069E-08	7.252E-09	5.371E-09	4.218E-09	3.429E-09	2.858E-09	2.430E-09	2.103E-09
NW	5.740E-08	2.988E-08	1.937E-08	1.097E-08	7.242E-09	5.255E-09	4.066E-09	3.267E-09	2.701E-09	2.284E-09	1.967E-09
NNW	4.756E-08	2.573E-08	1.656E-08	9.385E-09	6.291E-09	4.621E-09	3.612E-09	2.933E-09	2.462E-09	2.102E-09	1.820E-09
N	2.164E-08	1.373E-08	1.100E-08	8.027E-09	6.313E-09	5.057E-09	3.955E-09	3.207E-09	2.672E-09	2.275E-09	1.971E-09
NNE	2.110E-08	2.568E-08	1.657E-08	9.438E-09	6.356E-09	4.687E-09	3.660E-09	2.971E-09	2.482E-09	2.119E-09	1.840E-09
NE	1.688E-08	1.920E-08	1.233E-08	6.980E-09	4.680E-09	3.440E-09	2.698E-09	2.196E-09	1.837E-09	1.565E-09	1.357E-09
ENE	1.019E-08	1.574E-08	1.051E-08	6.252E-09	4.329E-09	3.258E-09	2.738E-09	2.334E-09	1.964E-09	1.687E-09	1.474E-09
E	9.312E-09	1.132E-08	7.393E-09	4.272E-09	2.901E-09	2.152E-09	1.687E-09	1.374E-09	1.179E-09	1.025E-09	8.909E-10
ESE	1.104E-08	1.302E-08	8.690E-09	5.162E-09	3.569E-09	2.682E-09	2.124E-09	1.745E-09	1.472E-09	1.268E-09	1.109E-09
SE	1.914E-08	1.126E-08	8.234E-09	5.461E-09	3.885E-09	3.012E-09	2.467E-09	2.096E-09	1.751E-09	1.494E-09	1.297E-09
SSE	3.104E-08	3.235E-08	2.070E-08	1.165E-08	7.784E-09	5.705E-09	4.431E-09	3.582E-09	2.982E-09	2.537E-09	2.197E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
	SEGMENT BOUNDARIES IN MILES FROM THE SITE									
S	5.468E-08	9.644E-08	7.638E-08	5.812E-08	5.611E-08	3.066E-08	1.146E-08	5.585E-09	3.468E-09	2.438E-09
SSW	3.499E-08	6.127E-08	5.322E-08	4.741E-08	3.628E-08	1.878E-08	6.823E-09	3.198E-09	1.946E-09	1.346E-09
SW	4.909E-08	1.072E-07	6.756E-08	3.989E-08	2.731E-08	1.547E-08	6.241E-09	3.190E-09	2.043E-09	1.443E-09
WSW	7.473E-08	1.673E-07	9.958E-08	5.657E-08	3.771E-08	1.974E-08	7.976E-09	3.895E-09	2.427E-09	1.710E-09
W	2.226E-07	2.261E-07	1.133E-07	6.336E-08	4.145E-08	1.969E-08	8.222E-09	4.353E-09	2.722E-09	1.923E-09
WNW	2.022E-07	2.994E-07	1.582E-07	9.061E-08	5.899E-08	2.789E-08	1.078E-08	5.411E-09	3.437E-09	2.436E-09
NW	1.924E-07	3.894E-07	2.060E-07	1.100E-07	6.951E-08	3.132E-08	1.118E-08	5.309E-09	3.280E-09	2.290E-09
NNW	3.868E-08	1.163E-07	1.169E-07	8.582E-08	5.707E-08	2.651E-08	9.604E-09	4.663E-09	2.948E-09	2.104E-09
N	1.953E-08	4.282E-08	4.110E-08	3.160E-08	2.432E-08	1.428E-08	7.927E-09	4.951E-09	3.217E-09	2.280E-09
NNE	1.909E-08	3.828E-08	3.380E-08	2.532E-08	2.081E-08	2.061E-08	9.652E-09	4.721E-09	2.982E-09	2.123E-09
NE	2.041E-08	3.726E-08	3.039E-08	2.167E-08	1.710E-08	1.563E-08	7.146E-09	3.474E-09	2.203E-09	1.569E-09
ENE	1.084E-08	2.051E-08	1.733E-08	1.271E-08	1.024E-08	1.218E-08	6.344E-09	3.336E-09	2.309E-09	1.690E-09
E	9.633E-09	1.826E-08	1.558E-08	1.152E-08	9.339E-09	9.128E-09	4.356E-09	2.166E-09	1.389E-09	1.021E-09
ESE	1.674E-08	2.702E-08	2.124E-08	1.493E-08	1.152E-08	1.065E-08	5.238E-09	2.695E-09	1.750E-09	1.270E-09
SE	3.325E-08	5.552E-08	4.357E-08	3.032E-08	2.204E-08	1.167E-08	5.377E-09	3.027E-09	2.070E-09	1.497E-09
SSE	4.539E-08	7.375E-08	5.811E-08	4.084E-08	3.179E-08	2.688E-08	1.194E-08	5.750E-09	3.596E-09	2.543E-09

ERP ELEVATED STACK RELEASES - JAN-JUN 2019
2.260 DAY DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	1.228E-11	3.471E-09	4.594E-08	8.669E-08	1.062E-07	9.343E-08	7.722E-08	6.356E-08	5.290E-08	5.770E-08	5.883E-08
SSW	1.609E-11	3.383E-09	2.971E-08	5.464E-08	6.735E-08	5.964E-08	4.952E-08	5.140E-08	4.949E-08	4.176E-08	3.574E-08
SW	7.926E-16	8.457E-10	3.251E-08	8.548E-08	1.392E-07	9.338E-08	6.669E-08	5.018E-08	3.934E-08	3.183E-08	2.642E-08
WSW	8.378E-16	9.492E-10	4.677E-08	1.323E-07	2.234E-07	1.411E-07	9.753E-08	7.188E-08	5.554E-08	4.447E-08	3.660E-08
W	5.205E-13	4.952E-08	2.382E-07	2.964E-07	2.620E-07	1.621E-07	1.107E-07	8.093E-08	6.219E-08	4.959E-08	4.070E-08
WNW	2.951E-14	1.074E-08	1.704E-07	3.209E-07	3.782E-07	2.273E-07	1.525E-07	1.146E-07	9.010E-08	7.103E-08	5.777E-08
NW	2.075E-15	2.096E-09	1.189E-07	3.421E-07	5.302E-07	3.053E-07	1.992E-07	1.432E-07	1.086E-07	8.473E-08	6.834E-08
NNW	7.320E-16	7.861E-10	2.511E-08	6.766E-08	1.275E-07	1.314E-07	1.200E-07	1.033E-07	8.818E-08	6.909E-08	5.592E-08
N	1.246E-15	9.637E-10	1.554E-08	3.175E-08	4.544E-08	4.614E-08	4.212E-08	3.648E-08	3.158E-08	2.751E-08	2.417E-08
NNE	1.302E-15	9.755E-10	1.548E-08	3.079E-08	4.158E-08	3.931E-08	3.426E-08	2.938E-08	2.526E-08	2.191E-08	1.921E-08
NE	1.164E-15	1.056E-09	1.694E-08	3.264E-08	4.092E-08	3.663E-08	3.074E-08	2.565E-08	2.160E-08	1.844E-08	1.595E-08
ENE	6.250E-16	5.510E-10	8.918E-09	1.740E-08	2.241E-08	2.052E-08	1.753E-08	1.485E-08	1.266E-08	1.092E-08	9.543E-09
E	5.960E-16	4.999E-10	7.958E-09	1.543E-08	1.991E-08	1.834E-08	1.577E-08	1.342E-08	1.149E-08	9.942E-09	8.703E-09
ESE	1.609E-11	2.533E-09	1.495E-08	2.515E-08	2.959E-08	2.591E-08	2.148E-08	1.777E-08	1.489E-08	1.266E-08	1.092E-08
SE	1.609E-11	3.514E-09	2.905E-08	5.119E-08	6.097E-08	5.334E-08	4.406E-08	3.629E-08	3.023E-08	2.554E-08	2.189E-08
SSE	4.446E-11	6.386E-09	4.042E-08	6.850E-08	8.073E-08	7.080E-08	5.875E-08	4.863E-08	4.071E-08	3.457E-08	2.979E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	5.113E-08	3.060E-08	1.942E-08	1.073E-08	7.204E-09	5.262E-09	4.006E-09	3.178E-09	2.612E-09	2.193E-09	1.867E-09
SSW	3.152E-08	1.879E-08	1.178E-08	6.408E-09	4.211E-09	3.015E-09	2.284E-09	1.804E-09	1.470E-09	1.226E-09	1.042E-09
SW	2.372E-08	1.597E-08	1.030E-08	5.806E-09	3.985E-09	2.955E-09	2.309E-09	1.839E-09	1.508E-09	1.264E-09	1.078E-09
WSW	3.188E-08	1.920E-08	1.294E-08	7.496E-09	4.900E-09	3.517E-09	2.677E-09	2.121E-09	1.731E-09	1.445E-09	1.228E-09
W	3.416E-08	1.822E-08	1.260E-08	7.774E-09	5.500E-09	3.981E-09	3.039E-09	2.415E-09	1.977E-09	1.655E-09	1.410E-09
WNW	4.862E-08	2.632E-08	1.747E-08	1.023E-08	6.837E-09	4.988E-09	3.859E-09	3.091E-09	2.538E-09	2.128E-09	1.816E-09
NW	5.688E-08	2.945E-08	1.899E-08	1.065E-08	6.955E-09	4.996E-09	3.826E-09	3.043E-09	2.491E-09	2.086E-09	1.779E-09
NNW	4.707E-08	2.531E-08	1.620E-08	9.080E-09	6.019E-09	4.372E-09	3.379E-09	2.714E-09	2.252E-09	1.901E-09	1.628E-09
N	2.147E-08	1.358E-08	1.085E-08	7.854E-09	6.122E-09	4.858E-09	3.768E-09	3.031E-09	2.505E-09	2.116E-09	1.819E-09
NNE	2.092E-08	2.529E-08	1.623E-08	9.151E-09	6.099E-09	4.452E-09	3.441E-09	2.766E-09	2.287E-09	1.934E-09	1.663E-09
NE	1.674E-08	1.897E-08	1.213E-08	6.811E-09	4.530E-09	3.303E-09	2.570E-09	2.075E-09	1.723E-09	1.456E-09	1.252E-09
ENE	1.008E-08	1.543E-08	1.024E-08	6.006E-09	4.102E-09	3.046E-09	2.523E-09	2.120E-09	1.760E-09	1.492E-09	1.286E-09
E	9.230E-09	1.117E-08	7.269E-09	4.166E-09	2.806E-09	2.064E-09	1.606E-09	1.298E-09	1.105E-09	9.539E-10	8.226E-10
ESE	1.097E-08	1.282E-08	8.511E-09	4.997E-09	3.414E-09	2.535E-09	1.985E-09	1.611E-09	1.344E-09	1.143E-09	9.888E-10
SE	1.901E-08	1.113E-08	8.114E-09	5.339E-09	3.767E-09	2.895E-09	2.350E-09	1.977E-09	1.637E-09	1.386E-09	1.193E-09
SSE	3.080E-08	3.188E-08	2.029E-08	1.131E-08	7.479E-09	5.426E-09	4.172E-09	3.339E-09	2.752E-09	2.318E-09	1.988E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	5.461E-08	9.621E-08	7.608E-08	5.777E-08	5.564E-08	3.019E-08	1.109E-08	5.277E-09	3.199E-09	2.196E-09
SSW	3.494E-08	6.110E-08	5.297E-08	4.709E-08	3.596E-08	1.850E-08	6.626E-09	3.041E-09	1.814E-09	1.230E-09
SW	4.902E-08	1.069E-07	6.720E-08	3.958E-08	2.703E-08	1.517E-08	5.995E-09	2.972E-09	1.847E-09	1.267E-09
WSW	7.460E-08	1.666E-07	9.890E-08	5.599E-08	3.719E-08	1.924E-08	7.553E-09	3.550E-09	2.131E-09	1.449E-09
W	2.222E-07	2.253E-07	1.125E-07	6.275E-08	4.091E-08	1.926E-08	7.836E-09	4.009E-09	2.426E-09	1.659E-09
WNW	2.018E-07	2.984E-07	1.573E-07	8.982E-08	5.831E-08	2.734E-08	1.033E-08	5.029E-09	3.100E-09	2.134E-09
NW	1.921E-07	3.885E-07	2.051E-07	1.094E-07	6.895E-08	3.090E-08	1.086E-08	5.051E-09	3.056E-09	2.092E-09
NNW	3.862E-08	1.159E-07	1.164E-07	8.522E-08	5.654E-08	2.610E-08	9.302E-09	4.414E-09	2.728E-09	1.904E-09
N	1.950E-08	4.271E-08	4.093E-08	3.143E-08	2.416E-08	1.412E-08	7.749E-09	4.759E-09	3.041E-09	2.121E-09
NNE	1.906E-08	3.817E-08	3.366E-08	2.516E-08	2.064E-08	2.029E-08	9.367E-09	4.487E-09	2.776E-09	1.938E-09
NE	2.039E-08	3.717E-08	3.027E-08	2.155E-08	1.698E-08	1.543E-08	6.979E-09	3.337E-09	2.082E-09	1.459E-09
ENE	1.083E-08	2.046E-08	1.726E-08	1.263E-08	1.015E-08	1.194E-08	6.100E-09	3.118E-09	2.098E-09	1.495E-09
E	9.622E-09	1.822E-08	1.552E-08	1.145E-08	9.265E-09	9.006E-09	4.251E-09	2.079E-09	1.312E-09	9.501E-10
ESE	1.672E-08	2.697E-08	2.118E-08	1.486E-08	1.145E-08	1.049E-08	5.074E-09	2.549E-09	1.616E-09	1.145E-09
SE	3.321E-08	5.540E-08	4.342E-08	3.018E-08	2.191E-08	1.154E-08	5.257E-09	2.909E-09	1.954E-09	1.389E-09
SSE	4.534E-08	7.360E-08	5.791E-08	4.064E-08	3.158E-08	2.649E-08	1.160E-08	5.472E-09	3.353E-09	2.324E-09

ERP ELEVATED STACK RELEASES - JAN-JUN 2019
8.000 DAY DECAY, DEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	1.228E-11	3.466E-09	4.595E-08	8.675E-08	1.054E-07	9.192E-08	7.535E-08	6.156E-08	5.088E-08	5.532E-08	5.629E-08
SSW	1.610E-11	3.370E-09	2.967E-08	5.462E-08	6.682E-08	5.868E-08	4.833E-08	4.986E-08	4.776E-08	4.007E-08	3.411E-08
SW	7.928E-16	8.461E-10	3.253E-08	8.559E-08	1.380E-07	9.178E-08	6.512E-08	4.875E-08	3.805E-08	3.068E-08	2.539E-08
WSW	8.379E-16	9.496E-10	4.681E-08	1.323E-07	2.213E-07	1.387E-07	9.532E-08	6.993E-08	5.383E-08	4.297E-08	3.528E-08
W	5.206E-13	4.954E-08	2.372E-07	2.933E-07	2.569E-07	1.578E-07	1.071E-07	7.789E-08	5.961E-08	4.737E-08	3.876E-08
WNW	2.952E-14	1.074E-08	1.704E-07	3.187E-07	3.721E-07	2.216E-07	1.476E-07	1.104E-07	8.648E-08	6.785E-08	5.492E-08
NW	2.075E-15	2.097E-09	1.190E-07	3.410E-07	5.235E-07	2.985E-07	1.933E-07	1.381E-07	1.042E-07	8.087E-08	6.485E-08
NNW	7.321E-16	7.865E-10	2.513E-08	6.775E-08	1.268E-07	1.301E-07	1.186E-07	1.019E-07	8.687E-08	6.781E-08	5.465E-08
N	1.246E-15	9.640E-10	1.555E-08	3.178E-08	4.518E-08	4.562E-08	4.147E-08	3.578E-08	3.087E-08	2.682E-08	2.351E-08
NNE	1.302E-15	9.758E-10	1.549E-08	3.082E-08	4.131E-08	3.879E-08	3.362E-08	2.869E-08	2.456E-08	2.122E-08	1.854E-08
NE	1.164E-15	1.057E-09	1.695E-08	3.267E-08	4.062E-08	3.607E-08	3.005E-08	2.491E-08	2.086E-08	1.771E-08	1.525E-08
ENE	6.251E-16	5.512E-10	8.924E-09	1.742E-08	2.226E-08	2.023E-08	1.717E-08	1.446E-08	1.227E-08	1.054E-08	9.177E-09
E	5.961E-16	5.001E-10	7.963E-09	1.545E-08	1.977E-08	1.809E-08	1.546E-08	1.309E-08	1.116E-08	9.617E-09	8.391E-09
ESE	1.610E-11	2.519E-09	1.489E-08	2.510E-08	2.933E-08	2.548E-08	2.096E-08	1.723E-08	1.434E-08	1.213E-08	1.041E-08
SE	1.610E-11	3.500E-09	2.900E-08	5.116E-08	6.046E-08	5.246E-08	4.299E-08	3.516E-08	2.910E-08	2.444E-08	2.083E-08
SSE	4.448E-11	6.353E-09	4.029E-08	6.839E-08	8.002E-08	6.963E-08	5.735E-08	4.715E-08	3.924E-08	3.314E-08	2.841E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	4.873E-08	2.865E-08	1.771E-08	9.324E-09	5.957E-09	4.175E-09	3.071E-09	2.364E-09	1.894E-09	1.559E-09	1.305E-09
SSW	2.995E-08	1.747E-08	1.066E-08	5.526E-09	3.467E-09	2.405E-09	1.774E-09	1.370E-09	1.093E-09	8.946E-10	7.471E-10
SW	2.277E-08	1.522E-08	9.553E-09	5.111E-09	3.309E-09	2.339E-09	1.779E-09	1.386E-09	1.115E-09	9.195E-10	7.728E-10
WSW	3.071E-08	1.826E-08	1.204E-08	6.719E-09	4.264E-09	2.989E-09	2.232E-09	1.740E-09	1.400E-09	1.154E-09	9.700E-10
W	3.245E-08	1.714E-08	1.180E-08	7.010E-09	4.752E-09	3.356E-09	2.510E-09	1.960E-09	1.580E-09	1.306E-09	1.099E-09
WNW	4.600E-08	2.430E-08	1.573E-08	8.761E-09	5.520E-09	3.855E-09	2.895E-09	2.267E-09	1.825E-09	1.503E-09	1.262E-09
NW	5.368E-08	2.701E-08	1.693E-08	9.010E-09	5.617E-09	3.883E-09	2.886E-09	2.240E-09	1.794E-09	1.473E-09	1.234E-09
NNW	4.578E-08	2.396E-08	1.488E-08	7.843E-09	4.843E-09	3.318E-09	2.444E-09	1.893E-09	1.531E-09	1.265E-09	1.062E-09
N	2.084E-08	1.309E-08	1.044E-08	7.584E-09	5.808E-09	4.435E-09	3.365E-09	2.654E-09	2.155E-09	1.793E-09	1.520E-09
NNE	2.022E-08	2.451E-08	1.527E-08	8.185E-09	5.204E-09	3.654E-09	2.733E-09	2.134E-09	1.721E-09	1.421E-09	1.197E-09
NE	1.600E-08	1.818E-08	1.127E-08	6.012E-09	3.819E-09	2.681E-09	2.024E-09	1.595E-09	1.297E-09	1.075E-09	9.087E-10
ENE	9.710E-09	1.513E-08	9.761E-09	5.408E-09	3.451E-09	2.423E-09	1.914E-09	1.552E-09	1.255E-09	1.040E-09	8.777E-10
E	8.910E-09	1.084E-08	6.850E-09	3.697E-09	2.323E-09	1.613E-09	1.194E-09	9.238E-10	7.555E-10	6.308E-10	5.313E-10
ESE	1.045E-08	1.238E-08	8.009E-09	4.457E-09	2.862E-09	2.019E-09	1.512E-09	1.181E-09	9.504E-10	7.834E-10	6.578E-10
SE	1.799E-08	1.034E-08	7.451E-09	4.855E-09	3.407E-09	2.618E-09	2.133E-09	1.799E-09	1.467E-09	1.226E-09	1.043E-09
SSE	2.936E-08	3.045E-08	1.880E-08	9.953E-09	6.274E-09	4.376E-09	3.254E-09	2.529E-09	2.031E-09	1.671E-09	1.402E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
	SEGMENT BOUNDARIES IN MILES FROM THE SITE									
S	5.464E-08	9.528E-08	7.425E-08	5.562E-08	5.321E-08	2.825E-08	9.691E-09	4.208E-09	2.387E-09	1.564E-09
SSW	3.492E-08	6.049E-08	5.170E-08	4.543E-08	3.434E-08	1.722E-08	5.752E-09	2.436E-09	1.380E-09	8.988E-10
SW	4.907E-08	1.058E-07	6.568E-08	3.830E-08	2.598E-08	1.438E-08	5.297E-09	2.374E-09	1.395E-09	9.232E-10
WSW	7.462E-08	1.648E-07	9.674E-08	5.430E-08	3.587E-08	1.826E-08	6.810E-09	3.026E-09	1.751E-09	1.159E-09
W	2.204E-07	2.209E-07	1.089E-07	6.017E-08	3.898E-08	1.817E-08	7.070E-09	3.390E-09	1.973E-09	1.311E-09
WNW	2.008E-07	2.933E-07	1.524E-07	8.621E-08	5.545E-08	2.532E-08	8.870E-09	3.915E-09	2.278E-09	1.509E-09
NW	1.917E-07	3.830E-07	1.993E-07	1.050E-07	6.546E-08	2.846E-08	9.262E-09	3.947E-09	2.255E-09	1.480E-09
NNW	3.866E-08	1.152E-07	1.150E-07	8.389E-08	5.526E-08	2.477E-08	8.073E-09	3.375E-09	1.913E-09	1.269E-09
N	1.952E-08	4.240E-08	4.030E-08	3.073E-08	2.350E-08	1.364E-08	7.431E-09	4.373E-09	2.667E-09	1.799E-09
NNE	1.908E-08	3.786E-08	3.303E-08	2.447E-08	1.996E-08	1.945E-08	8.435E-09	3.699E-09	2.148E-09	1.427E-09
NE	2.041E-08	3.683E-08	2.960E-08	2.081E-08	1.625E-08	1.462E-08	6.206E-09	2.722E-09	1.604E-09	1.079E-09
ENE	1.084E-08	2.028E-08	1.690E-08	1.224E-08	9.780E-09	1.154E-08	5.506E-09	2.494E-09	1.542E-09	1.044E-09
E	9.630E-09	1.806E-08	1.521E-08	1.112E-08	8.946E-09	8.638E-09	3.787E-09	1.635E-09	9.369E-10	6.309E-10
ESE	1.668E-08	2.668E-08	2.067E-08	1.432E-08	1.093E-08	1.001E-08	4.538E-09	2.041E-09	1.188E-09	7.863E-10
SE	3.318E-08	5.484E-08	4.238E-08	2.906E-08	2.085E-08	1.076E-08	4.788E-09	2.634E-09	1.768E-09	1.230E-09
SSE	4.524E-08	7.282E-08	5.654E-08	3.917E-08	3.016E-08	2.503E-08	1.028E-08	4.434E-09	2.547E-09	1.678E-09

ERP ELEVATED STACK RELEASES - JAN-JUN 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) AT FIXED POINTS BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	.25	.50	.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
	DISTANCES IN MILES										
S	3.868E-10	1.638E-09	3.352E-09	3.440E-09	2.140E-09	1.433E-09	1.012E-09	7.431E-10	5.627E-10	4.629E-10	4.222E-10
SSW	2.716E-10	9.473E-10	1.880E-09	1.916E-09	1.188E-09	7.950E-10	5.610E-10	4.119E-10	3.925E-10	2.968E-10	2.323E-10
SW	7.124E-11	4.274E-10	9.101E-10	9.427E-10	1.155E-09	6.302E-10	3.908E-10	2.654E-10	1.918E-10	1.450E-10	1.135E-10
WSW	8.057E-11	4.833E-10	1.029E-09	2.363E-09	1.320E-09	7.180E-10	4.441E-10	3.011E-10	2.174E-10	1.643E-10	1.285E-10
W	1.032E-10	5.374E-09	5.239E-09	3.552E-09	1.837E-09	9.712E-10	5.909E-10	3.958E-10	2.833E-10	2.129E-10	1.662E-10
WNW	1.365E-10	8.189E-10	5.822E-09	4.620E-09	2.889E-09	1.462E-09	8.684E-10	5.746E-10	4.230E-10	3.189E-10	2.530E-10
NW	1.731E-10	1.039E-09	2.211E-09	6.005E-09	3.994E-09	1.983E-09	1.165E-09	7.644E-10	5.442E-10	4.124E-10	3.296E-10
NNW	6.791E-11	4.074E-10	8.676E-10	8.986E-10	1.093E-09	5.982E-10	3.772E-10	3.219E-10	2.415E-10	1.952E-10	1.674E-10
N	9.188E-11	5.513E-10	1.174E-09	1.216E-09	7.594E-10	5.092E-10	3.597E-10	2.642E-10	2.001E-10	1.553E-10	1.230E-10
NNE	9.388E-11	5.632E-10	1.199E-09	1.242E-09	7.759E-10	5.203E-10	3.675E-10	2.700E-10	2.045E-10	1.587E-10	1.257E-10
NE	9.188E-11	5.513E-10	1.174E-09	1.216E-09	7.594E-10	5.092E-10	3.597E-10	2.642E-10	2.001E-10	1.553E-10	1.230E-10
ENE	4.927E-11	2.956E-10	6.294E-10	6.520E-10	4.072E-10	2.730E-10	1.929E-10	1.417E-10	1.073E-10	8.329E-11	6.596E-11
E	4.528E-11	2.716E-10	5.784E-10	5.991E-10	3.742E-10	2.509E-10	1.772E-10	1.302E-10	9.860E-11	7.653E-11	6.061E-11
ESE	2.004E-10	5.199E-10	9.700E-10	9.734E-10	5.994E-10	4.002E-10	2.821E-10	2.070E-10	1.567E-10	1.216E-10	9.632E-11
SE	3.009E-10	1.123E-09	2.254E-09	2.304E-09	1.430E-09	9.574E-10	6.757E-10	4.961E-10	3.757E-10	2.916E-10	2.309E-10
SSE	5.985E-10	1.544E-09	2.876E-09	2.885E-09	1.776E-09	1.186E-09	8.359E-10	6.135E-10	4.644E-10	3.604E-10	2.854E-10

DIRECTION FROM SITE	5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
	DISTANCES IN MILES										
S	3.394E-10	1.790E-10	1.112E-10	5.875E-11	3.615E-11	3.230E-11	2.310E-11	1.730E-11	1.373E-11	1.093E-11	8.920E-12
SSW	1.877E-10	1.020E-10	6.413E-11	3.428E-11	2.603E-11	1.828E-11	1.310E-11	9.837E-12	7.722E-12	6.169E-12	5.035E-12
SW	9.172E-11	6.150E-11	4.133E-11	2.355E-11	1.478E-11	1.139E-11	8.008E-12	6.013E-12	4.675E-12	3.735E-12	3.048E-12
WSW	1.041E-10	6.618E-11	4.392E-11	2.881E-11	1.744E-11	1.169E-11	8.498E-12	6.381E-12	4.961E-12	3.963E-12	3.235E-12
W	1.340E-10	6.129E-11	5.235E-11	3.125E-11	2.213E-11	1.510E-11	1.082E-11	8.127E-12	6.319E-12	5.047E-12	4.120E-12
WNW	2.123E-10	1.142E-10	7.673E-11	4.373E-11	2.945E-11	1.990E-11	1.471E-11	1.105E-11	8.675E-12	6.930E-12	5.656E-12
NW	2.767E-10	1.523E-10	1.036E-10	6.624E-11	4.030E-11	2.699E-11	1.971E-11	1.480E-11	1.152E-11	9.202E-12	7.511E-12
NNW	1.507E-10	1.028E-10	7.742E-11	4.840E-11	3.102E-11	2.051E-11	1.336E-11	9.869E-12	7.615E-12	6.084E-12	4.967E-12
N	9.906E-11	4.690E-11	2.858E-11	1.501E-11	5.096E-11	2.923E-11	2.095E-11	1.573E-11	1.223E-11	9.773E-12	7.978E-12
NNE	1.012E-10	1.578E-10	9.744E-11	5.041E-11	3.073E-11	2.057E-11	1.470E-11	1.100E-11	8.530E-12	6.800E-12	5.540E-12
NE	9.906E-11	1.181E-10	7.269E-11	3.748E-11	2.282E-11	1.528E-11	1.105E-11	8.262E-12	6.425E-12	5.142E-12	4.197E-12
ENE	5.312E-11	5.698E-11	4.080E-11	2.455E-11	1.560E-11	1.034E-11	7.269E-12	5.430E-12	4.217E-12	3.366E-12	2.745E-12
E	4.881E-11	5.499E-11	3.976E-11	2.410E-11	1.534E-11	1.016E-11	7.138E-12	5.236E-12	3.995E-12	3.262E-12	2.660E-12
ESE	7.758E-11	7.208E-11	5.006E-11	2.937E-11	1.856E-11	1.233E-11	8.700E-12	6.420E-12	4.924E-12	3.892E-12	3.151E-12
SE	1.860E-10	8.806E-11	5.368E-11	2.820E-11	1.713E-11	1.170E-11	8.644E-12	1.300E-11	1.003E-11	7.970E-12	6.487E-12
SSE	2.299E-10	2.442E-10	1.497E-10	7.679E-11	4.671E-11	3.130E-11	2.240E-11	1.679E-11	1.304E-11	1.041E-11	8.487E-12

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) BY DOWNWIND SECTORS **********

DIRECTION FROM SITE .5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
	SEGMENT BOUNDARIES IN MILES								
S 3.010E-09	2.115E-09	1.017E-09	5.762E-10	4.036E-10	1.845E-10	6.037E-11	2.964E-11	1.760E-11	1.101E-11
SSW 1.689E-09	1.175E-09	5.638E-10	3.616E-10	2.349E-10	1.042E-10	3.725E-11	1.827E-11	9.963E-12	6.209E-12
SW 8.173E-10	8.744E-10	4.045E-10	1.950E-10	1.148E-10	5.925E-11	2.360E-11	1.094E-11	6.073E-12	3.759E-12
WSW 1.501E-09	1.284E-09	4.600E-10	2.211E-10	1.301E-10	6.472E-11	2.711E-11	1.195E-11	6.445E-12	3.989E-12
W 4.519E-09	1.833E-09	6.142E-10	2.886E-10	1.681E-10	7.347E-11	3.189E-11	1.527E-11	8.208E-12	5.081E-12
WNW 4.176E-09	2.640E-09	9.092E-10	4.266E-10	2.575E-10	1.193E-10	4.472E-11	2.037E-11	1.119E-11	6.975E-12
NW 3.637E-09	3.547E-09	1.223E-09	5.569E-10	3.346E-10	1.583E-10	6.303E-11	2.763E-11	1.495E-11	9.263E-12
NNW 7.791E-10	8.299E-10	4.140E-10	2.468E-10	1.695E-10	1.022E-10	4.712E-11	2.045E-11	1.001E-11	6.124E-12
N 1.054E-09	7.496E-10	3.614E-10	2.014E-10	1.237E-10	5.035E-11	3.401E-11	3.171E-11	1.589E-11	9.837E-12
NNE 1.077E-09	7.659E-10	3.692E-10	2.057E-10	1.264E-10	1.184E-10	5.212E-11	2.093E-11	1.112E-11	6.846E-12
NE 1.054E-09	7.496E-10	3.614E-10	2.014E-10	1.237E-10	9.369E-11	3.879E-11	1.560E-11	8.357E-12	5.172E-12
ENE 5.653E-10	4.020E-10	1.938E-10	1.080E-10	6.634E-11	4.893E-11	2.418E-11	1.051E-11	5.493E-12	3.388E-12
E 5.194E-10	3.694E-10	1.781E-10	9.922E-11	6.096E-11	4.685E-11	2.369E-11	1.033E-11	5.307E-12	3.256E-12
ESE 8.715E-10	5.940E-10	2.836E-10	1.577E-10	9.688E-11	6.351E-11	2.916E-11	1.254E-11	6.502E-12	3.923E-12
SE 2.025E-09	1.414E-09	6.790E-10	3.781E-10	2.322E-10	9.454E-11	2.894E-11	1.193E-11	1.062E-11	8.031E-12
SSE 2.584E-09	1.760E-09	8.403E-10	4.674E-10	2.870E-10	1.990E-10	7.962E-11	3.185E-11	1.696E-11	1.047E-11

ERP ELEVATED STACK RELEASES - JAN-JUN 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION FROM SITE	DIST. (MI)	X/Q (SEC/M3) NO DECAY UNDEPLETED	X/Q (SEC/M3) 2.26 DAY DECAY UNDEPLETED	X/Q (SEC/M3) 8.0 DAY DECAY DEPLETED	D/Q (PER SQ.METER)
A	Site Boundary	S	.80	5.6E-08	5.6E-08	5.6E-08	3.5E-09
A	Site Boundary	SSW	.82	3.9E-08	3.9E-08	3.9E-08	2.0E-09
A	Site Boundary	SW	.97	8.1E-08	8.1E-08	8.1E-08	9.7E-10
A	Site Boundary	WSW	.93	1.1E-07	1.1E-07	1.1E-07	1.8E-09
A	Site Boundary	W	.91	2.9E-07	2.9E-07	2.8E-07	4.0E-09
A	Site Boundary	WNW	.94	2.9E-07	2.9E-07	2.9E-07	5.1E-09
A	Site Boundary	NW	.81	1.7E-07	1.7E-07	1.7E-07	2.3E-09
A	Site Boundary	NNW	.69	1.5E-08	1.5E-08	1.5E-08	7.5E-10
A	Site Boundary	N	.67	9.3E-09	9.3E-09	9.3E-09	9.8E-10
A	Site Boundary	NNE	.60	4.5E-09	4.5E-09	4.5E-09	8.1E-10
A	Site Boundary	NE	.62	6.5E-09	6.5E-09	6.5E-09	8.6E-10
A	Site Boundary	ENE	.59	2.2E-09	2.2E-09	2.2E-09	4.1E-10
A	Site Boundary	E	.53	8.0E-10	8.0E-10	8.0E-10	3.0E-10
A	Site Boundary	ESE	.54	3.6E-09	3.6E-09	3.6E-09	5.8E-10
A	Site Boundary	SE	.65	1.6E-08	1.6E-08	1.6E-08	1.8E-09
A	Site Boundary	SSE	.81	4.9E-08	4.9E-08	4.9E-08	3.0E-09
A	Nearest Res	SW	1.30	1.3E-07	1.3E-07	1.3E-07	1.5E-09
A	Nearest Res	WSW	1.80	1.7E-07	1.7E-07	1.7E-07	9.0E-10
A	Nearest Res	WNW	1.90	2.5E-07	2.5E-07	2.4E-07	1.7E-09
A	Nearest Res	NW	.90	2.5E-07	2.5E-07	2.5E-07	6.4E-09
A	Nearest Res	NNW	1.90	1.3E-07	1.3E-07	1.3E-07	6.7E-10
A	Nearest Cow	NNW	3.50	8.9E-08	8.8E-08	8.7E-08	2.4E-10
A	Nearest Garde	SW	2.20	8.1E-08	8.1E-08	7.9E-08	5.1E-10
A	Nearest Garde	WSW	1.80	1.7E-07	1.7E-07	1.7E-07	9.0E-10
A	Nearest Garde	WNW	1.90	2.5E-07	2.5E-07	2.4E-07	1.7E-09
A	Nearest Garde	NNW	3.00	1.0E-07	1.0E-07	1.0E-07	3.2E-10
A	MAXIMUM CHI/Q	S	1.50	1.1E-07	1.1E-07	1.1E-07	2.1E-09
A	MAXIMUM CHI/Q	SSW	1.50	6.8E-08	6.7E-08	6.7E-08	1.2E-09
A	MAXIMUM CHI/Q	SW	1.50	1.4E-07	1.4E-07	1.4E-07	1.2E-09
A	MAXIMUM CHI/Q	WSW	1.50	2.2E-07	2.2E-07	2.2E-07	1.3E-09
A	MAXIMUM CHI/Q	W	1.00	3.0E-07	3.0E-07	2.9E-07	3.6E-09
A	MAXIMUM CHI/Q	WNW	1.50	3.8E-07	3.8E-07	3.7E-07	2.9E-09
A	MAXIMUM CHI/Q	NW	1.50	5.3E-07	5.3E-07	5.2E-07	4.0E-09
A	MAXIMUM CHI/Q	NNW	2.00	1.3E-07	1.3E-07	1.3E-07	6.0E-10
A	MAXIMUM CHI/Q	N	2.00	4.6E-08	4.6E-08	4.6E-08	5.1E-10
A	MAXIMUM CHI/Q	NNE	1.50	4.2E-08	4.2E-08	4.1E-08	7.8E-10
A	MAXIMUM CHI/Q	NE	1.50	4.1E-08	4.1E-08	4.1E-08	7.6E-10
A	MAXIMUM CHI/Q	ENE	1.50	2.2E-08	2.2E-08	2.2E-08	4.1E-10
A	MAXIMUM CHI/Q	E	1.50	2.0E-08	2.0E-08	2.0E-08	3.7E-10
A	MAXIMUM CHI/Q	ESE	1.50	3.0E-08	3.0E-08	2.9E-08	6.0E-10
A	MAXIMUM CHI/Q	SE	1.50	6.1E-08	6.1E-08	6.0E-08	1.4E-09
A	MAXIMUM CHI/Q	SSE	1.50	8.1E-08	8.1E-08	8.0E-08	1.8E-09

Atmospheric Diffusion Estimates

Elevated Releases

July-September 2019

B300

ERP ELEVATED STACK RELEASES - JUL-SEP 2019
NO DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	1.947E-15	1.736E-09	2.811E-08	5.452E-08	6.849E-08	6.107E-08	5.097E-08	4.230E-08	3.546E-08	4.015E-08	4.322E-08
SSW	8.896E-16	9.298E-10	1.627E-08	3.314E-08	4.454E-08	4.149E-08	3.571E-08	3.966E-08	4.074E-08	3.545E-08	3.120E-08
SW	2.570E-16	4.248E-10	2.011E-08	6.099E-08	1.225E-07	8.728E-08	6.473E-08	5.002E-08	3.998E-08	3.286E-08	2.762E-08
WSW	6.176E-16	9.917E-10	5.279E-08	1.476E-07	2.273E-07	1.405E-07	9.563E-08	6.970E-08	5.339E-08	4.245E-08	3.475E-08
W	4.330E-13	6.415E-08	3.207E-07	3.872E-07	3.169E-07	1.914E-07	1.285E-07	9.274E-08	7.053E-08	5.577E-08	4.544E-08
WNW	5.357E-14	2.022E-08	3.010E-07	5.217E-07	5.389E-07	3.147E-07	2.067E-07	1.511E-07	1.158E-07	9.026E-08	7.271E-08
NW	2.819E-15	2.960E-09	1.674E-07	4.663E-07	7.163E-07	4.179E-07	2.753E-07	1.999E-07	1.529E-07	1.200E-07	9.721E-08
NNW	1.816E-15	2.041E-09	6.282E-08	1.548E-07	2.437E-07	2.286E-07	1.984E-07	1.657E-07	1.381E-07	1.077E-07	8.688E-08
N	2.418E-11	4.524E-09	5.415E-08	1.038E-07	1.352E-07	1.286E-07	1.125E-07	9.486E-08	8.055E-08	6.919E-08	6.014E-08
NNE	2.043E-15	1.603E-09	2.486E-08	4.845E-08	6.415E-08	6.028E-08	5.250E-08	4.508E-08	3.886E-08	3.381E-08	2.974E-08
NE	4.914E-16	5.570E-10	9.499E-09	1.902E-08	2.539E-08	2.377E-08	2.059E-08	1.758E-08	1.508E-08	1.305E-08	1.143E-08
ENE	3.031E-16	3.650E-10	6.307E-09	1.275E-08	1.709E-08	1.594E-08	1.376E-08	1.173E-08	1.005E-08	8.701E-09	7.623E-09
E	2.505E-16	2.846E-10	4.900E-09	9.885E-09	1.346E-08	1.286E-08	1.133E-08	9.799E-09	8.485E-09	7.400E-09	6.515E-09
ESE	2.357E-16	1.985E-10	3.095E-09	6.104E-09	8.491E-09	8.394E-09	7.624E-09	6.773E-09	6.002E-09	5.343E-09	4.792E-09
SE	3.492E-16	3.468E-10	6.029E-09	1.231E-08	1.639E-08	1.509E-08	1.290E-08	1.093E-08	9.337E-09	8.083E-09	7.089E-09
SSE	8.023E-16	8.826E-10	1.489E-08	2.964E-08	3.892E-08	3.590E-08	3.076E-08	2.608E-08	2.225E-08	1.919E-08	1.676E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	3.821E-08	2.381E-08	1.527E-08	8.588E-09	5.824E-09	4.293E-09	3.314E-09	2.664E-09	2.214E-09	1.879E-09	1.620E-09
SSW	2.850E-08	2.024E-08	1.306E-08	7.418E-09	5.187E-09	3.866E-09	2.998E-09	2.421E-09	2.014E-09	1.713E-09	1.482E-09
SW	2.531E-08	1.746E-08	1.134E-08	6.486E-09	4.461E-09	3.321E-09	2.607E-09	2.104E-09	1.749E-09	1.486E-09	1.285E-09
WSW	2.992E-08	1.720E-08	1.138E-08	6.515E-09	4.294E-09	3.114E-09	2.398E-09	1.923E-09	1.589E-09	1.344E-09	1.157E-09
W	3.791E-08	1.979E-08	1.326E-08	7.793E-09	5.318E-09	3.858E-09	2.964E-09	2.373E-09	1.959E-09	1.655E-09	1.424E-09
WNW	6.042E-08	3.111E-08	1.996E-08	1.116E-08	7.340E-09	5.305E-09	4.074E-09	3.257E-09	2.682E-09	2.260E-09	1.939E-09
NW	8.139E-08	4.322E-08	2.846E-08	1.650E-08	1.095E-08	7.985E-09	6.239E-09	5.042E-09	4.181E-09	3.545E-09	3.059E-09
NNW	7.271E-08	3.830E-08	2.442E-08	1.366E-08	9.070E-09	6.613E-09	5.128E-09	4.138E-09	3.446E-09	2.925E-09	2.524E-09
N	5.297E-08	3.272E-08	2.576E-08	1.824E-08	1.354E-08	1.033E-08	8.007E-09	6.450E-09	5.348E-09	4.535E-09	3.915E-09
NNE	3.300E-08	3.847E-08	2.471E-08	1.399E-08	9.374E-09	6.886E-09	5.359E-09	4.338E-09	3.615E-09	3.079E-09	2.668E-09
NE	1.236E-08	1.229E-08	7.832E-09	4.383E-09	2.913E-09	2.126E-09	1.650E-09	1.331E-09	1.106E-09	9.382E-10	8.101E-10
ENE	8.108E-09	9.215E-09	5.966E-09	3.403E-09	2.289E-09	1.685E-09	1.334E-09	1.090E-09	9.074E-10	7.721E-10	6.685E-10
E	6.914E-09	6.616E-09	4.244E-09	2.389E-09	1.592E-09	1.163E-09	9.008E-10	7.260E-10	6.064E-10	5.167E-10	4.459E-10
ESE	5.312E-09	7.407E-09	4.953E-09	2.943E-09	2.033E-09	1.526E-09	1.208E-09	9.908E-10	8.350E-10	7.181E-10	6.276E-10
SE	6.292E-09	4.060E-09	3.426E-09	2.892E-09	2.263E-09	1.869E-09	1.595E-09	1.392E-09	1.176E-09	1.014E-09	8.877E-10
SSE	1.814E-08	2.049E-08	1.312E-08	7.393E-09	4.939E-09	3.619E-09	2.811E-09	2.271E-09	1.890E-09	1.608E-09	1.392E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
	SEGMENT BOUNDARIES IN MILES FROM THE SITE									
S	3.399E-08	6.209E-08	5.019E-08	3.920E-08	4.045E-08	2.321E-08	8.844E-09	4.310E-09	2.678E-09	1.883E-09
SSW	2.036E-08	4.065E-08	3.883E-08	3.842E-08	3.146E-08	1.888E-08	7.680E-09	3.871E-09	2.431E-09	1.716E-09
SW	3.391E-08	9.319E-08	6.486E-08	4.014E-08	2.832E-08	1.648E-08	6.665E-09	3.340E-09	2.112E-09	1.490E-09
WSW	8.344E-08	1.710E-07	9.722E-08	5.388E-08	3.524E-08	1.744E-08	6.610E-09	3.142E-09	1.931E-09	1.348E-09
W	2.933E-07	2.768E-07	1.310E-07	7.125E-08	4.571E-08	2.091E-08	7.907E-09	3.890E-09	2.384E-09	1.659E-09
WNW	3.367E-07	4.354E-07	2.132E-07	1.161E-07	7.336E-08	3.267E-08	1.142E-08	5.355E-09	3.272E-09	2.266E-09
NW	2.637E-07	5.281E-07	2.832E-07	1.538E-07	9.809E-08	4.515E-08	1.669E-08	8.078E-09	5.056E-09	3.553E-09
NNW	9.020E-08	2.172E-07	1.933E-07	1.344E-07	8.781E-08	3.978E-08	1.401E-08	6.674E-09	4.157E-09	2.931E-09
N	6.520E-08	1.253E-07	1.097E-07	8.031E-08	6.016E-08	3.413E-08	1.782E-08	1.026E-08	6.475E-09	4.546E-09
NNE	3.017E-08	5.894E-08	5.161E-08	3.872E-08	3.215E-08	3.113E-08	1.432E-08	6.938E-09	4.354E-09	3.086E-09
NE	1.175E-08	2.325E-08	2.023E-08	1.502E-08	1.225E-08	1.032E-08	4.496E-09	2.145E-09	1.336E-09	9.405E-10
ENE	7.852E-09	1.561E-08	1.353E-08	1.002E-08	8.122E-09	7.525E-09	3.477E-09	1.706E-09	1.090E-09	7.738E-10
E	6.090E-09	1.240E-08	1.113E-08	8.447E-09	6.925E-09	5.628E-09	2.447E-09	1.173E-09	7.304E-10	5.170E-10
ESE	3.789E-09	7.918E-09	7.489E-09	5.971E-09	5.148E-09	5.851E-09	2.986E-09	1.534E-09	9.934E-10	7.192E-10
SE	7.557E-09	1.491E-08	1.269E-08	9.313E-09	7.088E-09	4.274E-09	2.731E-09	1.865E-09	1.368E-09	1.015E-09
SSE	1.833E-08	3.552E-08	3.026E-08	2.218E-08	1.799E-08	1.669E-08	7.575E-09	3.648E-09	2.280E-09	1.611E-09

ERP ELEVATED STACK RELEASES - JUL-SEP 2019
2.260 DAY DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	1.947E-15	1.735E-09	2.808E-08	5.444E-08	6.833E-08	6.087E-08	5.077E-08	4.209E-08	3.526E-08	3.987E-08	4.287E-08
SSW	8.893E-16	9.292E-10	1.625E-08	3.308E-08	4.440E-08	4.132E-08	3.553E-08	3.941E-08	4.044E-08	3.514E-08	3.089E-08
SW	2.570E-16	4.244E-10	2.008E-08	6.083E-08	1.220E-07	8.672E-08	6.421E-08	4.953E-08	3.953E-08	3.243E-08	2.721E-08
WSW	6.174E-16	9.908E-10	5.271E-08	1.473E-07	2.265E-07	1.398E-07	9.504E-08	6.917E-08	5.291E-08	4.201E-08	3.434E-08
W	4.329E-13	6.410E-08	3.202E-07	3.864E-07	3.159E-07	1.905E-07	1.277E-07	9.205E-08	6.991E-08	5.520E-08	4.492E-08
WNW	5.356E-14	2.020E-08	3.006E-07	5.209E-07	5.375E-07	3.135E-07	2.058E-07	1.502E-07	1.150E-07	8.954E-08	7.206E-08
NW	2.818E-15	2.958E-09	1.672E-07	4.656E-07	7.140E-07	4.161E-07	2.738E-07	1.985E-07	1.516E-07	1.188E-07	9.617E-08
NNW	1.815E-15	2.040E-09	6.275E-08	1.546E-07	2.431E-07	2.278E-07	1.975E-07	1.648E-07	1.373E-07	1.070E-07	8.621E-08
N	2.418E-11	4.522E-09	5.410E-08	1.037E-07	1.349E-07	1.283E-07	1.121E-07	9.447E-08	8.017E-08	6.881E-08	5.977E-08
NNE	2.043E-15	1.602E-09	2.484E-08	4.839E-08	6.404E-08	6.013E-08	5.234E-08	4.491E-08	3.869E-08	3.364E-08	2.958E-08
NE	4.913E-16	5.566E-10	9.488E-09	1.900E-08	2.533E-08	2.369E-08	2.051E-08	1.750E-08	1.499E-08	1.297E-08	1.134E-08
ENE	3.030E-16	3.648E-10	6.299E-09	1.273E-08	1.704E-08	1.588E-08	1.370E-08	1.166E-08	9.985E-09	8.638E-09	7.561E-09
E	2.504E-16	2.844E-10	4.895E-09	9.869E-09	1.343E-08	1.281E-08	1.127E-08	9.738E-09	8.421E-09	7.335E-09	6.449E-09
ESE	2.356E-16	1.984E-10	3.092E-09	6.096E-09	8.473E-09	8.367E-09	7.589E-09	6.733E-09	5.960E-09	5.299E-09	4.746E-09
SE	3.491E-16	3.466E-10	6.022E-09	1.228E-08	1.634E-08	1.503E-08	1.282E-08	1.085E-08	9.262E-09	8.009E-09	7.016E-09
SSE	8.021E-16	8.820E-10	1.487E-08	2.960E-08	3.882E-08	3.577E-08	3.062E-08	2.593E-08	2.210E-08	1.905E-08	1.662E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	3.786E-08	2.344E-08	1.495E-08	8.320E-09	5.579E-09	4.066E-09	3.104E-09	2.468E-09	2.028E-09	1.702E-09	1.452E-09
SSW	2.817E-08	1.984E-08	1.271E-08	7.121E-09	4.901E-09	3.597E-09	2.748E-09	2.186E-09	1.793E-09	1.502E-09	1.280E-09
SW	2.490E-08	1.704E-08	1.098E-08	6.182E-09	4.186E-09	3.068E-09	2.371E-09	1.885E-09	1.542E-09	1.291E-09	1.099E-09
WSW	2.952E-08	1.684E-08	1.106E-08	6.228E-09	4.042E-09	2.886E-09	2.188E-09	1.727E-09	1.406E-09	1.171E-09	9.923E-10
W	3.742E-08	1.940E-08	1.289E-08	7.461E-09	5.009E-09	3.578E-09	2.707E-09	2.135E-09	1.735E-09	1.443E-09	1.223E-09
WNW	5.981E-08	3.063E-08	1.953E-08	1.081E-08	7.024E-09	5.020E-09	3.811E-09	3.012E-09	2.453E-09	2.043E-09	1.733E-09
NW	8.042E-08	4.242E-08	2.775E-08	1.586E-08	1.038E-08	7.467E-09	5.752E-09	4.583E-09	3.748E-09	3.134E-09	2.667E-09
NNW	7.208E-08	3.780E-08	2.399E-08	1.330E-08	8.759E-09	6.331E-09	4.867E-09	3.893E-09	3.214E-09	2.705E-09	2.314E-09
N	5.261E-08	3.239E-08	2.541E-08	1.786E-08	1.315E-08	9.961E-09	7.663E-09	6.128E-09	5.044E-09	4.247E-09	3.639E-09
NNE	3.278E-08	3.801E-08	2.431E-08	1.365E-08	9.073E-09	6.610E-09	5.102E-09	4.096E-09	3.386E-09	2.860E-09	2.459E-09
NE	1.225E-08	1.214E-08	7.701E-09	4.273E-09	2.817E-09	2.038E-09	1.569E-09	1.256E-09	1.035E-09	8.705E-10	7.456E-10
ENE	8.035E-09	9.100E-09	5.867E-09	3.319E-09	2.215E-09	1.617E-09	1.270E-09	1.030E-09	8.504E-10	7.180E-10	6.168E-10
E	6.833E-09	6.490E-09	4.136E-09	2.299E-09	1.512E-09	1.090E-09	8.336E-10	6.634E-10	5.471E-10	4.602E-10	3.922E-10
ESE	5.255E-09	7.292E-09	4.851E-09	2.853E-09	1.951E-09	1.450E-09	1.136E-09	9.230E-10	7.704E-10	6.562E-10	5.681E-10
SE	6.221E-09	3.994E-09	3.356E-09	2.810E-09	2.181E-09	1.786E-09	1.513E-09	1.309E-09	1.097E-09	9.381E-10	8.147E-10
SSE	1.797E-08	2.018E-08	1.286E-08	7.173E-09	4.744E-09	3.442E-09	2.646E-09	2.117E-09	1.744E-09	1.469E-09	1.259E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	3.394E-08	6.193E-08	4.999E-08	3.897E-08	4.012E-08	2.287E-08	8.576E-09	4.085E-09	2.482E-09	1.706E-09
SSW	2.032E-08	4.052E-08	3.862E-08	3.812E-08	3.114E-08	1.853E-08	7.377E-09	3.605E-09	2.197E-09	1.506E-09
SW	3.382E-08	9.271E-08	6.434E-08	3.968E-08	2.790E-08	1.609E-08	6.361E-09	3.087E-09	1.893E-09	1.295E-09
WSW	8.328E-08	1.704E-07	9.663E-08	5.341E-08	3.483E-08	1.709E-08	6.329E-09	2.915E-09	1.736E-09	1.174E-09
W	2.927E-07	2.758E-07	1.302E-07	7.064E-08	4.519E-08	2.051E-08	7.578E-09	3.611E-09	2.146E-09	1.448E-09
WNW	3.362E-07	4.342E-07	2.123E-07	1.153E-07	7.270E-08	3.218E-08	1.106E-08	5.071E-09	3.027E-09	2.050E-09
NW	2.633E-07	5.264E-07	2.816E-07	1.525E-07	9.705E-08	4.434E-08	1.607E-08	7.559E-09	4.599E-09	3.143E-09
NNW	9.007E-08	2.166E-07	1.925E-07	1.336E-07	8.713E-08	3.928E-08	1.366E-08	6.393E-09	3.913E-09	2.711E-09
N	6.513E-08	1.250E-07	1.094E-07	7.993E-08	5.980E-08	3.378E-08	1.745E-08	9.893E-09	6.154E-09	4.258E-09
NNE	3.014E-08	5.882E-08	5.145E-08	3.855E-08	3.197E-08	3.076E-08	1.398E-08	6.663E-09	4.113E-09	2.867E-09
NE	1.173E-08	2.319E-08	2.015E-08	1.494E-08	1.216E-08	1.019E-08	4.388E-09	2.058E-09	1.261E-09	8.729E-10
ENE	7.840E-09	1.557E-08	1.347E-08	9.951E-09	8.056E-09	7.427E-09	3.395E-09	1.638E-09	1.030E-09	7.197E-10
E	6.081E-09	1.236E-08	1.107E-08	8.383E-09	6.854E-09	5.520E-09	2.357E-09	1.100E-09	6.677E-10	4.608E-10
ESE	3.784E-09	7.897E-09	7.454E-09	5.929E-09	5.099E-09	5.754E-09	2.896E-09	1.458E-09	9.257E-10	6.574E-10
SE	7.543E-09	1.486E-08	1.262E-08	9.238E-09	7.016E-09	4.205E-09	2.652E-09	1.782E-09	1.287E-09	9.396E-10
SSE	1.831E-08	3.541E-08	3.012E-08	2.204E-08	1.784E-08	1.643E-08	7.356E-09	3.471E-09	2.126E-09	1.473E-09

ERP ELEVATED STACK RELEASES - JUL-SEP 2019
8.000 DAY DECAY, DEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	1.947E-15	1.736E-09	2.810E-08	5.450E-08	6.783E-08	5.992E-08	4.958E-08	4.082E-08	3.397E-08	3.835E-08	4.126E-08
SSW	8.895E-16	9.296E-10	1.626E-08	3.312E-08	4.411E-08	4.075E-08	3.480E-08	3.845E-08	3.937E-08	3.409E-08	2.989E-08
SW	2.570E-16	4.247E-10	2.010E-08	6.095E-08	1.213E-07	8.578E-08	6.324E-08	4.862E-08	3.870E-08	3.169E-08	2.654E-08
WSW	6.175E-16	9.914E-10	5.277E-08	1.474E-07	2.240E-07	1.369E-07	9.235E-08	6.679E-08	5.081E-08	4.016E-08	3.269E-08
W	4.330E-13	6.414E-08	3.187E-07	3.817E-07	3.083E-07	1.841E-07	1.224E-07	8.761E-08	6.614E-08	5.195E-08	4.207E-08
WNW	5.357E-14	2.021E-08	3.005E-07	5.165E-07	5.262E-07	3.031E-07	1.969E-07	1.426E-07	1.084E-07	8.384E-08	6.702E-08
NW	2.819E-15	2.959E-09	1.673E-07	4.642E-07	7.047E-07	4.065E-07	2.654E-07	1.913E-07	1.455E-07	1.134E-07	9.129E-08
NNW	1.816E-15	2.041E-09	6.280E-08	1.547E-07	2.413E-07	2.244E-07	1.937E-07	1.610E-07	1.337E-07	1.037E-07	8.309E-08
N	2.418E-11	4.512E-09	5.410E-08	1.038E-07	1.340E-07	1.265E-07	1.099E-07	9.213E-08	7.783E-08	6.653E-08	5.758E-08
NNE	2.043E-15	1.602E-09	2.486E-08	4.843E-08	6.361E-08	5.934E-08	5.136E-08	4.387E-08	3.765E-08	3.263E-08	2.860E-08
NE	4.914E-16	5.569E-10	9.496E-09	1.902E-08	2.516E-08	2.337E-08	2.011E-08	1.708E-08	1.457E-08	1.256E-08	1.094E-08
ENE	3.030E-16	3.650E-10	6.305E-09	1.275E-08	1.693E-08	1.566E-08	1.342E-08	1.136E-08	9.682E-09	8.340E-09	7.274E-09
E	2.505E-16	2.845E-10	4.899E-09	9.880E-09	1.334E-08	1.265E-08	1.108E-08	9.529E-09	8.213E-09	7.132E-09	6.256E-09
ESE	2.356E-16	1.985E-10	3.094E-09	6.102E-09	8.424E-09	8.277E-09	7.482E-09	6.621E-09	5.849E-09	5.193E-09	4.646E-09
SE	3.492E-16	3.468E-10	6.027E-09	1.230E-08	1.623E-08	1.481E-08	1.254E-08	1.054E-08	8.947E-09	7.699E-09	6.716E-09
SSE	8.023E-16	8.824E-10	1.488E-08	2.963E-08	3.856E-08	3.526E-08	2.998E-08	2.524E-08	2.141E-08	1.837E-08	1.596E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	3.634E-08	2.214E-08	1.374E-08	7.260E-09	4.606E-09	3.210E-09	2.370E-09	1.830E-09	1.467E-09	1.208E-09	1.012E-09
SSW	2.722E-08	1.898E-08	1.184E-08	6.294E-09	4.096E-09	2.922E-09	2.182E-09	1.702E-09	1.371E-09	1.131E-09	9.515E-10
SW	2.429E-08	1.649E-08	1.035E-08	5.519E-09	3.511E-09	2.445E-09	1.840E-09	1.432E-09	1.151E-09	9.481E-10	7.961E-10
WSW	2.803E-08	1.571E-08	1.007E-08	5.456E-09	3.428E-09	2.385E-09	1.770E-09	1.372E-09	1.099E-09	9.029E-10	7.563E-10
W	3.491E-08	1.779E-08	1.170E-08	6.519E-09	4.208E-09	2.928E-09	2.167E-09	1.678E-09	1.342E-09	1.101E-09	9.212E-10
WNW	5.528E-08	2.747E-08	1.706E-08	8.986E-09	5.557E-09	3.812E-09	2.804E-09	2.163E-09	1.723E-09	1.407E-09	1.173E-09
NW	7.594E-08	3.900E-08	2.485E-08	1.349E-08	8.339E-09	5.722E-09	4.269E-09	3.326E-09	2.666E-09	2.190E-09	1.834E-09
NNW	6.909E-08	3.520E-08	2.169E-08	1.134E-08	6.999E-09	4.796E-09	3.527E-09	2.724E-09	2.191E-09	1.803E-09	1.511E-09
N	5.052E-08	3.076E-08	2.406E-08	1.691E-08	1.221E-08	8.904E-09	6.690E-09	5.242E-09	4.236E-09	3.508E-09	2.962E-09
NNE	3.177E-08	3.683E-08	2.284E-08	1.217E-08	7.724E-09	5.416E-09	4.046E-09	3.158E-09	2.544E-09	2.101E-09	1.768E-09
NE	1.184E-08	1.167E-08	7.183E-09	3.788E-09	2.387E-09	1.665E-09	1.244E-09	9.712E-10	7.836E-10	6.470E-10	5.446E-10
ENE	7.736E-09	8.787E-09	5.503E-09	2.935E-09	1.831E-09	1.265E-09	9.473E-10	7.416E-10	5.981E-10	4.943E-10	4.163E-10
E	6.637E-09	6.303E-09	3.907E-09	2.054E-09	1.268E-09	8.688E-10	6.358E-10	4.871E-10	3.883E-10	3.174E-10	2.643E-10
ESE	5.158E-09	7.215E-09	4.660E-09	2.575E-09	1.635E-09	1.143E-09	8.502E-10	6.598E-10	5.285E-10	4.336E-10	3.626E-10
SE	5.933E-09	3.767E-09	3.171E-09	2.688E-09	2.099E-09	1.731E-09	1.477E-09	1.284E-09	1.058E-09	8.915E-10	7.640E-10
SSE	1.728E-08	1.944E-08	1.202E-08	6.365E-09	4.008E-09	2.793E-09	2.075E-09	1.612E-09	1.294E-09	1.064E-09	8.925E-10

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	3.398E-08	6.135E-08	4.883E-08	3.759E-08	3.857E-08	2.156E-08	7.521E-09	3.246E-09	1.846E-09	1.212E-09
SSW	2.035E-08	4.017E-08	3.785E-08	3.710E-08	3.015E-08	1.764E-08	6.550E-09	2.939E-09	1.713E-09	1.136E-09
SW	3.388E-08	9.211E-08	6.340E-08	3.886E-08	2.723E-08	1.550E-08	5.700E-09	2.487E-09	1.441E-09	9.519E-10
WSW	8.334E-08	1.683E-07	9.401E-08	5.132E-08	3.317E-08	1.594E-08	5.580E-09	2.417E-09	1.382E-09	9.068E-10
W	2.901E-07	2.694E-07	1.249E-07	6.687E-08	4.235E-08	1.889E-08	6.643E-09	2.965E-09	1.690E-09	1.106E-09
WNW	3.342E-07	4.249E-07	2.035E-07	1.088E-07	6.766E-08	2.902E-08	9.255E-09	3.874E-09	2.178E-09	1.414E-09
NW	2.627E-07	5.187E-07	2.734E-07	1.464E-07	9.216E-08	4.092E-08	1.372E-08	5.839E-09	3.344E-09	2.199E-09
NNW	9.016E-08	2.146E-07	1.888E-07	1.301E-07	8.401E-08	3.673E-08	1.171E-08	4.876E-09	2.750E-09	1.809E-09
N	6.515E-08	1.239E-07	1.072E-07	7.761E-08	5.762E-08	3.217E-08	1.641E-08	8.901E-09	5.273E-09	3.522E-09
NNE	3.017E-08	5.834E-08	5.050E-08	3.752E-08	3.097E-08	2.949E-08	1.257E-08	5.484E-09	3.178E-09	2.109E-09
NE	1.174E-08	2.300E-08	1.977E-08	1.452E-08	1.175E-08	9.713E-09	3.920E-09	1.689E-09	9.776E-10	6.495E-10
ENE	7.849E-09	1.544E-08	1.320E-08	9.652E-09	7.761E-09	7.094E-09	3.015E-09	1.289E-09	7.457E-10	4.962E-10
E	6.087E-09	1.227E-08	1.088E-08	8.177E-09	6.657E-09	5.312E-09	2.116E-09	8.821E-10	4.919E-10	3.187E-10
ESE	3.787E-09	7.842E-09	7.349E-09	5.820E-09	4.998E-09	5.622E-09	2.621E-09	1.157E-09	6.642E-10	4.354E-10
SE	7.553E-09	1.472E-08	1.235E-08	8.927E-09	6.717E-09	3.983E-09	2.534E-09	1.727E-09	1.253E-09	8.936E-10
SSE	1.833E-08	3.511E-08	2.949E-08	2.134E-08	1.716E-08	1.566E-08	6.573E-09	2.830E-09	1.623E-09	1.069E-09

ERP ELEVATED STACK RELEASES - JUL-SEP 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) AT FIXED POINTS BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	.25	.50	.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
					DISTANCES IN MILES						
S	1.534E-10	9.203E-10	1.960E-09	2.030E-09	1.268E-09	8.501E-10	6.005E-10	4.411E-10	3.341E-10	2.682E-10	2.508E-10
SSW	8.260E-11	4.956E-10	1.055E-09	1.093E-09	6.827E-10	4.578E-10	3.233E-10	2.375E-10	2.256E-10	1.707E-10	1.336E-10
SW	3.802E-11	2.281E-10	4.857E-10	5.031E-10	5.824E-10	3.223E-10	2.019E-10	1.381E-10	1.002E-10	7.597E-11	5.951E-11
WSW	7.998E-11	4.798E-10	1.022E-09	2.023E-09	1.311E-09	7.134E-10	4.413E-10	2.992E-10	2.160E-10	1.633E-10	1.277E-10
W	1.128E-10	5.972E-09	5.806E-09	3.880E-09	1.838E-09	9.973E-10	6.161E-10	4.175E-10	3.015E-10	2.281E-10	1.788E-10
WNW	2.412E-10	1.447E-09	1.122E-08	8.313E-09	5.258E-09	2.636E-09	1.550E-09	1.010E-09	7.223E-10	5.308E-10	4.083E-10
NW	2.412E-10	1.447E-09	3.082E-09	8.304E-09	5.544E-09	2.750E-09	1.609E-09	1.049E-09	7.371E-10	5.489E-10	4.292E-10
NNW	1.678E-10	1.007E-09	2.144E-09	2.221E-09	2.748E-09	1.498E-09	9.320E-10	7.651E-10	5.510E-10	4.238E-10	3.445E-10
N	5.545E-10	1.983E-09	3.954E-09	4.033E-09	2.502E-09	1.675E-09	1.182E-09	8.677E-10	6.570E-10	5.099E-10	4.038E-10
NNE	1.455E-10	8.731E-10	1.859E-09	1.926E-09	1.203E-09	8.065E-10	5.697E-10	4.185E-10	3.170E-10	2.460E-10	1.948E-10
NE	4.589E-11	2.753E-10	5.862E-10	6.072E-10	3.793E-10	2.543E-10	1.796E-10	1.320E-10	9.994E-11	7.757E-11	6.143E-11
ENE	3.016E-11	1.809E-10	3.852E-10	3.990E-10	2.492E-10	1.671E-10	1.180E-10	8.671E-11	6.568E-11	5.097E-11	4.037E-11
E	2.360E-11	1.416E-10	3.015E-10	3.123E-10	1.951E-10	1.308E-10	9.238E-11	6.786E-11	5.140E-11	3.989E-11	3.159E-11
ESE	1.704E-11	1.023E-10	2.177E-10	2.255E-10	1.409E-10	9.446E-11	6.672E-11	4.901E-11	3.712E-11	2.881E-11	2.282E-11
SE	3.147E-11	1.888E-10	4.020E-10	4.164E-10	2.601E-10	1.744E-10	1.232E-10	9.048E-11	6.853E-11	5.319E-11	4.212E-11
SSE	7.342E-11	4.405E-10	9.379E-10	9.715E-10	6.068E-10	4.069E-10	2.874E-10	2.111E-10	1.599E-10	1.241E-10	9.829E-11
DIRECTION FROM SITE	5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
					DISTANCES IN MILES						
S	2.016E-10	1.215E-10	7.911E-11	4.378E-11	2.727E-11	2.154E-11	1.541E-11	1.155E-11	9.292E-12	7.392E-12	6.034E-12
SSW	1.083E-10	7.415E-11	5.012E-11	2.871E-11	1.868E-11	1.324E-11	9.488E-12	7.127E-12	5.614E-12	4.484E-12	3.660E-12
SW	4.910E-11	4.207E-11	2.997E-11	1.794E-11	1.142E-11	8.076E-12	5.448E-12	4.091E-12	3.181E-12	2.541E-12	2.074E-12
WSW	1.028E-10	5.875E-11	3.762E-11	2.556E-11	1.547E-11	1.037E-11	7.512E-12	5.641E-12	4.386E-12	3.503E-12	2.859E-12
W	1.441E-10	6.529E-11	5.032E-11	2.877E-11	2.188E-11	1.488E-11	1.066E-11	8.007E-12	6.225E-12	4.973E-12	4.059E-12
WNW	3.310E-10	1.553E-10	9.568E-11	5.007E-11	3.611E-11	2.729E-11	2.022E-11	1.519E-11	1.183E-11	9.451E-12	7.714E-12
NW	3.519E-10	1.767E-10	1.140E-10	7.811E-11	4.794E-11	3.203E-11	2.253E-11	1.692E-11	1.322E-11	1.056E-11	8.622E-12
NNW	2.944E-10	1.720E-10	1.208E-10	7.156E-11	4.530E-11	3.005E-11	2.080E-11	1.646E-11	1.304E-11	1.042E-11	8.502E-12
N	3.252E-10	1.540E-10	9.387E-11	4.930E-11	1.087E-10	6.930E-11	4.960E-11	3.725E-11	2.896E-11	2.314E-11	1.888E-11
NNE	1.569E-10	2.739E-10	1.682E-10	8.640E-11	5.255E-11	3.519E-11	2.517E-11	1.885E-11	1.463E-11	1.167E-11	9.512E-12
NE	4.947E-11	7.829E-11	4.808E-11	2.473E-11	1.505E-11	1.008E-11	7.408E-12	5.531E-12	4.301E-12	3.435E-12	2.804E-12
ENE	3.251E-11	3.798E-11	2.763E-11	1.683E-11	1.073E-11	7.105E-12	4.990E-12	3.551E-12	2.764E-12	2.210E-12	1.805E-12
E	2.544E-11	2.685E-11	1.916E-11	1.150E-11	7.302E-12	4.840E-12	3.404E-12	2.501E-12	1.911E-12	1.589E-12	1.294E-12
ESE	1.838E-11	3.436E-11	2.669E-11	1.706E-11	1.099E-11	7.255E-12	5.064E-12	3.686E-12	2.790E-12	2.178E-12	1.741E-12
SE	3.393E-11	1.606E-11	9.789E-12	5.140E-12	3.145E-12	2.188E-12	1.677E-12	5.196E-12	3.963E-12	3.117E-12	2.515E-12
SSE	7.916E-11	1.049E-10	6.558E-11	3.442E-11	2.107E-11	1.409E-11	1.005E-11	7.505E-12	5.810E-12	4.625E-12	3.764E-12

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
					SEGMENT BOUNDARIES IN MILES					
S	1.760E-09	1.252E-09	6.033E-10	3.396E-10	2.377E-10	1.205E-10	4.429E-11	2.062E-11	1.179E-11	7.452E-12
SSW	9.476E-10	6.739E-10	3.249E-10	2.081E-10	1.352E-10	7.107E-11	2.901E-11	1.319E-11	7.225E-12	4.514E-12
SW	4.362E-10	4.492E-10	2.085E-10	1.018E-10	6.053E-11	3.825E-11	1.771E-11	7.915E-12	4.132E-12	2.557E-12
WSW	1.347E-09	1.204E-09	4.570E-10	2.197E-10	1.290E-10	5.914E-11	2.376E-11	1.059E-11	5.697E-12	3.526E-12
W	4.987E-09	1.918E-09	6.383E-10	3.067E-10	1.805E-10	7.614E-11	3.050E-11	1.506E-11	8.087E-12	5.005E-12
WNW	7.758E-09	4.772E-09	1.623E-09	7.315E-10	4.160E-10	1.678E-10	5.400E-11	2.682E-11	1.535E-11	9.513E-12
NW	5.040E-09	4.916E-09	1.689E-09	7.544E-10	4.360E-10	1.878E-10	7.268E-11	3.247E-11	1.711E-11	1.063E-11
NNW	1.925E-09	2.075E-09	1.016E-09	5.637E-10	3.494E-10	1.765E-10	7.084E-11	3.042E-11	1.640E-11	1.048E-11
N	3.551E-09	2.475E-09	1.187E-09	6.611E-10	4.061E-10	1.653E-10	8.559E-11	7.192E-11	3.762E-11	2.329E-11
NNE	1.670E-09	1.187E-09	5.724E-10	3.189E-10	1.959E-10	2.009E-10	8.953E-11	3.581E-11	1.905E-11	1.175E-11
NE	5.265E-10	3.744E-10	1.805E-10	1.006E-10	6.178E-11	5.846E-11	2.561E-11	1.033E-11	5.599E-12	3.458E-12
ENE	3.460E-10	2.460E-10	1.186E-10	6.609E-11	4.060E-11	3.217E-11	1.652E-11	7.226E-12	3.662E-12	2.224E-12
E	2.707E-10	1.925E-10	9.282E-11	5.172E-11	3.177E-11	2.312E-11	1.134E-11	4.922E-12	2.534E-12	1.575E-12
ESE	1.955E-10	1.391E-10	6.703E-11	3.735E-11	2.295E-11	2.740E-11	1.650E-11	7.375E-12	3.738E-12	2.198E-12
SE	3.610E-10	2.567E-10	1.238E-10	6.896E-11	4.237E-11	1.724E-11	5.286E-12	2.239E-12	3.721E-12	3.145E-12
SSE	8.423E-10	5.990E-10	2.888E-10	1.609E-10	9.885E-11	8.170E-11	3.541E-11	1.433E-11	7.586E-12	4.657E-12

ERP ELEVATED STACK RELEASES - JUL-SEP 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION FROM SITE	DIST. (MI)	X/Q (SEC/M3) NO DECAY UNDEPLETED	X/Q (SEC/M3) 2.26 DAY DECAY UNDEPLETED	X/Q (SEC/M3) 8.0 DAY DECAY DEPLETED	D/Q (PER SQ.METER)
A	Site Boundary	S	.80	3.4E-08	3.4E-08	3.4E-08	2.1E-09
A	Site Boundary	SSW	.82	2.2E-08	2.2E-08	2.2E-08	1.1E-09
A	Site Boundary	SW	.97	5.7E-08	5.7E-08	5.7E-08	5.2E-10
A	Site Boundary	WSW	.93	1.2E-07	1.2E-07	1.2E-07	1.3E-09
A	Site Boundary	W	.91	3.8E-07	3.8E-07	3.8E-07	4.4E-09
A	Site Boundary	WNW	.94	4.8E-07	4.8E-07	4.8E-07	9.2E-09
A	Site Boundary	NW	.81	2.4E-07	2.4E-07	2.4E-07	3.3E-09
A	Site Boundary	NNW	.69	3.8E-08	3.8E-08	3.8E-08	1.9E-09
A	Site Boundary	N	.67	3.3E-08	3.3E-08	3.3E-08	3.4E-09
A	Site Boundary	NNE	.60	7.4E-09	7.4E-09	7.4E-09	1.3E-09
A	Site Boundary	NE	.62	3.6E-09	3.6E-09	3.6E-09	4.3E-10
A	Site Boundary	ENE	.59	1.5E-09	1.5E-09	1.5E-09	2.5E-10
A	Site Boundary	E	.53	4.6E-10	4.6E-10	4.6E-10	1.6E-10
A	Site Boundary	ESE	.54	3.9E-10	3.9E-10	3.9E-10	1.2E-10
A	Site Boundary	SE	.65	2.9E-09	2.9E-09	2.9E-09	3.2E-10
A	Site Boundary	SSE	.81	1.9E-08	1.9E-08	1.9E-08	9.9E-10
A	Nearest Res	SW	1.30	1.0E-07	1.0E-07	1.0E-07	7.7E-10
A	Nearest Res	WSW	1.80	1.7E-07	1.7E-07	1.6E-07	8.9E-10
A	Nearest Res	WNW	1.90	3.5E-07	3.5E-07	3.3E-07	3.0E-09
A	Nearest Res	NW	.90	3.5E-07	3.5E-07	3.5E-07	9.0E-09
A	Nearest Res	NNW	1.90	2.3E-07	2.3E-07	2.3E-07	1.7E-09
A	Nearest Cow	NNW	3.50	1.4E-07	1.4E-07	1.3E-07	5.5E-10
A	Nearest Garde	SW	2.20	7.7E-08	7.7E-08	7.6E-08	2.6E-10
A	Nearest Garde	WSW	1.80	1.7E-07	1.7E-07	1.6E-07	8.9E-10
A	Nearest Garde	WNW	1.90	3.5E-07	3.5E-07	3.3E-07	3.0E-09
A	Nearest Garde	NNW	3.00	1.7E-07	1.6E-07	1.6E-07	7.7E-10
A	MAXIMUM CHI/Q	S	1.50	6.8E-08	6.8E-08	6.8E-08	1.3E-09
A	MAXIMUM CHI/Q	SSW	1.50	4.5E-08	4.4E-08	4.4E-08	6.8E-10
A	MAXIMUM CHI/Q	SW	1.50	1.2E-07	1.2E-07	1.2E-07	5.8E-10
A	MAXIMUM CHI/Q	WSW	1.50	2.3E-07	2.3E-07	2.2E-07	1.3E-09
A	MAXIMUM CHI/Q	W	1.00	3.9E-07	3.9E-07	3.8E-07	3.9E-09
A	MAXIMUM CHI/Q	WNW	1.50	5.4E-07	5.4E-07	5.3E-07	5.3E-09
A	MAXIMUM CHI/Q	NW	1.50	7.2E-07	7.1E-07	7.0E-07	5.5E-09
A	MAXIMUM CHI/Q	NNW	1.50	2.4E-07	2.4E-07	2.4E-07	2.7E-09
A	MAXIMUM CHI/Q	N	1.50	1.4E-07	1.3E-07	1.3E-07	2.5E-09
A	MAXIMUM CHI/Q	NNE	1.50	6.4E-08	6.4E-08	6.4E-08	1.2E-09
A	MAXIMUM CHI/Q	NE	1.50	2.5E-08	2.5E-08	2.5E-08	3.8E-10
A	MAXIMUM CHI/Q	ENE	1.50	1.7E-08	1.7E-08	1.7E-08	2.5E-10
A	MAXIMUM CHI/Q	E	1.50	1.3E-08	1.3E-08	1.3E-08	2.0E-10
A	MAXIMUM CHI/Q	ESE	1.50	8.5E-09	8.5E-09	8.4E-09	1.4E-10
A	MAXIMUM CHI/Q	SE	1.50	1.6E-08	1.6E-08	1.6E-08	2.6E-10
A	MAXIMUM CHI/Q	SSE	1.50	3.9E-08	3.9E-08	3.9E-08	6.1E-10

Atmospheric Diffusion Estimates

Elevated Releases

October-December 2019

B306

ERP ELEVATED STACK RELEASES - OCT-DEC 2019
NO DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	2.758E-15	2.241E-09	3.519E-08	6.670E-08	8.129E-08	7.134E-08	5.904E-08	4.877E-08	4.079E-08	4.631E-08	5.126E-08
SSW	6.154E-16	7.954E-10	1.423E-08	2.858E-08	3.672E-08	3.290E-08	2.748E-08	2.864E-08	2.765E-08	2.338E-08	2.005E-08
SW	2.895E-16	3.502E-10	1.509E-08	4.271E-08	7.513E-08	5.231E-08	3.847E-08	2.965E-08	2.371E-08	1.953E-08	1.646E-08
WSW	2.016E-16	3.447E-10	2.172E-08	6.940E-08	1.228E-07	7.749E-08	5.321E-08	3.893E-08	2.987E-08	2.376E-08	1.944E-08
W	7.409E-14	1.428E-08	8.882E-08	1.302E-07	1.333E-07	8.466E-08	5.842E-08	4.293E-08	3.305E-08	2.637E-08	2.164E-08
WNW	1.590E-14	6.846E-09	1.101E-07	1.964E-07	2.097E-07	1.260E-07	8.490E-08	6.429E-08	5.105E-08	4.047E-08	3.308E-08
NW	1.119E-15	1.011E-09	5.840E-08	1.852E-07	3.598E-07	2.141E-07	1.426E-07	1.044E-07	8.026E-08	6.319E-08	5.133E-08
NNW	5.271E-16	4.635E-10	1.459E-08	4.400E-08	1.074E-07	1.336E-07	1.432E-07	1.391E-07	1.307E-07	1.040E-07	8.526E-08
N	1.626E-15	1.091E-09	1.652E-08	3.311E-08	4.843E-08	5.105E-08	4.826E-08	4.299E-08	3.814E-08	3.397E-08	3.045E-08
NNE	6.056E-16	5.625E-10	9.437E-09	1.964E-08	2.907E-08	2.953E-08	2.722E-08	2.443E-08	2.183E-08	1.958E-08	1.768E-08
NE	3.040E-16	3.227E-10	5.756E-09	1.215E-08	1.756E-08	1.728E-08	1.554E-08	1.370E-08	1.208E-08	1.074E-08	9.638E-09
ENE	1.126E-08	6.261E-09	1.641E-08	2.726E-08	3.487E-08	3.251E-08	2.817E-08	2.409E-08	2.070E-08	1.796E-08	1.576E-08
E	7.688E-16	5.317E-10	7.979E-09	1.531E-08	2.020E-08	1.920E-08	1.698E-08	1.482E-08	1.298E-08	1.146E-08	1.022E-08
ESE	2.001E-15	1.384E-09	2.126E-08	4.071E-08	5.129E-08	4.622E-08	3.900E-08	3.268E-08	2.763E-08	2.366E-08	2.053E-08
SE	3.033E-15	2.160E-09	3.223E-08	6.008E-08	7.297E-08	6.437E-08	5.361E-08	4.456E-08	3.747E-08	3.197E-08	2.767E-08
SSE	3.619E-15	3.059E-09	4.853E-08	9.326E-08	1.161E-07	1.029E-07	8.555E-08	7.077E-08	5.916E-08	5.015E-08	4.313E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	4.605E-08	3.163E-08	2.062E-08	1.186E-08	8.313E-09	6.279E-09	4.886E-09	3.955E-09	3.322E-09	2.844E-09	2.464E-09
SSW	1.774E-08	1.092E-08	6.902E-09	3.811E-09	2.555E-09	1.856E-09	1.423E-09	1.138E-09	9.378E-10	7.912E-10	6.798E-10
SW	1.529E-08	1.199E-08	7.923E-09	4.639E-09	3.326E-09	2.552E-09	2.055E-09	1.670E-09	1.396E-09	1.192E-09	1.035E-09
WSW	1.668E-08	9.403E-09	6.153E-09	3.475E-09	2.280E-09	1.647E-09	1.265E-09	1.012E-09	8.342E-10	7.040E-10	6.050E-10
W	1.816E-08	9.646E-09	6.511E-09	3.844E-09	2.623E-09	1.911E-09	1.472E-09	1.181E-09	9.768E-10	8.264E-10	7.119E-10
WNW	2.801E-08	1.556E-08	1.054E-08	6.385E-09	4.362E-09	3.248E-09	2.566E-09	2.095E-09	1.754E-09	1.493E-09	1.293E-09
NW	4.306E-08	2.294E-08	1.509E-08	8.699E-09	5.788E-09	4.227E-09	3.292E-09	2.657E-09	2.205E-09	1.871E-09	1.616E-09
NNW	7.326E-08	4.236E-08	2.778E-08	1.617E-08	1.104E-08	8.228E-09	6.530E-09	5.370E-09	4.568E-09	3.931E-09	3.424E-09
N	2.757E-08	1.881E-08	1.678E-08	1.437E-08	1.216E-08	9.980E-09	7.863E-09	6.411E-09	5.366E-09	4.589E-09	3.992E-09
NNE	2.157E-08	4.137E-08	2.709E-08	1.576E-08	1.077E-08	8.031E-09	6.327E-09	5.176E-09	4.353E-09	3.737E-09	3.262E-09
NE	1.172E-08	3.261E-08	2.160E-08	1.276E-08	8.815E-09	6.628E-09	5.337E-09	4.432E-09	3.776E-09	3.253E-09	2.847E-09
ENE	1.681E-08	2.150E-08	1.409E-08	8.176E-09	5.568E-09	4.138E-09	3.362E-09	2.799E-09	2.342E-09	2.002E-09	1.741E-09
E	1.159E-08	1.894E-08	1.255E-08	7.393E-09	5.084E-09	3.807E-09	3.008E-09	2.466E-09	2.137E-09	1.873E-09	1.634E-09
ESE	2.078E-08	2.226E-08	1.464E-08	8.519E-09	5.805E-09	4.315E-09	3.388E-09	2.763E-09	2.316E-09	1.983E-09	1.726E-09
SE	2.425E-08	1.485E-08	1.159E-08	8.631E-09	6.454E-09	5.178E-09	4.341E-09	3.746E-09	3.152E-09	2.706E-09	2.362E-09
SSE	4.409E-08	4.373E-08	2.789E-08	1.563E-08	1.040E-08	7.603E-09	5.892E-09	4.754E-09	3.950E-09	3.356E-09	2.902E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	4.187E-08	7.363E-08	5.821E-08	4.517E-08	4.786E-08	2.994E-08	1.223E-08	6.264E-09	3.979E-09	2.845E-09
SSW	1.762E-08	3.321E-08	2.939E-08	2.631E-08	2.018E-08	1.065E-08	3.940E-09	1.869E-09	1.143E-09	7.934E-10
SW	2.409E-08	5.778E-08	3.863E-08	2.381E-08	1.694E-08	1.092E-08	4.785E-09	2.560E-09	1.675E-09	1.194E-09
WSW	3.816E-08	9.081E-08	5.397E-08	3.013E-08	1.970E-08	9.576E-09	3.539E-09	1.663E-09	1.016E-09	7.059E-10
W	9.063E-08	1.110E-07	5.922E-08	3.333E-08	2.175E-08	1.014E-08	3.894E-09	1.925E-09	1.186E-09	8.286E-10
WNW	1.255E-07	1.695E-07	8.763E-08	5.080E-08	3.339E-08	1.610E-08	6.410E-09	3.272E-09	2.100E-09	1.496E-09
NW	1.020E-07	2.562E-07	1.464E-07	8.065E-08	5.178E-08	2.392E-08	8.825E-09	4.269E-09	2.666E-09	1.876E-09
NNW	2.452E-08	1.049E-07	1.390E-07	1.229E-07	8.636E-08	4.275E-08	1.647E-08	8.300E-09	5.396E-09	3.932E-09
N	2.047E-08	4.619E-08	4.690E-08	3.794E-08	3.043E-08	1.986E-08	1.392E-08	9.714E-09	6.428E-09	4.598E-09
NNE	1.200E-08	2.718E-08	2.672E-08	2.172E-08	1.968E-08	3.062E-08	1.606E-08	8.080E-09	5.191E-09	3.744E-09
NE	7.390E-09	1.623E-08	1.527E-08	1.203E-08	1.074E-08	2.307E-08	1.297E-08	6.695E-09	4.441E-09	3.258E-09
ENE	1.898E-08	3.213E-08	2.770E-08	2.062E-08	1.680E-08	1.716E-08	8.331E-09	4.209E-09	2.786E-09	2.006E-09
E	9.581E-09	1.867E-08	1.671E-08	1.292E-08	1.109E-08	1.447E-08	7.513E-09	3.828E-09	2.495E-09	1.863E-09
ESE	2.549E-08	4.669E-08	3.840E-08	2.756E-08	2.155E-08	1.854E-08	8.673E-09	4.341E-09	2.771E-09	1.987E-09
SE	3.793E-08	6.628E-08	5.286E-08	3.740E-08	2.768E-08	1.549E-08	8.321E-09	5.184E-09	3.690E-09	2.711E-09
SSE	5.831E-08	1.051E-07	8.426E-08	5.904E-08	4.556E-08	3.677E-08	1.603E-08	7.666E-09	4.773E-09	3.364E-09

ERP ELEVATED STACK RELEASES - OCT-DEC 2019
2.260 DAY DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	2.757E-15	2.239E-09	3.516E-08	6.662E-08	8.112E-08	7.111E-08	5.878E-08	4.849E-08	4.050E-08	4.581E-08	5.043E-08
SSW	6.152E-16	7.948E-10	1.421E-08	2.853E-08	3.661E-08	3.278E-08	2.734E-08	2.848E-08	2.746E-08	2.320E-08	1.987E-08
SW	2.894E-16	3.500E-10	1.506E-08	4.260E-08	7.475E-08	5.193E-08	3.809E-08	2.928E-08	2.336E-08	1.918E-08	1.612E-08
WSW	2.016E-16	3.444E-10	2.168E-08	6.919E-08	1.222E-07	7.690E-08	5.269E-08	3.847E-08	2.945E-08	2.338E-08	1.909E-08
W	7.406E-14	1.426E-08	8.862E-08	1.297E-07	1.323E-07	8.377E-08	5.763E-08	4.222E-08	3.240E-08	2.578E-08	2.108E-08
WNW	1.590E-14	6.840E-09	1.099E-07	1.960E-07	2.088E-07	1.253E-07	8.417E-08	6.354E-08	5.029E-08	3.975E-08	3.240E-08
NW	1.119E-15	1.011E-09	5.834E-08	1.849E-07	3.582E-07	2.128E-07	1.415E-07	1.034E-07	7.936E-08	6.237E-08	5.058E-08
NNW	5.270E-16	4.632E-10	1.458E-08	4.393E-08	1.071E-07	1.330E-07	1.424E-07	1.382E-07	1.297E-07	1.031E-07	8.444E-08
N	1.625E-15	1.091E-09	1.650E-08	3.308E-08	4.835E-08	5.091E-08	4.809E-08	4.279E-08	3.793E-08	3.375E-08	3.022E-08
NNE	6.054E-16	5.622E-10	9.427E-09	1.961E-08	2.899E-08	2.942E-08	2.708E-08	2.427E-08	2.166E-08	1.940E-08	1.749E-08
NE	3.039E-16	3.224E-10	5.749E-09	1.213E-08	1.751E-08	1.722E-08	1.547E-08	1.362E-08	1.200E-08	1.066E-08	9.550E-09
ENE	1.125E-08	6.257E-09	1.639E-08	2.722E-08	3.478E-08	3.239E-08	2.803E-08	2.395E-08	2.056E-08	1.782E-08	1.562E-08
E	7.686E-16	5.314E-10	7.973E-09	1.529E-08	2.017E-08	1.916E-08	1.693E-08	1.476E-08	1.292E-08	1.140E-08	1.016E-08
ESE	2.000E-15	1.383E-09	2.124E-08	4.066E-08	5.118E-08	4.608E-08	3.885E-08	3.253E-08	2.748E-08	2.351E-08	2.038E-08
SE	3.033E-15	2.159E-09	3.221E-08	6.002E-08	7.285E-08	6.422E-08	5.344E-08	4.438E-08	3.729E-08	3.179E-08	2.749E-08
SSE	3.618E-15	3.057E-09	4.848E-08	9.314E-08	1.158E-07	1.026E-07	8.522E-08	7.044E-08	5.883E-08	4.983E-08	4.282E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	4.514E-08	3.044E-08	1.957E-08	1.095E-08	7.464E-09	5.488E-09	4.165E-09	3.292E-09	2.700E-09	2.260E-09	1.916E-09
SSW	1.756E-08	1.075E-08	6.767E-09	3.700E-09	2.456E-09	1.767E-09	1.342E-09	1.063E-09	8.675E-10	7.249E-10	6.169E-10
SW	1.493E-08	1.151E-08	7.502E-09	4.274E-09	2.985E-09	2.233E-09	1.754E-09	1.392E-09	1.138E-09	9.508E-10	8.088E-10
WSW	1.635E-08	9.116E-09	5.903E-09	3.267E-09	2.102E-09	1.489E-09	1.122E-09	8.813E-10	7.138E-10	5.919E-10	5.000E-10
W	1.764E-08	9.226E-09	6.132E-09	3.511E-09	2.326E-09	1.647E-09	1.234E-09	9.650E-10	7.780E-10	6.421E-10	5.400E-10
WNW	2.735E-08	1.495E-08	9.960E-09	5.833E-09	3.859E-09	2.786E-09	2.133E-09	1.691E-09	1.374E-09	1.137E-09	9.585E-10
NW	4.236E-08	2.238E-08	1.459E-08	8.278E-09	5.423E-09	3.902E-09	2.994E-09	2.383E-09	1.951E-09	1.634E-09	1.393E-09
NNW	7.248E-08	4.170E-08	2.721E-08	1.567E-08	1.060E-08	7.823E-09	6.150E-09	5.012E-09	4.224E-09	3.602E-09	3.110E-09
N	2.733E-08	1.854E-08	1.644E-08	1.389E-08	1.161E-08	9.423E-09	7.346E-09	5.928E-09	4.913E-09	4.162E-09	3.586E-09
NNE	2.130E-08	4.050E-08	2.634E-08	1.513E-08	1.021E-08	7.519E-09	5.855E-09	4.736E-09	3.940E-09	3.347E-09	2.892E-09
NE	1.158E-08	3.179E-08	2.088E-08	1.214E-08	8.263E-09	6.125E-09	4.864E-09	3.987E-09	3.352E-09	2.852E-09	2.467E-09
ENE	1.666E-08	2.123E-08	1.386E-08	7.978E-09	5.390E-09	3.975E-09	3.205E-09	2.647E-09	2.197E-09	1.864E-09	1.609E-09
E	1.151E-08	1.876E-08	1.239E-08	7.246E-09	4.950E-09	3.682E-09	2.889E-09	2.353E-09	2.026E-09	1.764E-09	1.528E-09
ESE	2.062E-08	2.200E-08	1.442E-08	8.327E-09	5.632E-09	4.155E-09	3.238E-09	2.621E-09	2.182E-09	1.854E-09	1.603E-09
SE	2.407E-08	1.466E-08	1.137E-08	8.343E-09	6.152E-09	4.866E-09	4.022E-09	3.422E-09	2.844E-09	2.413E-09	2.081E-09
SSE	4.374E-08	4.313E-08	2.738E-08	1.520E-08	1.002E-08	7.250E-09	5.564E-09	4.445E-09	3.658E-09	3.078E-09	2.636E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES FROM THE SITE .5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	4.182E-08	7.345E-08	5.795E-08	4.481E-08	4.710E-08	2.888E-08	1.132E-08	5.486E-09	3.316E-09	2.263E-09
SSW	1.759E-08	3.311E-08	2.925E-08	2.613E-08	2.000E-08	1.050E-08	3.829E-09	1.781E-09	1.068E-09	7.272E-10
SW	2.403E-08	5.746E-08	3.826E-08	2.346E-08	1.659E-08	1.049E-08	4.419E-09	2.242E-09	1.399E-09	9.536E-10
WSW	3.805E-08	9.028E-08	5.346E-08	2.971E-08	1.934E-08	9.295E-09	3.335E-09	1.506E-09	8.863E-10	5.940E-10
W	9.035E-08	1.101E-07	5.844E-08	3.268E-08	2.120E-08	9.720E-09	3.567E-09	1.663E-09	9.707E-10	6.445E-10
WNW	1.253E-07	1.688E-07	8.688E-08	5.006E-08	3.271E-08	1.549E-08	5.873E-09	2.811E-09	1.696E-09	1.141E-09
NW	1.018E-07	2.551E-07	1.453E-07	7.975E-08	5.103E-08	2.336E-08	8.413E-09	3.945E-09	2.393E-09	1.639E-09
NNW	2.448E-08	1.046E-07	1.382E-07	1.220E-07	8.554E-08	4.210E-08	1.598E-08	7.895E-09	5.037E-09	3.604E-09
N	2.045E-08	4.609E-08	4.672E-08	3.772E-08	3.019E-08	1.956E-08	1.345E-08	9.176E-09	5.946E-09	4.171E-09
NNE	1.198E-08	2.709E-08	2.658E-08	2.154E-08	1.946E-08	2.994E-08	1.543E-08	7.570E-09	4.753E-09	3.354E-09
NE	7.378E-09	1.618E-08	1.519E-08	1.195E-08	1.063E-08	2.245E-08	1.236E-08	6.191E-09	3.996E-09	2.857E-09
ENE	1.895E-08	3.204E-08	2.756E-08	2.048E-08	1.666E-08	1.694E-08	8.135E-09	4.044E-09	2.635E-09	1.868E-09
E	9.572E-09	1.863E-08	1.666E-08	1.287E-08	1.103E-08	1.431E-08	7.368E-09	3.703E-09	2.382E-09	1.754E-09
ESE	2.546E-08	4.658E-08	3.825E-08	2.741E-08	2.140E-08	1.832E-08	8.483E-09	4.182E-09	2.630E-09	1.858E-09
SE	3.789E-08	6.616E-08	5.269E-08	3.722E-08	2.750E-08	1.529E-08	8.042E-09	4.871E-09	3.373E-09	2.417E-09
SSE	5.823E-08	1.049E-07	8.394E-08	5.872E-08	4.524E-08	3.626E-08	1.560E-08	7.313E-09	4.465E-09	3.086E-09

ERP ELEVATED STACK RELEASES - OCT-DEC 2019
8.000 DAY DECAY, DEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	2.758E-15	2.240E-09	3.518E-08	6.668E-08	8.051E-08	6.997E-08	5.739E-08	4.701E-08	3.903E-08	4.416E-08	4.885E-08
SSW	6.153E-16	7.953E-10	1.422E-08	2.856E-08	3.635E-08	3.227E-08	2.670E-08	2.763E-08	2.651E-08	2.226E-08	1.897E-08
SW	2.895E-16	3.502E-10	1.508E-08	4.268E-08	7.425E-08	5.123E-08	3.739E-08	2.864E-08	2.279E-08	1.868E-08	1.568E-08
WSW	2.016E-16	3.446E-10	2.171E-08	6.930E-08	1.212E-07	7.562E-08	5.144E-08	3.733E-08	2.844E-08	2.247E-08	1.828E-08
W	7.408E-14	1.427E-08	8.838E-08	1.289E-07	1.308E-07	8.241E-08	5.648E-08	4.125E-08	3.159E-08	2.508E-08	2.049E-08
WNW	1.590E-14	6.844E-09	1.099E-07	1.946E-07	2.048E-07	1.215E-07	8.095E-08	6.082E-08	4.798E-08	3.776E-08	3.065E-08
NW	1.119E-15	1.011E-09	5.838E-08	1.845E-07	3.555E-07	2.099E-07	1.389E-07	1.012E-07	7.750E-08	6.069E-08	4.902E-08
NNW	5.271E-16	4.634E-10	1.459E-08	4.398E-08	1.068E-07	1.325E-07	1.419E-07	1.378E-07	1.295E-07	1.027E-07	8.382E-08
N	1.625E-15	1.091E-09	1.651E-08	3.310E-08	4.808E-08	5.043E-08	4.751E-08	4.219E-08	3.734E-08	3.319E-08	2.969E-08
NNE	6.055E-16	5.624E-10	9.434E-09	1.963E-08	2.884E-08	2.913E-08	2.673E-08	2.390E-08	2.130E-08	1.905E-08	1.716E-08
NE	3.040E-16	3.226E-10	5.754E-09	1.214E-08	1.741E-08	1.702E-08	1.521E-08	1.335E-08	1.173E-08	1.039E-08	9.297E-09
ENE	1.126E-08	6.210E-09	1.630E-08	2.715E-08	3.450E-08	3.192E-08	2.746E-08	2.334E-08	1.995E-08	1.722E-08	1.505E-08
E	7.687E-16	5.316E-10	7.978E-09	1.530E-08	2.003E-08	1.891E-08	1.663E-08	1.445E-08	1.260E-08	1.109E-08	9.864E-09
ESE	2.001E-15	1.384E-09	2.126E-08	4.070E-08	5.081E-08	4.538E-08	3.799E-08	3.160E-08	2.654E-08	2.259E-08	1.950E-08
SE	3.033E-15	2.160E-09	3.222E-08	6.006E-08	7.229E-08	6.320E-08	5.221E-08	4.307E-08	3.598E-08	3.052E-08	2.627E-08
SSE	3.619E-15	3.058E-09	4.852E-08	9.323E-08	1.149E-07	1.010E-07	8.320E-08	6.827E-08	5.664E-08	4.768E-08	4.074E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	4.373E-08	2.948E-08	1.856E-08	9.954E-09	6.468E-09	4.571E-09	3.354E-09	2.575E-09	2.063E-09	1.698E-09	1.418E-09
SSW	1.669E-08	1.001E-08	6.131E-09	3.192E-09	2.020E-09	1.409E-09	1.041E-09	8.054E-10	6.439E-10	5.279E-10	4.416E-10
SW	1.454E-08	1.126E-08	7.181E-09	3.908E-09	2.583E-09	1.847E-09	1.418E-09	1.107E-09	8.919E-10	7.358E-10	6.186E-10
WSW	1.561E-08	8.544E-09	5.409E-09	2.881E-09	1.798E-09	1.246E-09	9.202E-10	7.105E-10	5.669E-10	4.639E-10	3.873E-10
W	1.712E-08	8.925E-09	5.928E-09	3.302E-09	2.103E-09	1.463E-09	1.081E-09	8.354E-10	6.669E-10	5.459E-10	4.556E-10
WNW	2.578E-08	1.390E-08	9.116E-09	5.159E-09	3.269E-09	2.279E-09	1.703E-09	1.329E-09	1.068E-09	8.753E-10	7.313E-10
NW	4.088E-08	2.108E-08	1.339E-08	7.212E-09	4.492E-09	3.102E-09	2.311E-09	1.798E-09	1.444E-09	1.187E-09	9.960E-10
NNW	7.166E-08	4.011E-08	2.535E-08	1.364E-08	8.504E-09	5.868E-09	4.363E-09	3.414E-09	2.799E-09	2.332E-09	1.971E-09
N	2.684E-08	1.821E-08	1.623E-08	1.389E-08	1.143E-08	8.890E-09	6.778E-09	5.367E-09	4.375E-09	3.651E-09	3.103E-09
NNE	2.099E-08	4.015E-08	2.536E-08	1.384E-08	8.903E-09	6.309E-09	4.754E-09	3.736E-09	3.029E-09	2.515E-09	2.127E-09
NE	1.134E-08	3.166E-08	2.022E-08	1.119E-08	7.251E-09	5.169E-09	3.985E-09	3.193E-09	2.634E-09	2.204E-09	1.877E-09
ENE	1.606E-08	2.060E-08	1.306E-08	7.075E-09	4.458E-09	3.103E-09	2.378E-09	1.896E-09	1.537E-09	1.276E-09	1.079E-09
E	1.121E-08	1.841E-08	1.179E-08	6.460E-09	4.086E-09	2.852E-09	2.119E-09	1.644E-09	1.355E-09	1.138E-09	9.601E-10
ESE	1.970E-08	2.113E-08	1.347E-08	7.349E-09	4.660E-09	3.258E-09	2.424E-09	1.883E-09	1.509E-09	1.240E-09	1.038E-09
SE	2.291E-08	1.377E-08	1.065E-08	7.881E-09	5.846E-09	4.664E-09	3.892E-09	3.335E-09	2.743E-09	2.308E-09	1.975E-09
SSE	4.154E-08	4.091E-08	2.520E-08	1.329E-08	8.354E-09	5.814E-09	4.315E-09	3.349E-09	2.684E-09	2.206E-09	1.849E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
	SEGMENT BOUNDARIES IN MILES FROM THE SITE									
S	4.186E-08	7.275E-08	5.660E-08	4.326E-08	4.556E-08	2.779E-08	1.032E-08	4.590E-09	2.603E-09	1.702E-09
SSW	1.761E-08	3.281E-08	2.856E-08	2.521E-08	1.910E-08	9.771E-09	3.324E-09	1.425E-09	8.113E-10	5.303E-10
SW	2.407E-08	5.700E-08	3.758E-08	2.290E-08	1.615E-08	1.018E-08	4.047E-09	1.872E-09	1.114E-09	7.386E-10
WSW	3.811E-08	8.942E-08	5.225E-08	2.871E-08	1.853E-08	8.720E-09	2.961E-09	1.263E-09	7.157E-10	4.661E-10
W	8.992E-08	1.089E-07	5.730E-08	3.187E-08	2.060E-08	9.414E-09	3.353E-09	1.481E-09	8.414E-10	5.483E-10
WNW	1.246E-07	1.655E-07	8.370E-08	4.776E-08	3.095E-08	1.442E-08	5.199E-09	2.313E-09	1.336E-09	8.791E-10
NW	1.017E-07	2.528E-07	1.428E-07	7.787E-08	4.946E-08	2.206E-08	7.375E-09	3.157E-09	1.810E-09	1.192E-09
NNW	2.451E-08	1.043E-07	1.378E-07	1.217E-07	8.490E-08	4.056E-08	1.396E-08	5.969E-09	3.451E-09	2.337E-09
N	2.046E-08	4.580E-08	4.616E-08	3.714E-08	2.967E-08	1.925E-08	1.332E-08	8.723E-09	5.392E-09	3.662E-09
NNE	1.200E-08	2.692E-08	2.624E-08	2.118E-08	1.914E-08	2.932E-08	1.421E-08	6.379E-09	3.758E-09	2.524E-09
NE	7.387E-09	1.607E-08	1.495E-08	1.168E-08	1.038E-08	2.206E-08	1.144E-08	5.251E-09	3.207E-09	2.210E-09
ENE	1.888E-08	3.172E-08	2.700E-08	1.988E-08	1.607E-08	1.624E-08	7.241E-09	3.174E-09	1.897E-09	1.281E-09
E	9.579E-09	1.848E-08	1.637E-08	1.256E-08	1.073E-08	1.387E-08	6.589E-09	2.888E-09	1.670E-09	1.136E-09
ESE	2.548E-08	4.615E-08	3.741E-08	2.649E-08	2.049E-08	1.741E-08	7.513E-09	3.298E-09	1.895E-09	1.245E-09
SE	3.792E-08	6.553E-08	5.149E-08	3.593E-08	2.628E-08	1.442E-08	7.593E-09	4.671E-09	3.269E-09	2.313E-09
SSE	5.829E-08	1.039E-07	8.196E-08	5.655E-08	4.309E-08	3.407E-08	1.374E-08	5.892E-09	3.372E-09	2.215E-09

ERP ELEVATED STACK RELEASES - OCT-DEC 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) AT FIXED POINTS BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	DISTANCES IN MILES .25	.50	.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
S	2.059E-10	1.236E-09	2.631E-09	2.725E-09	1.702E-09	1.141E-09	8.061E-10	5.922E-10	4.485E-10	3.785E-10	3.366E-10
SSW	6.690E-11	4.014E-10	8.546E-10	8.852E-10	5.529E-10	3.707E-10	2.619E-10	1.924E-10	1.839E-10	1.390E-10	1.088E-10
SW	3.148E-11	1.889E-10	4.022E-10	4.166E-10	4.853E-10	2.681E-10	1.678E-10	1.146E-10	8.316E-11	6.302E-11	4.937E-11
WSW	3.279E-11	1.967E-10	4.189E-10	6.893E-10	5.384E-10	2.929E-10	1.812E-10	1.228E-10	8.868E-11	6.702E-11	5.243E-11
W	2.623E-11	1.191E-09	1.187E-09	9.050E-10	4.247E-10	2.311E-10	1.431E-10	9.722E-11	7.041E-11	5.343E-11	4.202E-11
WNW	8.264E-11	4.958E-10	3.414E-09	2.775E-09	1.732E-09	8.772E-10	5.195E-10	3.406E-10	2.479E-10	1.830E-10	1.414E-10
NW	8.920E-11	5.351E-10	1.139E-09	3.016E-09	2.034E-09	1.015E-09	6.005E-10	3.999E-10	2.905E-10	2.260E-10	1.860E-10
NNW	4.198E-11	2.518E-10	5.362E-10	5.554E-10	6.815E-10	3.721E-10	2.330E-10	2.308E-10	1.931E-10	1.752E-10	1.675E-10
N	1.062E-10	6.374E-10	1.357E-09	1.406E-09	8.781E-10	5.888E-10	4.159E-10	3.055E-10	2.314E-10	1.796E-10	1.422E-10
NNE	4.985E-11	2.990E-10	6.367E-10	6.596E-10	4.120E-10	2.762E-10	1.951E-10	1.433E-10	1.086E-10	8.426E-11	6.673E-11
NE	2.886E-11	1.731E-10	3.686E-10	3.818E-10	2.385E-10	1.599E-10	1.130E-10	8.298E-11	6.285E-11	4.878E-11	3.863E-11
ENE	5.783E-10	7.813E-10	1.124E-09	1.041E-09	6.164E-10	4.065E-10	2.849E-10	2.085E-10	1.576E-10	1.222E-10	9.680E-11
E	5.116E-11	3.069E-10	6.535E-10	6.769E-10	4.228E-10	2.835E-10	2.003E-10	1.471E-10	1.114E-10	8.647E-11	6.848E-11
ESE	1.377E-10	8.263E-10	1.759E-09	1.822E-09	1.138E-09	7.633E-10	5.391E-10	3.960E-10	3.000E-10	2.328E-10	1.844E-10
SE	2.046E-10	1.228E-09	2.614E-09	2.708E-09	1.691E-09	1.134E-09	8.010E-10	5.884E-10	4.457E-10	3.459E-10	2.739E-10
SSE	2.742E-10	1.645E-09	3.502E-09	3.628E-09	2.266E-09	1.519E-09	1.073E-09	7.883E-10	5.971E-10	4.634E-10	3.670E-10

DIRECTION FROM SITE	DISTANCES IN MILES 5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
S	2.706E-10	1.444E-10	9.018E-11	4.785E-11	2.946E-11	2.623E-11	1.874E-11	1.402E-11	1.121E-11	8.855E-12	7.226E-12
SSW	8.774E-11	4.893E-11	3.104E-11	1.674E-11	1.187E-11	8.802E-12	6.308E-12	4.737E-12	3.707E-12	2.962E-12	2.417E-12
SW	4.062E-11	3.047E-11	2.107E-11	1.231E-11	7.786E-12	5.604E-12	3.963E-12	2.976E-12	2.314E-12	1.848E-12	1.509E-12
WSW	4.214E-11	2.762E-11	1.854E-11	1.167E-11	7.059E-12	4.728E-12	3.584E-12	2.691E-12	2.093E-12	1.672E-12	1.364E-12
W	3.399E-11	1.565E-11	1.565E-11	1.070E-11	6.765E-12	4.724E-12	3.385E-12	2.542E-12	1.976E-12	1.579E-12	1.288E-12
WNW	1.143E-10	5.417E-11	3.382E-11	1.787E-11	1.210E-11	9.196E-12	7.031E-12	5.270E-12	4.169E-12	3.330E-12	2.718E-12
NW	1.609E-10	9.798E-11	7.017E-11	4.394E-11	2.688E-11	1.797E-11	1.262E-11	9.468E-12	7.433E-12	5.938E-12	4.846E-12
NNW	1.651E-10	1.391E-10	1.127E-10	7.411E-11	4.803E-11	3.165E-11	1.977E-11	1.344E-11	1.013E-11	8.087E-12	6.602E-12
N	1.146E-10	5.424E-11	3.305E-11	1.737E-11	8.366E-11	4.561E-11	3.257E-11	2.444E-11	1.900E-11	1.518E-11	1.239E-11
NNE	5.374E-11	1.842E-10	1.146E-10	5.973E-11	3.649E-11	2.441E-11	1.742E-11	1.302E-11	1.009E-11	8.031E-12	6.537E-12
NE	3.111E-11	1.143E-10	7.142E-11	3.743E-11	2.290E-11	1.531E-11	1.081E-11	8.050E-12	6.252E-12	5.014E-12	4.092E-12
ENE	7.799E-11	9.741E-11	7.182E-11	4.423E-11	2.829E-11	1.875E-11	1.317E-11	9.006E-12	7.009E-12	5.605E-12	4.580E-12
E	5.515E-11	8.346E-11	6.323E-11	3.971E-11	2.548E-11	1.684E-11	1.178E-11	8.595E-12	6.523E-12	5.009E-12	4.076E-12
ESE	1.485E-10	1.357E-10	9.376E-11	5.477E-11	3.457E-11	2.295E-11	1.620E-11	1.195E-11	9.170E-12	7.249E-12	5.870E-12
SE	2.206E-10	1.045E-10	6.365E-11	3.344E-11	2.032E-11	1.392E-11	1.034E-11	1.761E-11	1.357E-11	1.078E-11	8.773E-12
SSE	2.956E-10	2.950E-10	1.812E-10	9.324E-11	5.674E-11	3.800E-11	2.717E-11	2.036E-11	1.580E-11	1.261E-11	1.028E-11

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES .5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	2.363E-09	1.680E-09	8.099E-10	4.629E-10	3.246E-10	1.484E-10	4.908E-11	2.410E-11	1.430E-11	8.948E-12
SSW	7.675E-10	5.458E-10	2.631E-10	1.692E-10	1.099E-10	4.960E-11	1.776E-11	8.624E-12	4.794E-12	2.981E-12
SW	3.612E-10	3.735E-10	1.733E-10	8.448E-11	5.017E-11	2.855E-11	1.225E-11	5.530E-12	3.006E-12	1.860E-12
WSW	4.897E-10	4.628E-10	1.876E-10	9.019E-11	5.294E-11	2.681E-11	1.115E-11	4.892E-12	2.718E-12	1.683E-12
W	1.063E-09	4.454E-10	1.482E-10	7.160E-11	4.243E-11	1.972E-11	1.005E-11	4.733E-12	2.567E-12	1.589E-12
WNW	2.481E-09	1.584E-09	5.433E-10	2.497E-10	1.437E-10	5.850E-11	1.885E-11	9.103E-12	5.354E-12	3.352E-12
NW	1.839E-09	1.799E-09	6.308E-10	2.972E-10	1.885E-10	9.960E-11	4.219E-11	1.821E-11	9.594E-12	5.977E-12
NNW	4.815E-10	5.160E-10	2.692E-10	1.970E-10	1.689E-10	1.331E-10	7.109E-11	3.126E-11	1.399E-11	8.142E-12
N	1.219E-09	8.668E-10	4.179E-10	2.328E-10	1.431E-10	5.822E-11	5.032E-11	5.054E-11	2.469E-11	1.528E-11
NNE	5.718E-10	4.067E-10	1.960E-10	1.092E-10	6.711E-11	1.243E-10	6.159E-11	2.483E-11	1.316E-11	8.086E-12
NE	3.311E-10	2.354E-10	1.135E-10	6.324E-11	3.885E-11	7.676E-11	3.853E-11	1.553E-11	8.152E-12	5.039E-12
ENE	1.011E-09	6.174E-10	2.868E-10	1.587E-10	9.737E-11	8.172E-11	4.328E-11	1.906E-11	9.436E-12	5.642E-12
E	5.869E-10	4.174E-10	2.012E-10	1.121E-10	6.888E-11	6.818E-11	3.861E-11	1.712E-11	8.715E-12	5.112E-12
ESE	1.580E-09	1.124E-09	5.417E-10	3.018E-10	1.854E-10	1.199E-10	5.446E-11	2.335E-11	1.211E-11	7.307E-12
SE	2.348E-09	1.669E-09	8.048E-10	4.484E-10	2.755E-10	1.121E-10	3.432E-11	1.419E-11	1.399E-11	1.086E-11
SSE	3.145E-09	2.237E-09	1.078E-09	6.008E-10	3.691E-10	2.446E-10	9.657E-11	3.867E-11	2.057E-11	1.269E-11

ERP ELEVATED STACK RELEASES - OCT-DEC 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION FROM SITE	DIST. (MI)	X/Q (SEC/M3) NO DECAY UNDEPLETED	X/Q (SEC/M3) 2.26 DAY DECAY UNDEPLETED	X/Q (SEC/M3) 8.0 DAY DECAY DEPLETED	D/Q (PER SQ.METER)
A	Site Boundary	S	.80	4.3E-08	4.3E-08	4.3E-08	2.8E-09
A	Site Boundary	SSW	.82	1.9E-08	1.9E-08	1.9E-08	9.1E-10
A	Site Boundary	SW	.97	4.0E-08	4.0E-08	4.0E-08	4.3E-10
A	Site Boundary	WSW	.93	5.5E-08	5.5E-08	5.5E-08	6.4E-10
A	Site Boundary	W	.91	1.2E-07	1.2E-07	1.2E-07	9.1E-10
A	Site Boundary	WNW	.94	1.8E-07	1.8E-07	1.8E-07	3.1E-09
A	Site Boundary	NW	.81	8.7E-08	8.7E-08	8.7E-08	1.2E-09
A	Site Boundary	NNW	.69	8.5E-09	8.5E-09	8.5E-09	4.6E-10
A	Site Boundary	N	.67	1.0E-08	1.0E-08	1.0E-08	1.1E-09
A	Site Boundary	NNE	.60	2.7E-09	2.7E-09	2.7E-09	4.3E-10
A	Site Boundary	NE	.62	2.1E-09	2.1E-09	2.1E-09	2.7E-10
A	Site Boundary	ENE	.59	7.6E-09	7.6E-09	7.6E-09	8.9E-10
A	Site Boundary	E	.53	8.4E-10	8.4E-10	8.4E-10	3.4E-10
A	Site Boundary	ESE	.54	2.7E-09	2.7E-09	2.7E-09	9.6E-10
A	Site Boundary	SE	.65	1.6E-08	1.6E-08	1.6E-08	2.1E-09
A	Site Boundary	SSE	.81	6.2E-08	6.2E-08	6.2E-08	3.7E-09
A	Nearest Res	SW	1.30	6.7E-08	6.7E-08	6.7E-08	6.4E-10
A	Nearest Res	WSW	1.80	9.2E-08	9.2E-08	9.0E-08	3.7E-10
A	Nearest Res	WNW	1.90	1.4E-07	1.4E-07	1.3E-07	9.9E-10
A	Nearest Res	NW	.90	1.3E-07	1.3E-07	1.3E-07	3.3E-09
A	Nearest Res	NNW	1.90	1.3E-07	1.3E-07	1.3E-07	4.2E-10
A	Nearest Cow	NNW	3.50	1.3E-07	1.3E-07	1.3E-07	1.9E-10
A	Nearest Garde	SW	2.20	4.6E-08	4.6E-08	4.5E-08	2.2E-10
A	Nearest Garde	WSW	1.80	9.2E-08	9.2E-08	9.0E-08	3.7E-10
A	Nearest Garde	WNW	1.90	1.4E-07	1.4E-07	1.3E-07	9.9E-10
A	Nearest Garde	NNW	3.00	1.4E-07	1.4E-07	1.4E-07	2.3E-10
A	MAXIMUM CHI/Q	S	1.50	8.1E-08	8.1E-08	8.1E-08	1.7E-09
A	MAXIMUM CHI/Q	SSW	1.50	3.7E-08	3.7E-08	3.6E-08	5.5E-10
A	MAXIMUM CHI/Q	SW	1.50	7.5E-08	7.5E-08	7.4E-08	4.9E-10
A	MAXIMUM CHI/Q	WSW	1.50	1.2E-07	1.2E-07	1.2E-07	5.4E-10
A	MAXIMUM CHI/Q	W	1.50	1.3E-07	1.3E-07	1.3E-07	4.2E-10
A	MAXIMUM CHI/Q	WNW	1.50	2.1E-07	2.1E-07	2.0E-07	1.7E-09
A	MAXIMUM CHI/Q	NW	1.50	3.6E-07	3.6E-07	3.6E-07	2.0E-09
A	MAXIMUM CHI/Q	NNW	2.50	1.4E-07	1.4E-07	1.4E-07	2.3E-10
A	MAXIMUM CHI/Q	N	2.00	5.1E-08	5.1E-08	5.0E-08	5.9E-10
A	MAXIMUM CHI/Q	NNE	7.50	4.1E-08	4.1E-08	4.0E-08	1.8E-10
A	MAXIMUM CHI/Q	NE	7.50	3.3E-08	3.2E-08	3.2E-08	1.1E-10
A	MAXIMUM CHI/Q	ENE	1.50	3.5E-08	3.5E-08	3.4E-08	6.2E-10
A	MAXIMUM CHI/Q	E	1.50	2.0E-08	2.0E-08	2.0E-08	4.2E-10
A	MAXIMUM CHI/Q	ESE	1.50	5.1E-08	5.1E-08	5.1E-08	1.1E-09
A	MAXIMUM CHI/Q	SE	1.50	7.3E-08	7.3E-08	7.2E-08	1.7E-09
A	MAXIMUM CHI/Q	SSE	1.50	1.2E-07	1.2E-07	1.1E-07	2.3E-09

Atmospheric Diffusion Estimates

Elevated Releases

July-December 2019

B312

ERP ELEVATED STACK RELEASES - JUL-DEC 2019
NO DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	2.352E-15	1.988E-09	3.165E-08	6.060E-08	7.482E-08	6.606E-08	5.482E-08	4.533E-08	3.792E-08	4.280E-08	4.650E-08
SSW	7.525E-16	8.626E-10	1.525E-08	3.086E-08	4.063E-08	3.720E-08	3.160E-08	3.417E-08	3.426E-08	2.950E-08	2.573E-08
SW	2.733E-16	3.875E-10	1.760E-08	5.194E-08	9.969E-08	7.053E-08	5.217E-08	4.027E-08	3.219E-08	2.647E-08	2.226E-08
WSW	4.096E-16	6.682E-10	3.726E-08	1.085E-07	1.754E-07	1.095E-07	7.492E-08	5.480E-08	4.207E-08	3.351E-08	2.747E-08
W	2.536E-13	3.922E-08	2.046E-07	2.578E-07	2.237E-07	1.373E-07	9.313E-08	6.771E-08	5.178E-08	4.112E-08	3.362E-08
WNW	3.474E-14	1.353E-08	2.056E-07	3.595E-07	3.760E-07	2.214E-07	1.464E-07	1.081E-07	8.364E-08	6.552E-08	5.300E-08
NW	1.969E-15	1.986E-09	1.129E-07	3.261E-07	5.412E-07	3.183E-07	2.107E-07	1.535E-07	1.177E-07	9.255E-08	7.509E-08
NNW	1.172E-15	1.252E-09	3.871E-08	9.940E-08	1.753E-07	1.807E-07	1.703E-07	1.519E-07	1.340E-07	1.055E-07	8.579E-08
N	1.209E-11	2.808E-09	3.534E-08	6.848E-08	9.180E-08	8.979E-08	8.031E-08	6.885E-08	5.927E-08	5.150E-08	4.522E-08
NNE	1.325E-15	1.083E-09	1.715E-08	3.404E-08	4.657E-08	4.482E-08	3.975E-08	3.463E-08	3.022E-08	2.658E-08	2.360E-08
NE	3.977E-16	4.399E-10	7.628E-09	1.559E-08	2.149E-08	2.056E-08	1.811E-08	1.568E-08	1.362E-08	1.193E-08	1.056E-08
ENE	5.628E-09	3.312E-09	1.136E-08	2.001E-08	2.598E-08	2.423E-08	2.096E-08	1.791E-08	1.537E-08	1.333E-08	1.169E-08
E	5.096E-16	4.081E-10	6.440E-09	1.260E-08	1.687E-08	1.611E-08	1.426E-08	1.242E-08	1.084E-08	9.539E-09	8.471E-09
ESE	1.118E-15	7.912E-10	1.218E-08	2.341E-08	2.993E-08	2.738E-08	2.341E-08	1.984E-08	1.693E-08	1.461E-08	1.276E-08
SE	1.691E-15	1.253E-09	1.913E-08	3.619E-08	4.465E-08	3.968E-08	3.319E-08	2.767E-08	2.333E-08	1.995E-08	1.730E-08
SSE	2.210E-15	1.971E-09	3.170E-08	6.145E-08	7.748E-08	6.939E-08	5.815E-08	4.842E-08	4.071E-08	3.468E-08	2.995E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	4.139E-08	2.703E-08	1.747E-08	9.938E-09	6.860E-09	5.125E-09	3.972E-09	3.205E-09	2.679E-09	2.285E-09	1.975E-09
SSW	2.325E-08	1.580E-08	1.013E-08	5.707E-09	3.942E-09	2.916E-09	2.254E-09	1.815E-09	1.507E-09	1.278E-09	1.104E-09
SW	2.048E-08	1.474E-08	9.631E-09	5.554E-09	3.881E-09	2.923E-09	2.317E-09	1.875E-09	1.562E-09	1.330E-09	1.152E-09
WSW	2.368E-08	1.368E-08	9.069E-09	5.202E-09	3.431E-09	2.488E-09	1.917E-09	1.538E-09	1.271E-09	1.075E-09	9.259E-10
W	2.814E-08	1.484E-08	1.003E-08	5.961E-09	4.099E-09	2.985E-09	2.298E-09	1.844E-09	1.525E-09	1.290E-09	1.111E-09
WNW	4.428E-08	2.332E-08	1.522E-08	8.739E-09	5.821E-09	4.252E-09	3.298E-09	2.657E-09	2.201E-09	1.861E-09	1.603E-09
NW	6.294E-08	3.352E-08	2.209E-08	1.279E-08	8.504E-09	6.206E-09	4.846E-09	3.916E-09	3.249E-09	2.756E-09	2.379E-09
NNW	7.275E-08	4.020E-08	2.601E-08	1.486E-08	1.002E-08	7.396E-09	5.809E-09	4.738E-09	3.993E-09	3.416E-09	2.964E-09
N	4.020E-08	2.571E-08	2.121E-08	1.625E-08	1.280E-08	1.012E-08	7.903E-09	6.405E-09	5.336E-09	4.544E-09	3.937E-09
NNE	2.714E-08	3.986E-08	2.586E-08	1.486E-08	1.006E-08	7.453E-09	5.839E-09	4.754E-09	3.982E-09	3.407E-09	2.964E-09
NE	1.203E-08	2.192E-08	1.435E-08	8.354E-09	5.711E-09	4.262E-09	3.400E-09	2.804E-09	2.373E-09	2.037E-09	1.777E-09
ENE	1.246E-08	1.536E-08	1.003E-08	5.789E-09	3.928E-09	2.911E-09	2.348E-09	1.944E-09	1.624E-09	1.387E-09	1.204E-09
E	9.386E-09	1.297E-08	8.523E-09	4.963E-09	3.387E-09	2.522E-09	1.983E-09	1.619E-09	1.391E-09	1.212E-09	1.054E-09
ESE	1.318E-08	1.501E-08	9.915E-09	5.801E-09	3.967E-09	2.956E-09	2.325E-09	1.899E-09	1.595E-09	1.367E-09	1.191E-09
SE	1.520E-08	9.386E-09	7.431E-09	5.676E-09	4.285E-09	3.460E-09	2.913E-09	2.520E-09	2.122E-09	1.824E-09	1.593E-09
SSE	3.114E-08	3.235E-08	2.067E-08	1.161E-08	7.741E-09	5.663E-09	4.393E-09	3.547E-09	2.949E-09	2.507E-09	2.169E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	3.793E-08	6.777E-08	5.402E-08	4.189E-08	4.351E-08	2.597E-08	1.024E-08	5.127E-09	3.224E-09	2.287E-09
SSW	1.899E-08	3.693E-08	3.412E-08	3.242E-08	2.593E-08	1.494E-08	5.906E-09	2.925E-09	1.823E-09	1.281E-09
SW	2.904E-08	7.612E-08	5.230E-08	3.232E-08	2.285E-08	1.374E-08	5.717E-09	2.936E-09	1.882E-09	1.333E-09
WSW	6.080E-08	1.313E-07	7.609E-08	4.245E-08	2.786E-08	1.385E-08	5.274E-09	2.511E-09	1.545E-09	1.078E-09
W	1.915E-07	1.929E-07	9.475E-08	5.227E-08	3.381E-08	1.566E-08	6.037E-09	3.007E-09	1.852E-09	1.293E-09
WNW	2.313E-07	3.036E-07	1.511E-07	8.371E-08	5.348E-08	2.438E-08	8.882E-09	4.289E-09	2.667E-09	1.866E-09
NW	1.830E-07	3.943E-07	2.165E-07	1.184E-07	7.576E-08	3.498E-08	1.295E-08	6.275E-09	3.927E-09	2.762E-09
NNW	5.736E-08	1.608E-07	1.657E-07	1.283E-07	8.681E-08	4.113E-08	1.519E-08	7.462E-09	4.760E-09	3.420E-09
N	4.284E-08	8.572E-08	7.825E-08	5.905E-08	4.522E-08	2.693E-08	1.582E-08	9.947E-09	6.426E-09	4.554E-09
NNE	2.109E-08	4.301E-08	3.905E-08	3.009E-08	2.579E-08	3.081E-08	1.517E-08	7.503E-09	4.770E-09	3.413E-09
NE	9.569E-09	1.977E-08	1.779E-08	1.357E-08	1.151E-08	1.636E-08	8.513E-09	4.303E-09	2.810E-09	2.041E-09
ENE	1.341E-08	2.387E-08	2.061E-08	1.532E-08	1.246E-08	1.234E-08	5.903E-09	2.957E-09	1.938E-09	1.390E-09
E	7.837E-09	1.558E-08	1.402E-08	1.080E-08	9.126E-09	1.020E-08	5.054E-09	2.537E-09	1.636E-09	1.207E-09
ESE	1.464E-08	2.735E-08	2.304E-08	1.688E-08	1.346E-08	1.234E-08	5.900E-09	2.973E-09	1.905E-09	1.369E-09
SE	2.274E-08	4.056E-08	3.271E-08	2.328E-08	1.731E-08	9.808E-09	5.448E-09	3.461E-09	2.481E-09	1.826E-09
SSE	3.832E-08	7.032E-08	5.726E-08	4.061E-08	3.179E-08	2.689E-08	1.190E-08	5.709E-09	3.561E-09	2.512E-09

ERP ELEVATED STACK RELEASES - JUL-DEC 2019
2.260 DAY DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	2.352E-15	1.987E-09	3.162E-08	6.052E-08	7.466E-08	6.586E-08	5.460E-08	4.510E-08	3.769E-08	4.245E-08	4.599E-08
SSW	7.523E-16	8.620E-10	1.523E-08	3.080E-08	4.051E-08	3.705E-08	3.144E-08	3.396E-08	3.401E-08	2.925E-08	2.548E-08
SW	2.732E-16	3.872E-10	1.757E-08	5.180E-08	9.919E-08	7.002E-08	5.168E-08	3.981E-08	3.176E-08	2.605E-08	2.187E-08
WSW	4.095E-16	6.677E-10	3.720E-08	1.083E-07	1.747E-07	1.088E-07	7.434E-08	5.427E-08	4.159E-08	3.306E-08	2.705E-08
W	2.535E-13	3.918E-08	2.043E-07	2.572E-07	2.227E-07	1.365E-07	9.237E-08	6.702E-08	5.115E-08	4.053E-08	3.307E-08
WNW	3.473E-14	1.352E-08	2.053E-07	3.589E-07	3.748E-07	2.203E-07	1.456E-07	1.072E-07	8.284E-08	6.478E-08	5.232E-08
NW	1.969E-15	1.984E-09	1.128E-07	3.255E-07	5.391E-07	3.166E-07	2.093E-07	1.523E-07	1.166E-07	9.148E-08	7.411E-08
NNW	1.171E-15	1.252E-09	3.867E-08	9.924E-08	1.749E-07	1.800E-07	1.695E-07	1.511E-07	1.331E-07	1.047E-07	8.508E-08
N	1.209E-11	2.807E-09	3.531E-08	6.840E-08	9.162E-08	8.955E-08	8.004E-08	6.856E-08	5.898E-08	5.121E-08	4.493E-08
NNE	1.324E-15	1.082E-09	1.713E-08	3.400E-08	4.647E-08	4.469E-08	3.960E-08	3.448E-08	3.006E-08	2.641E-08	2.343E-08
NE	3.976E-16	4.395E-10	7.619E-09	1.556E-08	2.144E-08	2.049E-08	1.803E-08	1.560E-08	1.354E-08	1.184E-08	1.047E-08
ENE	5.626E-09	3.310E-09	1.134E-08	1.997E-08	2.591E-08	2.413E-08	2.086E-08	1.780E-08	1.527E-08	1.323E-08	1.159E-08
E	5.095E-16	4.079E-10	6.434E-09	1.258E-08	1.683E-08	1.606E-08	1.420E-08	1.235E-08	1.077E-08	9.466E-09	8.397E-09
ESE	1.118E-15	7.908E-10	1.217E-08	2.338E-08	2.986E-08	2.729E-08	2.331E-08	1.973E-08	1.682E-08	1.450E-08	1.266E-08
SE	1.691E-15	1.253E-09	1.911E-08	3.614E-08	4.457E-08	3.957E-08	3.307E-08	2.755E-08	2.321E-08	1.983E-08	1.718E-08
SSE	2.210E-15	1.969E-09	3.167E-08	6.136E-08	7.730E-08	6.917E-08	5.792E-08	4.819E-08	4.047E-08	3.445E-08	2.973E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	4.085E-08	2.637E-08	1.690E-08	9.441E-09	6.397E-09	4.692E-09	3.575E-09	2.837E-09	2.332E-09	1.957E-09	1.665E-09
SSW	2.299E-08	1.548E-08	9.857E-09	5.474E-09	3.721E-09	2.711E-09	2.066E-09	1.639E-09	1.341E-09	1.122E-09	9.549E-10
SW	2.007E-08	1.429E-08	9.241E-09	5.222E-09	3.578E-09	2.643E-09	2.056E-09	1.634E-09	1.336E-09	1.118E-09	9.519E-10
WSW	2.327E-08	1.329E-08	8.713E-09	4.888E-09	3.158E-09	2.245E-09	1.695E-09	1.333E-09	1.081E-09	8.974E-10	7.587E-10
W	2.762E-08	1.441E-08	9.625E-09	5.583E-09	3.745E-09	2.666E-09	2.008E-09	1.577E-09	1.277E-09	1.058E-09	8.933E-10
WNW	4.364E-08	2.278E-08	1.472E-08	8.295E-09	5.424E-09	3.890E-09	2.962E-09	2.344E-09	1.907E-09	1.585E-09	1.342E-09
NW	6.202E-08	3.276E-08	2.141E-08	1.220E-08	7.984E-09	5.738E-09	4.411E-09	3.510E-09	2.870E-09	2.399E-09	2.042E-09
NNW	7.207E-08	3.964E-08	2.553E-08	1.446E-08	9.659E-09	7.064E-09	5.500E-09	4.446E-09	3.714E-09	3.150E-09	2.709E-09
N	3.991E-08	2.542E-08	2.088E-08	1.584E-08	1.235E-08	9.671E-09	7.490E-09	6.017E-09	4.971E-09	4.198E-09	3.608E-09
NNE	2.691E-08	3.921E-08	2.530E-08	1.438E-08	9.634E-09	7.062E-09	5.477E-09	4.415E-09	3.662E-09	3.103E-09	2.675E-09
NE	1.191E-08	2.152E-08	1.401E-08	8.060E-09	5.448E-09	4.020E-09	3.173E-09	2.589E-09	2.169E-09	1.843E-09	1.592E-09
ENE	1.234E-08	1.517E-08	9.862E-09	5.648E-09	3.802E-09	2.796E-09	2.237E-09	1.838E-09	1.524E-09	1.291E-09	1.113E-09
E	9.291E-09	1.278E-08	8.358E-09	4.821E-09	3.260E-09	2.405E-09	1.875E-09	1.518E-09	1.293E-09	1.117E-09	9.641E-10
ESE	1.305E-08	1.479E-08	9.726E-09	5.638E-09	3.820E-09	2.821E-09	2.200E-09	1.781E-09	1.483E-09	1.260E-09	1.089E-09
SE	1.508E-08	9.272E-09	7.304E-09	5.518E-09	4.122E-09	3.292E-09	2.741E-09	2.345E-09	1.955E-09	1.664E-09	1.439E-09
SSE	3.088E-08	3.186E-08	2.024E-08	1.125E-08	7.422E-09	5.373E-09	4.124E-09	3.295E-09	2.711E-09	2.281E-09	1.954E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	3.788E-08	6.761E-08	5.381E-08	4.162E-08	4.304E-08	2.538E-08	9.745E-09	4.700E-09	2.856E-09	1.960E-09
SSW	1.896E-08	3.682E-08	3.394E-08	3.218E-08	2.567E-08	1.465E-08	5.669E-09	2.722E-09	1.648E-09	1.125E-09
SW	2.897E-08	7.569E-08	5.182E-08	3.189E-08	2.244E-08	1.333E-08	5.385E-09	2.658E-09	1.641E-09	1.121E-09
WSW	6.067E-08	1.307E-07	7.551E-08	4.196E-08	2.743E-08	1.347E-08	4.969E-09	2.268E-09	1.341E-09	9.005E-10
W	1.911E-07	1.921E-07	9.399E-08	5.164E-08	3.326E-08	1.522E-08	5.664E-09	2.690E-09	1.586E-09	1.062E-09
WNW	2.310E-07	3.026E-07	1.502E-07	8.293E-08	5.280E-08	2.383E-08	8.448E-09	3.928E-09	2.354E-09	1.591E-09
NW	1.827E-07	3.928E-07	2.151E-07	1.172E-07	7.478E-08	3.422E-08	1.237E-08	5.806E-09	3.523E-09	2.406E-09
NNW	5.727E-08	1.604E-07	1.649E-07	1.274E-07	8.609E-08	4.058E-08	1.479E-08	7.130E-09	4.468E-09	3.154E-09
N	4.279E-08	8.554E-08	7.798E-08	5.876E-08	4.493E-08	2.662E-08	1.541E-08	9.514E-09	6.039E-09	4.209E-09
NNE	2.106E-08	4.291E-08	3.891E-08	2.993E-08	2.560E-08	3.030E-08	1.470E-08	7.114E-09	4.431E-09	3.110E-09
NE	9.555E-09	1.971E-08	1.771E-08	1.348E-08	1.141E-08	1.605E-08	8.222E-09	4.062E-09	2.596E-09	1.846E-09
ENE	1.339E-08	2.380E-08	2.051E-08	1.522E-08	1.235E-08	1.218E-08	5.764E-09	2.841E-09	1.832E-09	1.294E-09
E	7.828E-09	1.555E-08	1.396E-08	1.073E-08	9.045E-09	1.004E-08	4.913E-09	2.421E-09	1.534E-09	1.113E-09
ESE	1.462E-08	2.728E-08	2.294E-08	1.677E-08	1.335E-08	1.215E-08	5.739E-09	2.839E-09	1.787E-09	1.263E-09
SE	2.271E-08	4.047E-08	3.260E-08	2.316E-08	1.719E-08	9.688E-09	5.294E-09	3.293E-09	2.310E-09	1.667E-09
SSE	3.827E-08	7.014E-08	5.703E-08	4.038E-08	3.155E-08	2.648E-08	1.155E-08	5.420E-09	3.310E-09	2.287E-09

ERP ELEVATED STACK RELEASES - JUL-DEC 2019
8.000 DAY DECAY, DEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	2.352E-15	1.988E-09	3.164E-08	6.058E-08	7.410E-08	6.481E-08	5.331E-08	4.372E-08	3.629E-08	4.084E-08	4.434E-08
SSW	7.524E-16	8.625E-10	1.524E-08	3.084E-08	4.024E-08	3.651E-08	3.075E-08	3.306E-08	3.300E-08	2.826E-08	2.453E-08
SW	2.732E-16	3.874E-10	1.759E-08	5.190E-08	9.864E-08	6.922E-08	5.088E-08	3.906E-08	3.108E-08	2.545E-08	2.133E-08
WSW	4.096E-16	6.681E-10	3.724E-08	1.084E-07	1.730E-07	1.068E-07	7.240E-08	5.253E-08	4.006E-08	3.171E-08	2.584E-08
W	2.536E-13	3.921E-08	2.034E-07	2.544E-07	2.182E-07	1.326E-07	8.911E-08	6.431E-08	4.885E-08	3.856E-08	3.136E-08
WNW	3.474E-14	1.353E-08	2.053E-07	3.560E-07	3.672E-07	2.133E-07	1.395E-07	1.021E-07	7.842E-08	6.095E-08	4.894E-08
NW	1.969E-15	1.985E-09	1.129E-07	3.246E-07	5.332E-07	3.105E-07	2.039E-07	1.477E-07	1.126E-07	8.800E-08	7.095E-08
NNW	1.172E-15	1.252E-09	3.870E-08	9.935E-08	1.739E-07	1.781E-07	1.674E-07	1.490E-07	1.312E-07	1.029E-07	8.319E-08
N	1.209E-11	2.802E-09	3.531E-08	6.844E-08	9.102E-08	8.842E-08	7.864E-08	6.709E-08	5.751E-08	4.979E-08	4.356E-08
NNE	1.325E-15	1.083E-09	1.715E-08	3.403E-08	4.618E-08	4.415E-08	3.893E-08	3.377E-08	2.935E-08	2.572E-08	2.277E-08
NE	3.977E-16	4.398E-10	7.626E-09	1.558E-08	2.131E-08	2.023E-08	1.771E-08	1.526E-08	1.319E-08	1.150E-08	1.015E-08
ENE	5.627E-09	3.287E-09	1.130E-08	1.995E-08	2.571E-08	2.379E-08	2.044E-08	1.735E-08	1.481E-08	1.278E-08	1.116E-08
E	5.096E-16	4.080E-10	6.438E-09	1.260E-08	1.673E-08	1.586E-08	1.395E-08	1.210E-08	1.052E-08	9.220E-09	8.162E-09
ESE	1.118E-15	7.911E-10	1.217E-08	2.340E-08	2.965E-08	2.690E-08	2.283E-08	1.922E-08	1.630E-08	1.400E-08	1.217E-08
SE	1.691E-15	1.253E-09	1.912E-08	3.617E-08	4.423E-08	3.895E-08	3.231E-08	2.673E-08	2.239E-08	1.903E-08	1.642E-08
SSE	2.210E-15	1.970E-09	3.170E-08	6.142E-08	7.674E-08	6.810E-08	5.659E-08	4.675E-08	3.902E-08	3.303E-08	2.836E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	3.932E-08	2.516E-08	1.573E-08	8.379E-09	5.389E-09	3.788E-09	2.789E-09	2.148E-09	1.722E-09	1.419E-09	1.188E-09
SSW	2.209E-08	1.470E-08	9.121E-09	4.817E-09	3.108E-09	2.201E-09	1.638E-09	1.274E-09	1.024E-09	8.426E-10	7.072E-10
SW	1.959E-08	1.389E-08	8.765E-09	4.708E-09	3.038E-09	2.138E-09	1.621E-09	1.263E-09	1.016E-09	8.376E-10	7.037E-10
WSW	2.219E-08	1.248E-08	8.008E-09	4.335E-09	2.719E-09	1.890E-09	1.400E-09	1.084E-09	8.669E-10	7.108E-10	5.944E-10
W	2.611E-08	1.347E-08	8.950E-09	5.031E-09	3.252E-09	2.267E-09	1.677E-09	1.298E-09	1.037E-09	8.502E-10	7.107E-10
WNW	4.060E-08	2.067E-08	1.306E-08	7.046E-09	4.393E-09	3.030E-09	2.241E-09	1.736E-09	1.387E-09	1.135E-09	9.465E-10
NW	5.910E-08	3.045E-08	1.939E-08	1.051E-08	6.510E-09	4.475E-09	3.336E-09	2.597E-09	2.082E-09	1.711E-09	1.433E-09
NNW	7.015E-08	3.753E-08	2.344E-08	1.245E-08	7.729E-09	5.317E-09	3.934E-09	3.061E-09	2.489E-09	2.063E-09	1.737E-09
N	3.861E-08	2.443E-08	2.009E-08	1.535E-08	1.178E-08	8.865E-09	6.711E-09	5.287E-09	4.292E-09	3.568E-09	3.023E-09
NNE	2.624E-08	3.844E-08	2.407E-08	1.300E-08	8.307E-09	5.859E-09	4.398E-09	3.446E-09	2.786E-09	2.307E-09	1.947E-09
NE	1.158E-08	2.116E-08	1.338E-08	7.313E-09	4.712E-09	3.344E-09	2.561E-09	2.042E-09	1.676E-09	1.399E-09	1.189E-09
ENE	1.190E-08	1.469E-08	9.279E-09	5.005E-09	3.144E-09	2.184E-09	1.663E-09	1.319E-09	1.067E-09	8.851E-10	7.478E-10
E	9.057E-09	1.253E-08	7.959E-09	4.315E-09	2.712E-09	1.884E-09	1.394E-09	1.078E-09	8.810E-10	7.349E-10	6.181E-10
ESE	1.256E-08	1.434E-08	9.174E-09	5.025E-09	3.189E-09	2.230E-09	1.659E-09	1.289E-09	1.033E-09	8.483E-10	7.101E-10
SE	1.435E-08	8.703E-09	6.841E-09	5.207E-09	3.909E-09	3.144E-09	2.640E-09	2.271E-09	1.869E-09	1.574E-09	1.347E-09
SSE	2.943E-08	3.040E-08	1.876E-08	9.906E-09	6.229E-09	4.336E-09	3.219E-09	2.498E-09	2.003E-09	1.646E-09	1.379E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
	SEGMENT BOUNDARIES IN MILES FROM THE SITE									
S	3.791E-08	6.697E-08	5.254E-08	4.015E-08	4.144E-08	2.411E-08	8.683E-09	3.815E-09	2.169E-09	1.423E-09
SSW	1.898E-08	3.649E-08	3.321E-08	3.121E-08	2.473E-08	1.386E-08	5.014E-09	2.218E-09	1.282E-09	8.461E-10
SW	2.902E-08	7.518E-08	5.104E-08	3.122E-08	2.190E-08	1.288E-08	4.867E-09	2.171E-09	1.271E-09	8.409E-10
WSW	6.073E-08	1.292E-07	7.361E-08	4.044E-08	2.623E-08	1.265E-08	4.433E-09	1.915E-09	1.092E-09	7.140E-10
W	1.896E-07	1.882E-07	9.078E-08	4.935E-08	3.155E-08	1.427E-08	5.112E-09	2.294E-09	1.307E-09	8.540E-10
WNW	2.297E-07	2.963E-07	1.442E-07	7.852E-08	4.941E-08	2.172E-08	7.204E-09	3.078E-09	1.748E-09	1.140E-09
NW	1.823E-07	3.879E-07	2.098E-07	1.133E-07	7.161E-08	3.190E-08	1.070E-08	4.562E-09	2.612E-09	1.718E-09
NNW	5.734E-08	1.592E-07	1.629E-07	1.255E-07	8.419E-08	3.852E-08	1.280E-08	5.407E-09	3.093E-09	2.068E-09
N	4.281E-08	8.485E-08	7.663E-08	5.730E-08	4.357E-08	2.565E-08	1.482E-08	8.781E-09	5.315E-09	3.581E-09
NNE	2.108E-08	4.258E-08	3.826E-08	2.923E-08	2.493E-08	2.934E-08	1.337E-08	5.927E-09	3.466E-09	2.316E-09
NE	9.565E-09	1.956E-08	1.740E-08	1.314E-08	1.108E-08	1.557E-08	7.505E-09	3.396E-09	2.051E-09	1.403E-09
ENE	1.336E-08	2.358E-08	2.010E-08	1.476E-08	1.191E-08	1.166E-08	5.128E-09	2.231E-09	1.321E-09	8.883E-10
E	7.835E-09	1.542E-08	1.372E-08	1.047E-08	8.807E-09	9.728E-09	4.412E-09	1.909E-09	1.093E-09	7.349E-10
ESE	1.463E-08	2.704E-08	2.247E-08	1.626E-08	1.286E-08	1.165E-08	5.131E-09	2.258E-09	1.297E-09	8.519E-10
SE	2.273E-08	4.009E-08	3.185E-08	2.235E-08	1.642E-08	9.130E-09	4.994E-09	3.146E-09	2.223E-09	1.577E-09
SSE	3.830E-08	6.950E-08	5.572E-08	3.895E-08	3.014E-08	2.501E-08	1.024E-08	4.394E-09	2.515E-09	1.653E-09

ERP ELEVATED STACK RELEASES - JUL-DEC 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) AT FIXED POINTS BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	DISTANCES IN MILES .25	.50	.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
S	1.797E-10	1.078E-09	2.295E-09	2.377E-09	1.485E-09	9.957E-10	7.033E-10	5.166E-10	3.913E-10	3.233E-10	2.937E-10
SSW	7.475E-11	4.485E-10	9.549E-10	9.891E-10	6.178E-10	4.143E-10	2.926E-10	2.149E-10	2.048E-10	1.548E-10	1.212E-10
SW	3.475E-11	2.085E-10	4.439E-10	4.598E-10	5.339E-10	2.952E-10	1.848E-10	1.264E-10	9.169E-11	6.949E-11	5.444E-11
WSW	5.639E-11	3.383E-10	7.204E-10	1.357E-09	9.250E-10	5.032E-10	3.113E-10	2.110E-10	1.524E-10	1.151E-10	9.008E-11
W	6.951E-11	3.582E-09	3.497E-09	2.393E-09	1.132E-09	6.143E-10	3.797E-10	2.574E-10	1.860E-10	1.408E-10	1.104E-10
WNW	1.620E-10	9.717E-10	7.320E-09	5.544E-09	3.495E-09	1.757E-09	1.035E-09	6.752E-10	4.852E-10	3.569E-10	2.749E-10
NW	1.652E-10	9.913E-10	2.111E-09	5.661E-09	3.789E-09	1.883E-09	1.105E-09	7.244E-10	5.139E-10	3.875E-10	3.076E-10
NNW	1.049E-10	6.294E-10	1.340E-09	1.388E-09	1.715E-09	9.349E-10	5.826E-10	4.980E-10	3.721E-10	2.995E-10	2.560E-10
N	3.304E-10	1.311E-09	2.656E-09	2.720E-09	1.690E-09	1.132E-09	7.989E-10	5.867E-10	4.442E-10	3.448E-10	2.730E-10
NNE	9.770E-11	5.862E-10	1.248E-09	1.293E-09	8.075E-10	5.414E-10	3.824E-10	2.809E-10	2.128E-10	1.651E-10	1.308E-10
NE	3.738E-11	2.242E-10	4.775E-10	4.946E-10	3.089E-10	2.071E-10	1.463E-10	1.075E-10	8.140E-11	6.318E-11	5.003E-11
ENE	3.042E-10	4.811E-10	7.546E-10	7.198E-10	4.328E-10	2.868E-10	2.015E-10	1.476E-10	1.116E-10	8.660E-11	6.858E-11
E	3.738E-11	2.242E-10	4.775E-10	4.946E-10	3.089E-10	2.071E-10	1.463E-10	1.075E-10	8.140E-11	6.318E-11	5.003E-11
ESE	7.737E-11	4.642E-10	9.884E-10	1.024E-09	6.395E-10	4.288E-10	3.029E-10	2.225E-10	1.685E-10	1.308E-10	1.036E-10
SE	1.180E-10	7.081E-10	1.508E-09	1.562E-09	9.755E-10	6.541E-10	4.620E-10	3.394E-10	2.570E-10	1.995E-10	1.580E-10
SSE	1.738E-10	1.042E-09	2.220E-09	2.299E-09	1.436E-09	9.630E-10	6.802E-10	4.997E-10	3.784E-10	2.937E-10	2.326E-10

DIRECTION FROM SITE	DISTANCES IN MILES 5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
S	2.361E-10	1.328E-10	8.453E-11	4.574E-11	2.831E-11	2.385E-11	1.705E-11	1.277E-11	1.024E-11	8.114E-12	6.622E-12
SSW	9.804E-11	6.158E-11	4.061E-11	2.275E-11	1.529E-11	1.103E-11	7.903E-12	5.935E-12	4.663E-12	3.725E-12	3.040E-12
SW	4.486E-11	3.629E-11	2.553E-11	1.514E-11	9.608E-12	6.845E-12	4.708E-12	3.535E-12	2.749E-12	2.196E-12	1.792E-12
WSW	7.246E-11	4.325E-11	2.813E-11	1.864E-11	1.128E-11	7.563E-12	5.557E-12	4.172E-12	3.244E-12	2.591E-12	2.115E-12
W	8.904E-11	4.048E-11	3.299E-11	1.975E-11	1.433E-11	9.808E-12	7.028E-12	5.277E-12	4.103E-12	3.278E-12	2.675E-12
WNW	2.227E-10	1.047E-10	6.477E-11	3.398E-11	2.411E-11	1.825E-11	1.363E-11	1.023E-11	8.002E-12	6.392E-12	5.218E-12
NW	2.564E-10	1.375E-10	9.217E-11	6.108E-11	3.744E-11	2.503E-11	1.759E-11	1.320E-11	1.034E-11	8.256E-12	6.739E-12
NNW	2.298E-10	1.555E-10	1.167E-10	7.282E-11	4.665E-11	3.084E-11	2.028E-11	1.495E-11	1.158E-11	9.250E-12	7.551E-12
N	2.199E-10	1.041E-10	6.347E-11	3.334E-11	9.617E-11	5.744E-11	4.108E-11	3.084E-11	2.398E-11	1.916E-11	1.564E-11
NNE	1.053E-10	2.290E-10	1.414E-10	7.305E-11	4.451E-11	2.979E-11	2.129E-11	1.593E-11	1.236E-11	9.848E-12	8.023E-12
NE	4.030E-11	9.624E-11	5.969E-11	3.104E-11	1.895E-11	1.268E-11	9.096E-12	6.783E-12	5.272E-12	4.221E-12	3.445E-12
ENE	5.525E-11	6.769E-11	4.972E-11	3.053E-11	1.951E-11	1.293E-11	9.081E-12	6.278E-12	4.886E-12	3.907E-12	3.192E-12
E	4.030E-11	5.519E-11	4.123E-11	2.563E-11	1.641E-11	1.085E-11	7.597E-12	5.553E-12	4.220E-12	3.302E-12	2.687E-12
ESE	8.342E-11	8.499E-11	6.022E-11	3.591E-11	2.278E-11	1.510E-11	1.063E-11	7.819E-12	5.980E-12	4.713E-12	3.806E-12
SE	1.272E-10	6.025E-11	3.672E-11	1.929E-11	1.173E-11	8.050E-12	6.007E-12	1.140E-11	8.764E-12	6.944E-12	5.642E-12
SSE	1.873E-10	1.999E-10	1.234E-10	6.384E-11	3.892E-11	2.605E-11	1.861E-11	1.393E-11	1.081E-11	8.617E-12	7.023E-12

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	SEGMENT BOUNDARIES IN MILES .5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	2.061E-09	1.466E-09	7.066E-10	4.012E-10	2.811E-10	1.343E-10	4.661E-11	2.232E-11	1.303E-11	8.190E-12
SSW	8.576E-10	6.099E-10	2.940E-10	1.887E-10	1.226E-10	6.036E-11	2.340E-11	1.091E-11	6.013E-12	3.749E-12
SW	3.987E-10	4.114E-10	1.909E-10	9.314E-11	5.535E-11	3.341E-11	1.499E-11	6.727E-12	3.570E-12	2.210E-12
WSW	9.182E-10	8.334E-10	3.223E-10	1.550E-10	9.098E-11	4.302E-11	1.748E-11	7.752E-12	4.214E-12	2.608E-12
W	3.025E-09	1.182E-09	3.933E-10	1.892E-10	1.115E-10	4.794E-11	2.028E-11	9.903E-12	5.330E-12	3.299E-12
WNW	5.120E-09	3.178E-09	1.084E-09	4.906E-10	2.799E-10	1.132E-10	3.644E-11	1.796E-11	1.035E-11	6.434E-12
NW	3.440E-09	3.358E-09	1.160E-09	5.259E-10	3.123E-10	1.438E-10	5.748E-11	2.536E-11	1.336E-11	8.310E-12
NNW	1.204E-09	1.296E-09	6.427E-10	3.804E-10	2.592E-10	1.548E-10	7.095E-11	3.083E-11	1.519E-11	9.311E-12
N	2.385E-09	1.671E-09	8.028E-10	4.470E-10	2.746E-10	1.118E-10	6.796E-11	6.123E-11	3.115E-11	1.928E-11
NNE	1.121E-09	7.971E-10	3.842E-10	2.141E-10	1.315E-10	1.626E-10	7.555E-11	3.032E-11	1.610E-11	9.916E-12
NE	4.288E-10	3.049E-10	1.470E-10	8.191E-11	5.032E-11	6.757E-11	3.203E-11	1.292E-11	6.868E-12	4.245E-12
ENE	6.784E-10	4.317E-10	2.027E-10	1.124E-10	6.898E-11	5.694E-11	2.990E-11	1.314E-11	6.548E-12	3.932E-12
E	4.288E-10	3.049E-10	1.470E-10	8.191E-11	5.032E-11	4.568E-11	2.500E-11	1.103E-11	5.629E-12	3.346E-12
ESE	8.877E-10	6.313E-10	3.043E-10	1.696E-10	1.042E-10	7.363E-11	3.548E-11	1.536E-11	7.922E-12	4.752E-12
SE	1.354E-09	9.629E-10	4.642E-10	2.587E-10	1.589E-10	6.468E-11	1.980E-11	8.214E-12	8.856E-12	7.001E-12
SSE	1.993E-09	1.418E-09	6.834E-10	3.808E-10	2.340E-10	1.631E-10	6.600E-11	2.651E-11	1.408E-11	8.676E-12

ERP ELEVATED STACK RELEASES - JUL-DEC 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION FROM SITE	DIST. (MI)	X/Q (SEC/M3) NO DECAY UNDEPLETED	X/Q (SEC/M3) 2.26 DAY DECAY UNDEPLETED	X/Q (SEC/M3) 8.0 DAY DECAY DEPLETED	D/Q (PER SQ.METER)
A	Site Boundary	S	.80	3.9E-08	3.9E-08	3.9E-08	2.4E-09
A	Site Boundary	SSW	.82	2.1E-08	2.1E-08	2.1E-08	1.0E-09
A	Site Boundary	SW	.97	4.8E-08	4.8E-08	4.8E-08	4.7E-10
A	Site Boundary	WSW	.93	8.8E-08	8.8E-08	8.8E-08	9.9E-10
A	Site Boundary	W	.91	2.5E-07	2.5E-07	2.5E-07	2.6E-09
A	Site Boundary	WNW	.94	3.3E-07	3.3E-07	3.3E-07	6.2E-09
A	Site Boundary	NW	.81	1.7E-07	1.7E-07	1.7E-07	2.2E-09
A	Site Boundary	NNW	.69	2.3E-08	2.3E-08	2.3E-08	1.2E-09
A	Site Boundary	N	.67	2.2E-08	2.2E-08	2.2E-08	2.2E-09
A	Site Boundary	NNE	.60	5.0E-09	5.0E-09	5.0E-09	8.4E-10
A	Site Boundary	NE	.62	2.8E-09	2.8E-09	2.8E-09	3.5E-10
A	Site Boundary	ENE	.59	4.6E-09	4.6E-09	4.5E-09	5.7E-10
A	Site Boundary	E	.53	6.5E-10	6.5E-10	6.5E-10	2.5E-10
A	Site Boundary	ESE	.54	1.5E-09	1.5E-09	1.5E-09	5.4E-10
A	Site Boundary	SE	.65	9.5E-09	9.5E-09	9.5E-09	1.2E-09
A	Site Boundary	SSE	.81	4.1E-08	4.1E-08	4.1E-08	2.3E-09
A	Nearest Res	SW	1.30	8.6E-08	8.6E-08	8.6E-08	7.0E-10
A	Nearest Res	WSW	1.80	1.3E-07	1.3E-07	1.3E-07	6.3E-10
A	Nearest Res	WNW	1.90	2.4E-07	2.4E-07	2.4E-07	2.0E-09
A	Nearest Res	NW	.90	2.4E-07	2.4E-07	2.4E-07	6.1E-09
A	Nearest Res	NNW	1.90	1.8E-07	1.8E-07	1.8E-07	1.0E-09
A	Nearest Cow	NNW	3.50	1.3E-07	1.3E-07	1.3E-07	3.7E-10
A	Nearest Garde	SW	2.20	6.2E-08	6.2E-08	6.1E-08	2.4E-10
A	Nearest Garde	WSW	1.80	1.3E-07	1.3E-07	1.3E-07	6.3E-10
A	Nearest Garde	WNW	1.90	2.4E-07	2.4E-07	2.4E-07	2.0E-09
A	Nearest Garde	NNW	3.00	1.5E-07	1.5E-07	1.5E-07	5.0E-10
A	MAXIMUM CHI/Q	S	1.50	7.5E-08	7.5E-08	7.4E-08	1.5E-09
A	MAXIMUM CHI/Q	SSW	1.50	4.1E-08	4.1E-08	4.0E-08	6.2E-10
A	MAXIMUM CHI/Q	SW	1.50	1.0E-07	9.9E-08	9.9E-08	5.3E-10
A	MAXIMUM CHI/Q	WSW	1.50	1.8E-07	1.7E-07	1.7E-07	9.2E-10
A	MAXIMUM CHI/Q	W	1.00	2.6E-07	2.6E-07	2.5E-07	2.4E-09
A	MAXIMUM CHI/Q	WNW	1.50	3.8E-07	3.7E-07	3.7E-07	3.5E-09
A	MAXIMUM CHI/Q	NW	1.50	5.4E-07	5.4E-07	5.3E-07	3.8E-09
A	MAXIMUM CHI/Q	NNW	2.00	1.8E-07	1.8E-07	1.8E-07	9.3E-10
A	MAXIMUM CHI/Q	N	1.50	9.2E-08	9.2E-08	9.1E-08	1.7E-09
A	MAXIMUM CHI/Q	NNE	1.50	4.7E-08	4.6E-08	4.6E-08	8.1E-10
A	MAXIMUM CHI/Q	NE	7.50	2.2E-08	2.2E-08	2.1E-08	9.6E-11
A	MAXIMUM CHI/Q	ENE	1.50	2.6E-08	2.6E-08	2.6E-08	4.3E-10
A	MAXIMUM CHI/Q	E	1.50	1.7E-08	1.7E-08	1.7E-08	3.1E-10
A	MAXIMUM CHI/Q	ESE	1.50	3.0E-08	3.0E-08	3.0E-08	6.4E-10
A	MAXIMUM CHI/Q	SE	1.50	4.5E-08	4.5E-08	4.4E-08	9.8E-10
A	MAXIMUM CHI/Q	SSE	1.50	7.7E-08	7.7E-08	7.7E-08	1.4E-09

Atmospheric Diffusion Estimates

Elevated Releases

January-December 2019

ERP ELEVATED STACK RELEASES - JAN-DEC 2019
NO DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	6.094E-12	2.725E-09	3.876E-08	7.360E-08	9.054E-08	7.980E-08	6.610E-08	5.455E-08	4.552E-08	5.042E-08	5.288E-08
SSW	7.990E-12	2.115E-09	2.244E-08	4.270E-08	5.398E-08	4.846E-08	4.063E-08	4.291E-08	4.205E-08	3.581E-08	3.091E-08
SW	5.311E-16	6.151E-10	2.502E-08	6.864E-08	1.193E-07	8.185E-08	5.938E-08	4.521E-08	3.577E-08	2.917E-08	2.437E-08
WSW	6.222E-16	8.080E-10	4.201E-08	1.205E-07	2.000E-07	1.259E-07	8.674E-08	6.380E-08	4.922E-08	3.937E-08	3.239E-08
W	3.861E-13	4.435E-08	2.215E-07	2.774E-07	2.436E-07	1.504E-07	1.024E-07	7.478E-08	5.739E-08	4.572E-08	3.749E-08
WNW	3.215E-14	1.215E-08	1.882E-07	3.407E-07	3.779E-07	2.250E-07	1.500E-07	1.118E-07	8.736E-08	6.871E-08	5.579E-08
NW	2.022E-15	2.041E-09	1.159E-07	3.340E-07	5.346E-07	3.112E-07	2.046E-07	1.481E-07	1.130E-07	8.857E-08	7.168E-08
NNW	9.536E-16	1.021E-09	3.198E-08	8.370E-08	1.517E-07	1.563E-07	1.455E-07	1.280E-07	1.115E-07	8.765E-08	7.117E-08
N	6.093E-12	1.893E-09	2.552E-08	5.027E-08	6.884E-08	6.817E-08	6.140E-08	5.283E-08	4.557E-08	3.964E-08	3.481E-08
NNE	1.314E-15	1.030E-09	1.633E-08	3.245E-08	4.413E-08	4.213E-08	3.708E-08	3.208E-08	2.781E-08	2.431E-08	2.147E-08
NE	7.780E-16	7.460E-10	1.226E-08	2.407E-08	3.118E-08	2.860E-08	2.445E-08	2.070E-08	1.766E-08	1.523E-08	1.331E-08
ENE	2.835E-09	1.942E-09	1.015E-08	1.873E-08	2.425E-08	2.245E-08	1.934E-08	1.647E-08	1.411E-08	1.222E-08	1.071E-08
E	5.525E-16	4.538E-10	7.197E-09	1.402E-08	1.840E-08	1.726E-08	1.505E-08	1.297E-08	1.122E-08	9.789E-09	8.636E-09
ESE	7.990E-12	1.657E-09	1.356E-08	2.429E-08	2.978E-08	2.667E-08	2.246E-08	1.882E-08	1.592E-08	1.365E-08	1.186E-08
SE	7.991E-12	2.377E-09	2.406E-08	4.366E-08	5.281E-08	4.654E-08	3.867E-08	3.203E-08	2.684E-08	2.281E-08	1.966E-08
SSE	2.207E-11	4.164E-09	3.605E-08	6.499E-08	7.918E-08	7.022E-08	5.859E-08	4.867E-08	4.085E-08	3.477E-08	3.001E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	4.647E-08	2.903E-08	1.864E-08	1.050E-08	7.189E-09	5.341E-09	4.127E-09	3.321E-09	2.769E-09	2.357E-09	2.033E-09
SSW	2.756E-08	1.746E-08	1.109E-08	6.167E-09	4.171E-09	3.049E-09	2.345E-09	1.879E-09	1.553E-09	1.313E-09	1.130E-09
SW	2.214E-08	1.545E-08	1.006E-08	5.778E-09	4.032E-09	3.036E-09	2.408E-09	1.947E-09	1.621E-09	1.379E-09	1.194E-09
WSW	2.813E-08	1.677E-08	1.130E-08	6.603E-09	4.382E-09	3.194E-09	2.471E-09	1.989E-09	1.650E-09	1.399E-09	1.208E-09
W	3.146E-08	1.677E-08	1.153E-08	7.073E-09	4.996E-09	3.661E-09	2.832E-09	2.281E-09	1.893E-09	1.606E-09	1.387E-09
WNW	4.682E-08	2.513E-08	1.661E-08	9.727E-09	6.544E-09	4.817E-09	3.762E-09	3.047E-09	2.533E-09	2.148E-09	1.855E-09
NW	5.991E-08	3.155E-08	2.063E-08	1.183E-08	7.837E-09	5.704E-09	4.436E-09	3.575E-09	2.961E-09	2.508E-09	2.163E-09
NNW	6.020E-08	3.300E-08	2.131E-08	1.214E-08	8.166E-09	6.015E-09	4.716E-09	3.840E-09	3.232E-09	2.763E-09	2.395E-09
N	3.095E-08	1.973E-08	1.611E-08	1.214E-08	9.556E-09	7.585E-09	5.928E-09	4.805E-09	4.003E-09	3.409E-09	2.954E-09
NNE	2.411E-08	3.275E-08	2.120E-08	1.214E-08	8.204E-09	6.066E-09	4.746E-09	3.860E-09	3.230E-09	2.761E-09	2.401E-09
NE	1.445E-08	2.057E-08	1.335E-08	7.670E-09	5.198E-09	3.852E-09	3.050E-09	2.501E-09	2.106E-09	1.802E-09	1.568E-09
ENE	1.139E-08	1.564E-08	1.033E-08	6.055E-09	4.152E-09	3.102E-09	2.557E-09	2.150E-09	1.803E-09	1.545E-09	1.346E-09
E	9.370E-09	1.218E-08	7.981E-09	4.632E-09	3.154E-09	2.344E-09	1.840E-09	1.501E-09	1.289E-09	1.122E-09	9.755E-10
ESE	1.209E-08	1.399E-08	9.289E-09	5.474E-09	3.763E-09	2.815E-09	2.222E-09	1.820E-09	1.532E-09	1.316E-09	1.149E-09
SE	1.717E-08	1.032E-08	7.838E-09	5.574E-09	4.090E-09	3.240E-09	2.694E-09	2.311E-09	1.939E-09	1.661E-09	1.447E-09
SSE	3.115E-08	3.244E-08	2.074E-08	1.166E-08	7.784E-09	5.700E-09	4.424E-09	3.575E-09	2.974E-09	2.529E-09	2.189E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	4.624E-08	8.200E-08	6.513E-08	4.996E-08	4.977E-08	2.829E-08	1.084E-08	5.348E-09	3.341E-09	2.359E-09
SSW	2.693E-08	4.902E-08	4.363E-08	3.992E-08	3.112E-08	1.688E-08	6.375E-09	3.067E-09	1.888E-09	1.316E-09
SW	3.898E-08	9.139E-08	5.971E-08	3.595E-08	2.497E-08	1.454E-08	5.954E-09	3.051E-09	1.955E-09	1.382E-09
WSW	6.773E-08	1.494E-07	8.801E-08	4.964E-08	3.288E-08	1.686E-08	6.660E-09	3.222E-09	1.998E-09	1.403E-09
W	2.070E-07	2.097E-07	1.042E-07	5.791E-08	3.770E-08	1.771E-08	7.141E-09	3.685E-09	2.290E-09	1.610E-09
WNW	2.169E-07	3.017E-07	1.548E-07	8.725E-08	5.630E-08	2.616E-08	9.843E-09	4.856E-09	3.055E-09	2.154E-09
NW	1.876E-07	3.907E-07	2.104E-07	1.137E-07	7.233E-08	3.300E-08	1.201E-08	5.766E-09	3.587E-09	2.515E-09
NNW	4.809E-08	1.386E-07	1.414E-07	1.071E-07	7.199E-08	3.385E-08	1.241E-08	6.069E-09	3.859E-09	2.765E-09
N	3.127E-08	6.442E-08	5.978E-08	4.538E-08	3.481E-08	2.062E-08	1.187E-08	7.448E-09	4.820E-09	3.416E-09
NNE	2.009E-08	4.065E-08	3.642E-08	2.770E-08	2.329E-08	2.570E-08	1.240E-08	6.108E-09	3.873E-09	2.766E-09
NE	1.495E-08	2.845E-08	2.406E-08	1.760E-08	1.430E-08	1.600E-08	7.833E-09	3.890E-09	2.508E-09	1.805E-09
ENE	1.214E-08	2.222E-08	1.902E-08	1.407E-08	1.141E-08	1.234E-08	6.159E-09	3.164E-09	2.134E-09	1.548E-09
E	8.729E-09	1.692E-08	1.481E-08	1.117E-08	9.250E-09	9.689E-09	4.719E-09	2.358E-09	1.517E-09	1.117E-09
ESE	1.568E-08	2.718E-08	2.213E-08	1.588E-08	1.247E-08	1.148E-08	5.562E-09	2.831E-09	1.825E-09	1.318E-09
SE	2.795E-08	4.799E-08	3.811E-08	2.679E-08	1.967E-08	1.074E-08	5.418E-09	3.248E-09	2.278E-09	1.664E-09
SSE	4.183E-08	7.204E-08	5.772E-08	4.077E-08	3.184E-08	2.695E-08	1.196E-08	5.746E-09	3.588E-09	2.535E-09

ERP ELEVATED STACK RELEASES - JAN-DEC 2019
2.260 DAY DECAY, UNDEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	6.093E-12	2.723E-09	3.872E-08	7.350E-08	9.034E-08	7.955E-08	6.584E-08	5.428E-08	4.525E-08	5.004E-08	5.237E-08
SSW	7.985E-12	2.113E-09	2.241E-08	4.263E-08	5.384E-08	4.828E-08	4.044E-08	4.266E-08	4.175E-08	3.552E-08	3.062E-08
SW	5.309E-16	6.147E-10	2.498E-08	6.849E-08	1.188E-07	8.141E-08	5.897E-08	4.483E-08	3.541E-08	2.883E-08	2.405E-08
WSW	6.220E-16	8.073E-10	4.195E-08	1.202E-07	1.992E-07	1.252E-07	8.610E-08	6.321E-08	4.868E-08	3.886E-08	3.191E-08
W	3.860E-13	4.431E-08	2.211E-07	2.768E-07	2.426E-07	1.495E-07	1.017E-07	7.408E-08	5.675E-08	4.513E-08	3.694E-08
WNW	3.214E-14	1.214E-08	1.880E-07	3.401E-07	3.767E-07	2.240E-07	1.491E-07	1.110E-07	8.655E-08	6.797E-08	5.510E-08
NW	2.021E-15	2.040E-09	1.158E-07	3.335E-07	5.330E-07	3.099E-07	2.035E-07	1.472E-07	1.121E-07	8.776E-08	7.095E-08
NNW	9.533E-16	1.021E-09	3.194E-08	8.357E-08	1.513E-07	1.558E-07	1.448E-07	1.272E-07	1.107E-07	8.698E-08	7.056E-08
N	6.093E-12	1.892E-09	2.550E-08	5.021E-08	6.870E-08	6.798E-08	6.118E-08	5.260E-08	4.534E-08	3.941E-08	3.459E-08
NNE	1.313E-15	1.029E-09	1.631E-08	3.240E-08	4.403E-08	4.200E-08	3.693E-08	3.192E-08	2.766E-08	2.415E-08	2.131E-08
NE	7.778E-16	7.456E-10	1.224E-08	2.404E-08	3.111E-08	2.851E-08	2.435E-08	2.060E-08	1.755E-08	1.513E-08	1.320E-08
ENE	2.834E-09	1.941E-09	1.014E-08	1.870E-08	2.419E-08	2.237E-08	1.925E-08	1.638E-08	1.402E-08	1.212E-08	1.061E-08
E	5.524E-16	4.535E-10	7.190E-09	1.400E-08	1.836E-08	1.720E-08	1.499E-08	1.290E-08	1.114E-08	9.717E-09	8.563E-09
ESE	7.985E-12	1.655E-09	1.355E-08	2.425E-08	2.972E-08	2.659E-08	2.238E-08	1.874E-08	1.584E-08	1.356E-08	1.177E-08
SE	7.986E-12	2.375E-09	2.404E-08	4.361E-08	5.271E-08	4.641E-08	3.854E-08	3.190E-08	2.670E-08	2.268E-08	1.953E-08
SSE	2.206E-11	4.161E-09	3.602E-08	6.490E-08	7.902E-08	7.001E-08	5.837E-08	4.845E-08	4.063E-08	3.455E-08	2.979E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	4.595E-08	2.846E-08	1.814E-08	1.008E-08	6.793E-09	4.972E-09	3.787E-09	3.005E-09	2.470E-09	2.073E-09	1.765E-09
SSW	2.727E-08	1.715E-08	1.083E-08	5.947E-09	3.970E-09	2.865E-09	2.176E-09	1.723E-09	1.406E-09	1.174E-09	9.987E-10
SW	2.181E-08	1.507E-08	9.734E-09	5.497E-09	3.771E-09	2.792E-09	2.178E-09	1.732E-09	1.419E-09	1.189E-09	1.013E-09
WSW	2.766E-08	1.630E-08	1.087E-08	6.214E-09	4.041E-09	2.888E-09	2.191E-09	1.730E-09	1.408E-09	1.173E-09	9.942E-10
W	3.094E-08	1.634E-08	1.113E-08	6.684E-09	4.624E-09	3.324E-09	2.523E-09	1.995E-09	1.626E-09	1.356E-09	1.151E-09
WNW	4.617E-08	2.457E-08	1.611E-08	9.270E-09	6.133E-09	4.440E-09	3.411E-09	2.717E-09	2.222E-09	1.856E-09	1.578E-09
NW	5.922E-08	3.099E-08	2.013E-08	1.139E-08	7.449E-09	5.354E-09	4.110E-09	3.271E-09	2.676E-09	2.239E-09	1.908E-09
NNW	5.962E-08	3.251E-08	2.089E-08	1.178E-08	7.850E-09	5.726E-09	4.446E-09	3.586E-09	2.988E-09	2.530E-09	2.172E-09
N	3.072E-08	1.952E-08	1.588E-08	1.186E-08	9.247E-09	7.272E-09	5.636E-09	4.530E-09	3.743E-09	3.162E-09	2.718E-09
NNE	2.390E-08	3.224E-08	2.076E-08	1.176E-08	7.868E-09	5.759E-09	4.461E-09	3.593E-09	2.977E-09	2.521E-09	2.171E-09
NE	1.432E-08	2.025E-08	1.308E-08	7.439E-09	4.991E-09	3.664E-09	2.873E-09	2.334E-09	1.947E-09	1.650E-09	1.423E-09
ENE	1.127E-08	1.538E-08	1.010E-08	5.850E-09	3.966E-09	2.930E-09	2.386E-09	1.983E-09	1.645E-09	1.394E-09	1.201E-09
E	9.279E-09	1.201E-08	7.832E-09	4.504E-09	3.040E-09	2.239E-09	1.743E-09	1.410E-09	1.201E-09	1.037E-09	8.945E-10
ESE	1.199E-08	1.379E-08	9.110E-09	5.313E-09	3.615E-09	2.677E-09	2.092E-09	1.696E-09	1.413E-09	1.202E-09	1.039E-09
SE	1.704E-08	1.020E-08	7.713E-09	5.433E-09	3.948E-09	3.096E-09	2.548E-09	2.163E-09	1.798E-09	1.526E-09	1.317E-09
SSE	3.089E-08	3.194E-08	2.031E-08	1.130E-08	7.464E-09	5.408E-09	4.154E-09	3.321E-09	2.734E-09	2.302E-09	1.972E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
	SEGMENT BOUNDARIES IN MILES FROM THE SITE									
S	4.618E-08	8.180E-08	6.487E-08	4.965E-08	4.930E-08	2.776E-08	1.041E-08	4.983E-09	3.024E-09	2.076E-09
SSW	2.689E-08	4.888E-08	4.342E-08	3.964E-08	3.083E-08	1.659E-08	6.153E-09	2.884E-09	1.732E-09	1.178E-09
SW	3.891E-08	9.101E-08	5.930E-08	3.559E-08	2.464E-08	1.420E-08	5.671E-09	2.807E-09	1.740E-09	1.192E-09
WSW	6.759E-08	1.488E-07	8.736E-08	4.909E-08	3.240E-08	1.641E-08	6.282E-09	2.917E-09	1.739E-09	1.176E-09
W	2.066E-07	2.088E-07	1.034E-07	5.728E-08	3.714E-08	1.727E-08	6.756E-09	3.350E-09	2.006E-09	1.360E-09
WNW	2.165E-07	3.007E-07	1.538E-07	8.646E-08	5.561E-08	2.561E-08	9.396E-09	4.480E-09	2.727E-09	1.862E-09
NW	1.873E-07	3.895E-07	2.093E-07	1.129E-07	7.158E-08	3.244E-08	1.158E-08	5.415E-09	3.284E-09	2.246E-09
NNW	4.801E-08	1.382E-07	1.407E-07	1.064E-07	7.137E-08	3.337E-08	1.206E-08	5.780E-09	3.604E-09	2.533E-09
N	3.124E-08	6.427E-08	5.956E-08	4.516E-08	3.459E-08	2.039E-08	1.159E-08	7.144E-09	4.546E-09	3.170E-09
NNE	2.007E-08	4.055E-08	3.628E-08	2.754E-08	2.311E-08	2.529E-08	1.203E-08	5.802E-09	3.606E-09	2.526E-09
NE	1.493E-08	2.838E-08	2.396E-08	1.750E-08	1.419E-08	1.575E-08	7.604E-09	3.701E-09	2.340E-09	1.654E-09
ENE	1.212E-08	2.216E-08	1.893E-08	1.397E-08	1.130E-08	1.212E-08	5.956E-09	2.989E-09	1.969E-09	1.397E-09
E	8.719E-09	1.688E-08	1.474E-08	1.110E-08	9.170E-09	9.545E-09	4.593E-09	2.254E-09	1.426E-09	1.033E-09
ESE	1.566E-08	2.711E-08	2.204E-08	1.580E-08	1.238E-08	1.131E-08	5.402E-09	2.693E-09	1.701E-09	1.204E-09
SE	2.792E-08	4.789E-08	3.798E-08	2.666E-08	1.954E-08	1.062E-08	5.279E-09	3.104E-09	2.134E-09	1.529E-09
SSE	4.178E-08	7.188E-08	5.750E-08	4.055E-08	3.161E-08	2.654E-08	1.160E-08	5.454E-09	3.336E-09	2.308E-09

ERP ELEVATED STACK RELEASES - JAN-DEC 2019
8.000 DAY DECAY, DEPLETED
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	.250	.500	.750	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500
S	6.094E-12	2.722E-09	3.874E-08	7.357E-08	8.965E-08	7.827E-08	6.426E-08	5.259E-08	4.355E-08	4.805E-08	5.028E-08
SSW	7.989E-12	2.106E-09	2.240E-08	4.264E-08	5.344E-08	4.753E-08	3.950E-08	4.144E-08	4.039E-08	3.418E-08	2.934E-08
SW	5.310E-16	6.150E-10	2.501E-08	6.860E-08	1.179E-07	8.021E-08	5.778E-08	4.373E-08	3.442E-08	2.794E-08	2.325E-08
WSW	6.221E-16	8.078E-10	4.199E-08	1.203E-07	1.973E-07	1.229E-07	8.403E-08	6.138E-08	4.707E-08	3.745E-08	3.066E-08
W	3.861E-13	4.434E-08	2.202E-07	2.739E-07	2.378E-07	1.454E-07	9.823E-08	7.122E-08	5.432E-08	4.304E-08	3.512E-08
WNW	3.215E-14	1.215E-08	1.880E-07	3.376E-07	3.699E-07	2.176E-07	1.437E-07	1.063E-07	8.254E-08	6.447E-08	5.199E-08
NW	2.022E-15	2.041E-09	1.159E-07	3.325E-07	5.267E-07	3.034E-07	1.978E-07	1.423E-07	1.080E-07	8.407E-08	6.760E-08
NNW	9.535E-16	1.021E-09	3.197E-08	8.366E-08	1.505E-07	1.542E-07	1.430E-07	1.255E-07	1.091E-07	8.539E-08	6.897E-08
N	6.093E-12	1.890E-09	2.551E-08	5.025E-08	6.826E-08	6.715E-08	6.016E-08	5.151E-08	4.425E-08	3.835E-08	3.357E-08
NNE	1.313E-15	1.030E-09	1.632E-08	3.244E-08	4.375E-08	4.147E-08	3.627E-08	3.122E-08	2.695E-08	2.346E-08	2.065E-08
NE	7.780E-16	7.459E-10	1.225E-08	2.406E-08	3.089E-08	2.810E-08	2.384E-08	2.006E-08	1.701E-08	1.460E-08	1.269E-08
ENE	2.835E-09	1.929E-09	1.012E-08	1.870E-08	2.401E-08	2.205E-08	1.886E-08	1.596E-08	1.360E-08	1.171E-08	1.022E-08
E	5.525E-16	4.537E-10	7.195E-09	1.401E-08	1.824E-08	1.698E-08	1.472E-08	1.260E-08	1.085E-08	9.433E-09	8.291E-09
ESE	7.989E-12	1.649E-09	1.352E-08	2.424E-08	2.948E-08	2.618E-08	2.188E-08	1.820E-08	1.531E-08	1.305E-08	1.128E-08
SE	7.990E-12	2.368E-09	2.402E-08	4.361E-08	5.229E-08	4.566E-08	3.762E-08	3.093E-08	2.573E-08	2.173E-08	1.862E-08
SSE	2.207E-11	4.145E-09	3.596E-08	6.488E-08	7.838E-08	6.889E-08	5.700E-08	4.699E-08	3.917E-08	3.313E-08	2.842E-08

ANNUAL AVERAGE CHI/Q (SEC/METER CUBED) DISTANCE IN MILES FROM THE SITE

SECTOR	5.000	7.500	10.000	15.000	20.000	25.000	30.000	35.000	40.000	45.000	50.000
S	4.399E-08	2.687E-08	1.670E-08	8.841E-09	5.666E-09	3.976E-09	2.926E-09	2.253E-09	1.806E-09	1.487E-09	1.245E-09
SSW	2.605E-08	1.611E-08	9.907E-09	5.179E-09	3.292E-09	2.306E-09	1.708E-09	1.324E-09	1.060E-09	8.698E-10	7.281E-10
SW	2.108E-08	1.449E-08	9.121E-09	4.890E-09	3.161E-09	2.230E-09	1.694E-09	1.320E-09	1.062E-09	8.757E-10	7.360E-10
WSW	2.654E-08	1.544E-08	1.007E-08	5.555E-09	3.509E-09	2.451E-09	1.825E-09	1.418E-09	1.138E-09	9.364E-10	7.854E-10
W	2.934E-08	1.533E-08	1.039E-08	6.031E-09	4.007E-09	2.815E-09	2.096E-09	1.631E-09	1.310E-09	1.079E-09	9.057E-10
WNW	4.335E-08	2.252E-08	1.442E-08	7.913E-09	4.962E-09	3.446E-09	2.570E-09	2.003E-09	1.608E-09	1.320E-09	1.105E-09
NW	5.613E-08	2.859E-08	1.808E-08	9.714E-09	6.038E-09	4.162E-09	3.099E-09	2.410E-09	1.932E-09	1.587E-09	1.329E-09
NNW	5.801E-08	3.077E-08	1.918E-08	1.016E-08	6.293E-09	4.323E-09	3.193E-09	2.481E-09	2.013E-09	1.666E-09	1.402E-09
N	2.976E-08	1.877E-08	1.528E-08	1.147E-08	8.796E-09	6.651E-09	5.039E-09	3.971E-09	3.225E-09	2.682E-09	2.272E-09
NNE	2.322E-08	3.146E-08	1.966E-08	1.059E-08	6.753E-09	4.756E-09	3.565E-09	2.790E-09	2.254E-09	1.865E-09	1.573E-09
NE	1.379E-08	1.968E-08	1.233E-08	6.666E-09	4.267E-09	3.014E-09	2.294E-09	1.820E-09	1.488E-09	1.238E-09	1.050E-09
ENE	1.087E-08	1.499E-08	9.574E-09	5.235E-09	3.314E-09	2.314E-09	1.796E-09	1.441E-09	1.166E-09	9.659E-10	8.154E-10
E	9.003E-09	1.172E-08	7.426E-09	4.017E-09	2.524E-09	1.753E-09	1.297E-09	1.003E-09	8.201E-10	6.844E-10	5.759E-10
ESE	1.148E-08	1.334E-08	8.579E-09	4.735E-09	3.021E-09	2.121E-09	1.583E-09	1.233E-09	9.903E-10	8.147E-10	6.830E-10
SE	1.617E-08	9.524E-09	7.152E-09	5.037E-09	3.663E-09	2.886E-09	2.390E-09	2.038E-09	1.671E-09	1.402E-09	1.197E-09
SSE	2.945E-08	3.051E-08	1.883E-08	9.955E-09	6.267E-09	4.366E-09	3.244E-09	2.519E-09	2.021E-09	1.661E-09	1.393E-09

CHI/Q (SEC/METER CUBED) FOR EACH SEGMENT

SEGMENT BOUNDARIES IN MILES FROM THE SITE

DIRECTION FROM SITE	.5-1	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
S	4.621E-08	8.102E-08	6.333E-08	4.784E-08	4.729E-08	2.616E-08	9.176E-09	4.006E-09	2.275E-09	1.492E-09
SSW	2.689E-08	4.841E-08	4.242E-08	3.833E-08	2.955E-08	1.556E-08	5.391E-09	2.330E-09	1.333E-09	8.736E-10
SW	3.896E-08	9.020E-08	5.814E-08	3.461E-08	2.384E-08	1.357E-08	5.062E-09	2.264E-09	1.329E-09	8.792E-10
WSW	6.764E-08	1.472E-07	8.535E-08	4.749E-08	3.115E-08	1.552E-08	5.649E-09	2.483E-09	1.428E-09	9.403E-10
W	2.050E-07	2.047E-07	9.999E-08	5.485E-08	3.533E-08	1.625E-08	6.101E-09	2.845E-09	1.641E-09	1.083E-09
WNW	2.154E-07	2.950E-07	1.485E-07	8.245E-08	5.249E-08	2.355E-08	8.046E-09	3.500E-09	2.014E-09	1.325E-09
NW	1.869E-07	3.843E-07	2.037E-07	1.087E-07	6.823E-08	3.004E-08	9.939E-09	4.237E-09	2.425E-09	1.593E-09
NNW	4.807E-08	1.373E-07	1.390E-07	1.048E-07	6.978E-08	3.167E-08	1.045E-08	4.396E-09	2.506E-09	1.671E-09
N	3.125E-08	6.377E-08	5.856E-08	4.408E-08	3.357E-08	1.966E-08	1.113E-08	6.578E-09	3.992E-09	2.691E-09
NNE	2.009E-08	4.023E-08	3.564E-08	2.684E-08	2.243E-08	2.438E-08	1.090E-08	4.812E-09	2.807E-09	1.872E-09
NE	1.494E-08	2.813E-08	2.347E-08	1.696E-08	1.366E-08	1.510E-08	6.859E-09	3.060E-09	1.829E-09	1.242E-09
ENE	1.211E-08	2.196E-08	1.855E-08	1.355E-08	1.090E-08	1.167E-08	5.345E-09	2.374E-09	1.438E-09	9.694E-10
E	8.726E-09	1.674E-08	1.447E-08	1.081E-08	8.893E-09	9.208E-09	4.111E-09	1.776E-09	1.017E-09	6.844E-10
ESE	1.565E-08	2.685E-08	2.156E-08	1.527E-08	1.188E-08	1.081E-08	4.827E-09	2.146E-09	1.241E-09	8.180E-10
SE	2.792E-08	4.742E-08	3.709E-08	2.569E-08	1.863E-08	9.946E-09	4.896E-09	2.894E-09	1.998E-09	1.405E-09
SSE	4.175E-08	7.116E-08	5.617E-08	3.910E-08	3.020E-08	2.508E-08	1.029E-08	4.424E-09	2.536E-09	1.669E-09

ERP ELEVATED STACK RELEASES - JAN-DEC 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) AT FIXED POINTS BY DOWNWIND SECTORS **********

DIRECTION FROM SITE	.25	.50	.75	1.00	1.50	2.00	2.50	3.00	3.50	4.00	4.50
					DISTANCES IN MILES						
S	2.824E-10	1.356E-09	2.819E-09	2.905E-09	1.810E-09	1.213E-09	8.564E-10	6.290E-10	4.764E-10	3.926E-10	3.575E-10
SSW	1.724E-10	6.960E-10	1.414E-09	1.449E-09	9.008E-10	6.032E-10	4.258E-10	3.127E-10	2.979E-10	2.253E-10	1.763E-10
SW	5.286E-11	3.171E-10	6.752E-10	6.994E-10	8.419E-10	4.614E-10	2.870E-10	1.953E-10	1.414E-10	1.070E-10	8.375E-11
WSW	6.839E-11	4.103E-10	8.736E-10	1.856E-09	1.121E-09	6.098E-10	3.772E-10	2.557E-10	1.846E-10	1.395E-10	1.092E-10
W	8.623E-11	4.471E-09	4.361E-09	2.968E-09	1.482E-09	7.914E-10	4.845E-10	3.261E-10	2.343E-10	1.766E-10	1.381E-10
WNW	1.493E-10	8.959E-10	6.577E-09	5.086E-09	3.195E-09	1.611E-09	9.523E-10	6.253E-10	4.543E-10	3.381E-10	2.640E-10
NW	1.691E-10	1.015E-09	2.161E-09	5.832E-09	3.891E-09	1.932E-09	1.135E-09	7.442E-10	5.289E-10	3.999E-10	3.185E-10
NNW	8.656E-11	5.193E-10	1.106E-09	1.145E-09	1.406E-09	7.678E-10	4.807E-10	4.106E-10	3.073E-10	2.477E-10	2.121E-10
N	2.121E-10	9.338E-10	1.920E-09	1.974E-09	1.228E-09	8.229E-10	5.810E-10	4.267E-10	3.231E-10	2.508E-10	1.986E-10
NNE	9.581E-11	5.748E-10	1.224E-09	1.268E-09	7.918E-10	5.309E-10	3.750E-10	2.755E-10	2.087E-10	1.619E-10	1.283E-10
NE	6.442E-11	3.865E-10	8.229E-10	8.524E-10	5.324E-10	3.570E-10	2.522E-10	1.852E-10	1.403E-10	1.089E-10	8.624E-11
ENE	1.777E-10	3.890E-10	6.925E-10	6.861E-10	4.201E-10	2.800E-10	1.972E-10	1.447E-10	1.095E-10	8.495E-11	6.728E-11
E	4.130E-11	2.478E-10	5.275E-10	5.464E-10	3.413E-10	2.289E-10	1.616E-10	1.187E-10	8.994E-11	6.980E-11	5.528E-11
ESE	1.384E-10	4.918E-10	9.793E-10	9.988E-10	6.196E-10	4.146E-10	2.926E-10	2.148E-10	1.627E-10	1.262E-10	9.997E-11
SE	2.088E-10	9.140E-10	1.878E-09	1.930E-09	1.201E-09	8.046E-10	5.680E-10	4.172E-10	3.159E-10	2.452E-10	1.942E-10
SSE	3.845E-10	1.291E-09	2.545E-09	2.590E-09	1.605E-09	1.074E-09	7.575E-10	5.561E-10	4.211E-10	3.268E-10	2.588E-10

DIRECTION FROM SITE	5.00	7.50	10.00	15.00	20.00	25.00	30.00	35.00	40.00	45.00	50.00
					DISTANCES IN MILES						
S	2.873E-10	1.557E-10	9.779E-11	5.219E-11	3.220E-11	2.804E-11	2.005E-11	1.502E-11	1.197E-11	9.510E-12	7.763E-12
SSW	1.425E-10	8.165E-11	5.229E-11	2.847E-11	2.062E-11	1.463E-11	1.048E-11	7.872E-12	6.182E-12	4.938E-12	4.031E-12
SW	6.811E-11	4.879E-11	3.336E-11	1.930E-11	1.217E-11	9.097E-12	6.344E-12	4.763E-12	3.704E-12	2.958E-12	2.415E-12
WSW	8.817E-11	5.464E-11	3.598E-11	2.370E-11	1.434E-11	9.615E-12	7.018E-12	5.270E-12	4.098E-12	3.273E-12	2.672E-12
W	1.113E-10	5.081E-11	4.259E-11	2.546E-11	1.821E-11	1.244E-11	8.912E-12	6.692E-12	5.203E-12	4.156E-12	3.393E-12
WNW	2.175E-10	1.094E-10	7.071E-11	3.882E-11	2.677E-11	1.907E-11	1.417E-11	1.064E-11	8.337E-12	6.659E-12	5.436E-12
NW	2.665E-10	1.448E-10	9.783E-11	6.362E-11	3.885E-11	2.599E-11	1.864E-11	1.399E-11	1.092E-11	8.723E-12	7.120E-12
NNW	1.905E-10	1.294E-10	9.722E-11	6.070E-11	3.890E-11	2.571E-11	1.685E-11	1.243E-11	9.612E-12	7.679E-12	6.268E-12
N	1.599E-10	7.574E-11	4.616E-11	2.425E-11	7.374E-11	4.344E-11	3.109E-11	2.334E-11	1.815E-11	1.450E-11	1.184E-11
NNE	1.033E-10	1.937E-10	1.196E-10	6.181E-11	3.767E-11	2.521E-11	1.802E-11	1.348E-11	1.046E-11	8.335E-12	6.790E-12
NE	6.945E-11	1.071E-10	6.615E-11	3.423E-11	2.087E-11	1.397E-11	1.006E-11	7.517E-12	5.844E-12	4.678E-12	3.818E-12
ENE	5.419E-11	6.239E-11	4.531E-11	2.757E-11	1.758E-11	1.165E-11	8.185E-12	5.859E-12	4.556E-12	3.640E-12	2.972E-12
E	4.452E-11	5.510E-11	4.050E-11	2.487E-11	1.588E-11	1.051E-11	7.370E-12	5.396E-12	4.109E-12	3.282E-12	2.674E-12
ESE	8.052E-11	7.859E-11	5.518E-11	3.266E-11	2.068E-11	1.373E-11	9.673E-12	7.125E-12	5.456E-12	4.306E-12	3.481E-12
SE	1.564E-10	7.405E-11	4.513E-11	2.371E-11	1.441E-11	9.861E-12	7.315E-12	1.220E-11	9.391E-12	7.453E-12	6.062E-12
SSE	2.084E-10	2.219E-10	1.365E-10	7.028E-11	4.279E-11	2.866E-11	2.049E-11	1.535E-11	1.192E-11	9.506E-12	7.750E-12

********** RELATIVE DEPOSITION PER UNIT AREA (M**-2) BY DOWNWIND SECTORS **********

DIRECTION .5-1 FROM SITE	1-2	2-3	3-4	4-5	5-10	10-20	20-30	30-40	40-50
				SEGMENT BOUNDARIES IN MILES					
S 2.532E-09	1.788E-09	8.605E-10	4.880E-10	3.419E-10	1.592E-10	5.344E-11	2.595E-11	1.529E-11	9.591E-12
SSW 1.270E-09	8.904E-10	4.278E-10	2.745E-10	1.783E-10	8.212E-11	3.028E-11	1.457E-11	7.974E-12	4.970E-12
SW 6.064E-10	6.411E-10	2.969E-10	1.437E-10	8.484E-11	4.622E-11	1.926E-11	8.815E-12	4.811E-12	2.978E-12
WSW 1.207E-09	1.057E-09	3.906E-10	1.878E-10	1.104E-10	5.380E-11	2.227E-11	9.837E-12	5.323E-12	3.295E-12
W 3.767E-09	1.505E-09	5.030E-10	2.385E-10	1.396E-10	6.061E-11	2.605E-11	1.257E-11	6.759E-12	4.184E-12
WNW 4.652E-09	2.911E-09	9.970E-10	4.589E-10	2.687E-10	1.162E-10	4.055E-11	1.916E-11	1.077E-11	6.703E-12
NW 3.538E-09	3.452E-09	1.191E-09	5.413E-10	3.233E-10	1.510E-10	6.021E-11	2.648E-11	1.415E-11	8.781E-12
NNW 9.930E-10	1.065E-09	5.292E-10	3.141E-10	2.147E-10	1.287E-10	5.912E-11	2.568E-11	1.262E-11	7.729E-12
N 1.725E-09	1.214E-09	5.838E-10	3.251E-10	1.997E-10	8.130E-11	5.111E-11	4.658E-11	2.358E-11	1.459E-11
NNE 1.099E-09	7.816E-10	3.768E-10	2.100E-10	1.290E-10	1.406E-10	6.391E-11	2.566E-11	1.363E-11	8.391E-12
NE 7.391E-10	5.256E-10	2.534E-10	1.412E-10	8.673E-11	8.053E-11	3.539E-11	1.425E-11	7.607E-12	4.705E-12
ENE 6.222E-10	4.169E-10	1.983E-10	1.102E-10	6.767E-11	5.298E-11	2.707E-11	1.184E-11	6.027E-12	3.664E-12
E 4.738E-10	3.369E-10	1.624E-10	9.050E-11	5.560E-11	4.626E-11	2.435E-11	1.069E-11	5.470E-12	3.302E-12
ESE 8.796E-10	6.128E-10	2.940E-10	1.637E-10	1.006E-10	6.861E-11	3.234E-11	1.396E-11	7.217E-12	4.341E-12
SE 1.687E-09	1.187E-09	5.708E-10	3.179E-10	1.953E-10	7.949E-11	2.434E-11	1.006E-11	9.733E-12	7.512E-12
SSE 2.286E-09	1.588E-09	7.612E-10	4.237E-10	2.603E-10	1.810E-10	7.277E-11	2.916E-11	1.551E-11	9.570E-12

ERP ELEVATED STACK RELEASES - JAN-DEC 2019
CORRECTED USING STANDARD OPEN TERRAIN FACTORS

SPECIFIC POINTS OF INTEREST

RELEASE ID	TYPE OF LOCATION	DIRECTION FROM SITE	DIST. (MI)	X/Q (SEC/M3) NO DECAY UNDEPLETED	X/Q (SEC/M3) 2.26 DAY DECAY UNDEPLETED	X/Q (SEC/M3) 8.0 DAY DECAY DEPLETED	D/Q (PER SQ.METER)
A	Site Boundary	S	.80	4.7E-08	4.7E-08	4.7E-08	2.9E-09
A	Site Boundary	SSW	.82	3.0E-08	3.0E-08	2.9E-08	1.5E-09
A	Site Boundary	SW	.97	6.4E-08	6.4E-08	6.4E-08	7.2E-10
A	Site Boundary	WSW	.93	9.8E-08	9.8E-08	9.8E-08	1.4E-09
A	Site Boundary	W	.91	2.7E-07	2.7E-07	2.7E-07	3.3E-09
A	Site Boundary	WNW	.94	3.1E-07	3.1E-07	3.1E-07	5.7E-09
A	Site Boundary	NW	.81	1.7E-07	1.7E-07	1.7E-07	2.3E-09
A	Site Boundary	NNW	.69	1.9E-08	1.9E-08	1.9E-08	9.6E-10
A	Site Boundary	N	.67	1.6E-08	1.6E-08	1.6E-08	1.6E-09
A	Site Boundary	NNE	.60	4.8E-09	4.8E-09	4.8E-09	8.3E-10
A	Site Boundary	NE	.62	4.7E-09	4.7E-09	4.7E-09	6.0E-10
A	Site Boundary	ENE	.59	3.4E-09	3.4E-09	3.4E-09	4.9E-10
A	Site Boundary	E	.53	7.2E-10	7.2E-10	7.2E-10	2.7E-10
A	Site Boundary	ESE	.54	2.6E-09	2.6E-09	2.5E-09	5.6E-10
A	Site Boundary	SE	.65	1.3E-08	1.3E-08	1.3E-08	1.5E-09
A	Site Boundary	SSE	.81	4.5E-08	4.5E-08	4.5E-08	2.7E-09
A	Nearest Res	SW	1.30	1.1E-07	1.1E-07	1.1E-07	1.1E-09
A	Nearest Res	WSW	1.80	1.5E-07	1.5E-07	1.5E-07	7.6E-10
A	Nearest Res	WNW	1.90	2.5E-07	2.5E-07	2.4E-07	1.8E-09
A	Nearest Res	NW	.90	2.5E-07	2.5E-07	2.5E-07	6.2E-09
A	Nearest Res	NNW	1.90	1.6E-07	1.6E-07	1.6E-07	8.6E-10
A	Nearest Cow	NNW	3.50	1.1E-07	1.1E-07	1.1E-07	3.1E-10
A	Nearest Garde	SW	2.20	7.2E-08	7.1E-08	7.0E-08	3.8E-10
A	Nearest Garde	WSW	1.80	1.5E-07	1.5E-07	1.5E-07	7.6E-10
A	Nearest Garde	WNW	1.90	2.5E-07	2.5E-07	2.4E-07	1.8E-09
A	Nearest Garde	NNW	3.00	1.3E-07	1.3E-07	1.3E-07	4.1E-10
A	MAXIMUM CHI/Q	S	1.50	9.1E-08	9.0E-08	9.0E-08	1.8E-09
A	MAXIMUM CHI/Q	SSW	1.50	5.4E-08	5.4E-08	5.3E-08	9.0E-10
A	MAXIMUM CHI/Q	SW	1.50	1.2E-07	1.2E-07	1.2E-07	8.4E-10
A	MAXIMUM CHI/Q	WSW	1.50	2.0E-07	2.0E-07	2.0E-07	1.1E-09
A	MAXIMUM CHI/Q	W	1.00	2.8E-07	2.8E-07	2.7E-07	3.0E-09
A	MAXIMUM CHI/Q	WNW	1.50	3.8E-07	3.8E-07	3.7E-07	3.2E-09
A	MAXIMUM CHI/Q	NW	1.50	5.3E-07	5.3E-07	5.3E-07	3.9E-09
A	MAXIMUM CHI/Q	NNW	2.00	1.6E-07	1.6E-07	1.5E-07	7.7E-10
A	MAXIMUM CHI/Q	N	1.50	6.9E-08	6.9E-08	6.8E-08	1.2E-09
A	MAXIMUM CHI/Q	NNE	1.50	4.4E-08	4.4E-08	4.4E-08	7.9E-10
A	MAXIMUM CHI/Q	NE	1.50	3.1E-08	3.1E-08	3.1E-08	5.3E-10
A	MAXIMUM CHI/Q	ENE	1.50	2.4E-08	2.4E-08	2.4E-08	4.2E-10
A	MAXIMUM CHI/Q	E	1.50	1.8E-08	1.8E-08	1.8E-08	3.4E-10
A	MAXIMUM CHI/Q	ESE	1.50	3.0E-08	3.0E-08	2.9E-08	6.2E-10
A	MAXIMUM CHI/Q	SE	1.50	5.3E-08	5.3E-08	5.2E-08	1.2E-09
A	MAXIMUM CHI/Q	SSE	1.50	7.9E-08	7.9E-08	7.8E-08	1.6E-09

ATMOSPHERIC DIFFUSION MODEL

Onsite meteorological data from January 1 through December 31, 2019 were used to determine long-term (routine) diffusion estimates for evaluating normal atmospheric releases from Cooper Nuclear Station. Atmospheric dispersion parameters (X/Q values) were determined for the site boundary distances from each release point, the standard population distances, and special locations for nearest residence, cow, and garden using the methodology presented in U.S. NRC Regulatory Guide 1.111 (Rev.1) and the computer code XOQDOQ (NUREG/CR2919). Two release modes were analyzed. Releases from the 99-meter free-standing stack were considered 100 percent elevated, while releases from the reactor building, turbine-generator building, radwaste building and augmented radwaste building vents were considered as a 100 percent ground level release (one combined source term was assumed to apply for these vents).

Winds were obtained from measurements at the 10-meter level (for ground-level releases) and the 100-meter level (for elevated releases), and the stability class was based on the vertical temperature gradient between 60 meters and 10 meters (for ground releases) and 100 meters and 10 meters (for elevated releases). In accordance with Regulatory Guide 1.111, calm periods were distributed directionally in proportion to the directional distribution within a stability class of the lowest wind speed group. For the calculations, calm periods were assigned a speed of one-half the threshold wind speed of the wind vane or anemometer, whichever is higher.

The Gaussian straight-line trajectory model, which assumes that the air flow transports and diffuses effluents along a straight line through the entire region of interest in the airflow direction at the release point, was modified to account for various modes of effluent releases. In the case of an elevated release, plume rise due to momentum effects was incorporated into the calculation. For ground-level releases, building wake effects were considered.

The mathematical equation used in the Gaussian straight-line trajectory model is:

$$(X/Q)_I = 2.032 \sum_{jk} \frac{f_{ijk}}{x u_{jk} \Sigma_{zk}} \exp\left[\frac{-1/2\, h_e^2}{\sigma_{zk}^2}\right] \qquad \text{(Eq. 1)}$$

and

$$\Sigma_{zk} = \left(\sigma_{zk}^2 + 0.5\, D_z^2/\pi\right)^{1/2} \le \sqrt{3}\sigma_{zk} \qquad \text{(Eq. 2)}$$

where I = index identifying direction sector;

j = index identifying wind speed class;

k = index identifying atmospheric stability class;

$\frac{X}{Q}$ = average effluent concentration normalized by source strength at the specific downwind distance;

f = joint frequency distribution of wind direction, wind speed class, and atmospheric stability class;

x = distance from the release point to a receptor;

u = wind speed;

Σ_z = vertical plume spread with volumetric building wake correction for a release within the building wake cavity;

σ_z = vertical plume spread without volumetric building wake correction;

D_z = maximum adjacent building height either upwind or downwind of the release point (44.5 meters for ground-level releases); and

h_e = effective plume height;

The term Σ_{zk} given in Equations 1 and 2 is used for ground-level release ($h = 0$) within the building wake cavity. For an elevated release, no volumetric building wake correction needs to be considered, i.e., $\Sigma_{zk} = \sigma_{zk}$. For all building wake determinations, the reactor building was considered to be the dominating structure in the modification of air flows within the building complex.

Since the model does not directly consider the effects of spatial and temporal variation in airflow due to terrain, appropriate adjustments were made to the calculated X/Q values, using the default values of Regulatory Guide 1.111, Rev. 0.

APPENDIX C

DOSE CALCULATIONS

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LIQUID EFFLUENT DOSE CALCULATIONS

Doses to the maximum individual and 0 to 50 - mile population resulting from the release of radioactive material in liquid effluents from Cooper Nuclear Station were calculated using the latest version of the LADTAP II computer program included as part of NRCDose 2.3.20 (ORNL 2015). The LADTAP II program implements the radiological dose models of Regulatory Guide 1.109 for determining the radiation exposure to man from three principal exposure pathways in the aquatic environment -- potable water, aquatic foods, and recreational water use. Doses to both the maximum individual and 0 to 50 mile population are calculated as a function of age group and pathway for significant body organs, and are presented in Tables 1 - 6.

Assumptions and data sources used for input to the LADTAP II code are described in a separate section of this appendix (see page C66).

TABLE 1. Doses to Maximum Individual at the Site Boundary, Resulting From Exposure to Radioactivity Discharged in Liquid Effluents, January-June 2019 Cooper Nuclear Station

Period and Pathway	Dose to Individual, mrem							
	Skin	Bone	Liver	Total Body	Thyroid	Kidney	Lung	GI-LLI
1st Quarter								
Drinking Water		1.51 E-03	4.43 E-03	3.72 E-03	2.05 E-03	2.88 E-03	2.27 E-03	4.73 E-03
Shoreline	7.99 E-04	6.80 E-04	6.80 E-04	6.80 E-04	6.80 E-04	6.80 E-04	6.80 E-04	6.80 E-04
Totals	**7.99 E-04**	**8.90 E-02**	**1.32 E-01**	**8.49 E-02**	**2.78 E-03**	**5.06 E-02**	**1.58 E-02**	**2.12 E-02**
2nd Quarter								
Eating Fish		2.60 E-02	3.56 E-02	2.34 E-02	2.69 E-05	1.21 E-02	4.04 E-03	1.08 E-03
Drinking Water		4.52 E-04	1.67 E-03	1.47 E-03	1.04 E-03	1.25 E-03	1.11 E-03	1.29 E-03
Shoreline	1.07 E-04	9.10 E-05	9.10 E-05	9.10 E-05	9.10 E-05	9.10 E-05	9.10 E-05	9.10 E-05
Totals	**1.07 E-04**	**2.65 E-02**	**3.74 E-02**	**2.49 E-02**	**1.16 E-03**	**1.34 E-02**	**5.24 E-03**	**2.46 E-03**
Totals for 1st & 2nd Quarters	**9.06 E-04**	**1.16 E-01**	**1.69 E-01**	**1.10 E-01**	**3.94 E-03**	**6.40 E-02**	**2.10 E-02**	**2.37 E-02**

Calculated doses are based on the following periods of exposures: Fishing: April - November; Drinking water and shoreline: January - December

TABLE 2. Doses to Maximum Individual at the Site Boundary, Resulting From Exposure to Radioactivity Discharged in Liquid Effluents, July-December 2019, Cooper Nuclear Station

Period and Pathway	Dose to Individual, mrem							
	Skin	Bone	Liver	Total Body	Thyroid	Kidney	Lung	GI-LLI
3rd Quarter								
Eating Fish		1.79 E-02	2.46 E-02	1.61 E-02	2.74 E-05	8.36 E-03	2.80 E-03	7.71 E-04
Drinking Water		3.12 E-04	1.50 E-03	1.36 E-03	1.06 E-03	1.20 E-03	1.11 E-03	1.24 E-03
Shoreline	7.59 E-05	6.47 E-05	6.47 E-05	6.47 E-05	6.47 E-05	6.47 E-05	6.47 E-05	6.47 E-05
Totals	**7.59 E-05**	**1.83 E-02**	**2.61 E-02**	**1.76 E-02**	**1.15 E-03**	**9.63 E-03**	**3.97 E-03**	**2.08 E-03**
4th Quarter								
Eating Fish		2.49 E-02	3.42 E-02	2.24 E-02	3.56 E-04	1.16 E-02	3.88 E-03	1.19 E-03
Drinking Water		4.35 E-04	2.06 E-03	1.88 E-03	2.22 E-03	1.65 E-03	1.52 E-03	1.80 E-03
Shoreline	1.34 E-04	1.14 E-04	1.14 E-04	1.14 E-04	1.14 E-04	1.14 E-04	1.14 E-04	1.14 E-04
Totals	**1.34 E-04**	**2.55 E-02**	**3.63 E-02**	**2.44 E-02**	**2.69 E-03**	**1.34 E-02**	**5.51 E-03**	**3.10 E-03**
Totals for 3rd & 4th Quarters	**2.10 E-04**	**4.38 E-02**	**6.24 E-02**	**4.20 E-02**	**3.84 E-03**	**2.30 E-02**	**9.48 E-03**	**5.18 E-03**

Calculated doses are based on the following periods of exposures: Fishing: April - November; Drinking water and shoreline: January - December

TABLE 3. Summary of Doses to Maximum Individual at the Site Boundary, Resulting from Exposure to Radioactivity Discharged in Liquid Effluents, January-December 2019, Cooper Nuclear Station

Period and Pathway	Dose to Individual, mrem							
	Skin	Bone	Liver	Total Body	Thyroid	Kidney	Lung	GI-LLI
1st Quarter	7.99 E-04	8.90 E-02	1.32 E-01	8.49 E-02	2.78 E-03	5.06 E-02	1.58 E-02	2.12 E-02
2nd Quarter	1.07 E-04	2.65 E-02	3.74 E-02	2.49 E-02	1.16 E-03	1.34 E-02	5.24 E-03	2.46 E-03
3rd Quarter	7.59 E-05	1.83 E-02	2.61 E-02	1.76 E-02	1.15 E-03	9.63 E-03	3.97 E-03	2.08 E-03
4th Quarter	1.34 E-04	2.55 E-02	3.63 E-02	2.44 E-02	2.69 E-03	1.34 E-02	5.51 E-03	3.10 E-03
Totals for 2019	**1.12 E-03**	**1.59 E-01**	**2.32 E-01**	**1.52 E-01**	**7.78 E-03**	**8.70 E-02**	**3.05 E-02**	**2.88 E-02**

TABLE 4. Doses to Population Within a 50-Mile Radius, Resulting From Exposure to Radioactivity Discharged in Liquid Effluents, January-June 2019, Cooper Nuclear Station

Period and Pathway	Dose to Population, manrem							
	Skin	Bone	Liver	Total Body	Thyroid	Kidney	Lung	GI-LLI
1st Quarter								
Drinking Water		3.50 E-02	8.53 E-02	6.41 E-02	3.69 E-02	5.36 E-02	4.16 E-02	7.76 E-02
Shoreline	1.90 E-02	0.00 E+00	0.00 E+00	1.62 E-02	1.62 E-02	0.00 E+00	0.00 E+00	0.00 E+00
Totals	**1.90 E-02**	**3.50 E-02**	**8.53 E-02**	**8.03 E-02**	**5.31 E-02**	**5.36 E-02**	**4.16 E-02**	**7.76 E-02**
2nd Quarter								
Eating Fish		1.87 E-02	2.38 E-02	1.28 E-02	1.64 E-05	8.03 E-03	2.77 E-03	6.14 E-04
Drinking Water		6.81 E-03	2.05 E-02	1.63 E-02	1.21 E-02	1.48 E-02	1.30 E-02	1.46 E-02
Shoreline	1.64 E-03	0.00 E+00	0.00 E+00	1.40 E-03	1.40 E-03	0.00 E+00	0.00 E+00	0.00 E+00
Swimming	0.00 E+00	0.00 E+00	0.00 E+00	6.07 E-06	6.07 E-06	0.00 E+00	0.00 E+00	0.00 E+00
Boating	0.00 E+00	0.00 E+00	0.00 E+00	2.22 E-05	2.22 E-05	0.00 E+00	0.00 E+00	0.00 E+00
Totals	**1.64 E-03**	**2.55 E-02**	**4.43 E-02**	**3.05 E-02**	**1.35 E-02**	**2.28 E-02**	**1.58 E-02**	**1.52 E-02**
Totals for 1st & 2nd Quarters	**2.06 E-02**	**6.05 E-02**	**1.30 E-01**	**1.11 E-01**	**6.66 E-02**	**7.64 E-02**	**5.74 E-02**	**9.28 E-02**

Calculated doses are based on the following periods of exposures: Fishing and Boating: April - November; Drinking water and shoreline: January - December; Swimming: June - September. Exposure from drinking water is calculated for the city of St. Joseph, Missouri, nearest public water intake from the Missouri River, 84 miles downstream.

TABLE 5. Doses to Population Within a 50-Mile Radius, Resulting From Exposure to Radioactivity Discharged in Liquid Effluents, July-December 2019, Cooper Nuclear Station

Period and Pathway	Dose to Population, manrem							
	Skin	Bone	Liver	Total Body	Thyroid	Kidney	Lung	GI-LLI
3rd Quarter								
Eating Fish		1.76 E-02	2.24 E-02	1.20 E-02	2.28 E-05	7.57 E-03	2.61 E-03	5.97 E-04
Drinking Water		6.41 E-03	2.47 E-02	2.08 E-02	1.68 E-02	1.94 E-02	1.77 E-02	1.93 E-02
Shoreline	1.59 E-03	0.00 E+00	0.00 E+00	1.36 E-03	1.36 E-03	0.00 E+00	0.00 E+00	0.00 E+00
Swimming	0.00 E+00	0.00 E+00	0.00 E+00	5.94 E-06	5.94 E-06	0.00 E+00	0.00 E+00	0.00 E+00
Boating	0.00 E+00	0.00 E+00	0.00 E+00	2.17 E-05	2.17 E-05	0.00 E+00	0.00 E+00	0.00 E+00
Totals	**1.59 E-03**	**2.40 E-02**	**4.71 E-02**	**3.42 E-02**	**1.82 E-02**	**2.70 E-02**	**2.03 E-02**	**1.99 E-02**
4th Quarter								
Eating Fish		3.15 E-02	4.02 E-02	2.16 E-02	1.34 E-04	1.36 E-02	4.68 E-03	1.19 E-03
Drinking Water		1.15 E-02	4.40 E-02	3.72 E-02	4.55 E-02	3.44 E-02	3.13 E-02	3.58 E-02
Shoreline	3.63 E-03	0.00 E+00	0.00 E+00	3.09 E-03	3.09 E-03	0.00 E+00	0.00 E+00	0.00 E+00
Boating	0.00 E+00	0.00 E+00	0.00 E+00	5.24 E-05	5.24 E-05	0.00 E+00	0.00 E+00	0.00 E+00
Totals	**3.63 E-03**	**4.30 E-02**	**8.42 E-02**	**6.19 E-02**	**4.88 E-02**	**4.80 E-02**	**3.60 E-02**	**3.70 E-02**
Totals for 3rd & 4th Quarters	**5.22 E-03**	**6.70 E-02**	**1.31 E-01**	**9.61 E-02**	**6.70 E-02**	**7.50 E-02**	**5.63 E-02**	**5.69 E-02**

Calculated doses are based on the following periods of exposures: Fishing and Boating: April - November; Drinking water and shoreline: January - December; Swimming: June - September. Exposure from drinking water is calculated for the city of St. Joseph, Missouri, nearest public water intake from the Missouri River, 84 miles downstream.

TABLE 6. Summary of Doses to Population Within a 50-Mile Radius, Resulting from Exposure to Radioactivity Discharged in Liquid Effluents, January-December 2019 Cooper Nuclear Station

Period and Pathway	Dose to Population, manrem							
	Skin	Bone	Liver	Total Body	Thyroid	Kidney	Lung	GI-LLI
1st Quarter	1.90 E-02	3.50 E-02	8.53 E-02	8.03 E-02	5.31 E-02	5.36 E-02	4.16 E-02	7.76 E-02
2nd Quarter	1.64 E-03	2.55 E-02	4.43 E-02	3.05 E-02	1.35 E-02	2.28 E-02	1.58 E-02	1.52 E-02
3rd Quarter	1.59 E-03	2.40 E-02	4.71 E-02	3.42 E-02	1.82 E-02	2.70 E-02	2.03 E-02	1.99 E-02
4th Quarter	3.63 E-03	4.30 E-02	8.42 E-02	6.19 E-02	4.88 E-02	4.80 E-02	3.60 E-02	3.70 E-02
Totals for 2019	**2.59 E-02**	**1.28 E-01**	**2.61 E-01**	**2.07 E-01**	**1.34 E-01**	**1.51 E-01**	**1.14 E-01**	**1.50 E-01**

GASEOUS EFFLUENT DOSE CALCULATIONS (EXCEPT CARBON-14)

Doses to the maximum individual and 0 to 50 mile population resulting from the release of radioactive material in gaseous effluents from the Cooper Nuclear Station were calculated using the latest version of the GASPAR computer code included as part of NRCDose 2.3.20 (ORNL 2015). Four sites were selected for individual dose calculations: the site boundary, the nearest residence, the nearest garden and the nearest cow. GASPAR implements the radiological dose models of Regulatory Guide 1.109 for determining the radiation exposure to man from four principal atmospheric exposure pathways: plume, ground, inhalation, and ingestion. Doses to the maximum individual and the population are calculated as a function of age group and pathway for significant body organs.

Tables 1 through 7 present maximum individual doses. Population doses are given in Tables 8 through 14.

Assumptions and data used for input to the GASPAR code are described in a separate section of this appendix (see page C66).

TABLE 1. DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-MARCH 2019

SPECIAL LOCATION NO. 1A Site Boundary
AT .67 MILES N

ANNUAL BETA AIR DOSE = 2.58E-05 MILLRADS
ANNUAL GAMMA AIR DOSE = 2.06E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.36E-05	1.36E-05	1.36E-05	1.36E-05	1.36E-05	1.36E-05	1.39E-05	3.56E-05
GROUND	8.97E-05	8.97E-05	8.97E-05	8.97E-05	8.97E-05	8.97E-05	8.97E-05	1.06E-04
VEGET								
ADULT	1.85E-06	1.16E-05	6.34E-07	1.41E-06	4.20E-07	3.52E-05	7.56E-08	0.00E+00
TEEN	2.58E-06	1.24E-05	1.03E-06	2.20E-06	6.54E-07	4.72E-05	1.42E-07	0.00E+00
CHILD	4.70E-06	8.11E-06	2.46E-06	3.60E-06	1.06E-06	9.04E-05	2.16E-07	0.00E+00
MEAT								
ADULT	4.00E-07	3.10E-06	4.32E-08	2.22E-07	2.36E-08	9.35E-07	6.18E-09	0.00E+00
TEEN	3.04E-07	1.67E-06	3.59E-08	1.74E-07	1.91E-08	6.77E-07	5.85E-09	0.00E+00
CHILD	4.58E-07	8.41E-07	6.62E-08	2.13E-07	2.42E-08	1.02E-06	6.87E-09	0.00E+00
COW MILK								
ADULT	4.30E-07	7.15E-07	4.01E-07	5.85E-07	3.04E-07	2.68E-05	5.23E-08	0.00E+00
TEEN	5.01E-07	8.46E-07	7.27E-07	1.03E-06	5.40E-07	4.25E-05	1.08E-07	0.00E+00
CHILD	6.35E-07	5.66E-07	1.75E-06	1.78E-06	8.98E-07	8.46E-05	1.66E-07	0.00E+00
INFANT	9.31E-07	5.01E-07	2.93E-06	3.61E-06	1.50E-06	2.06E-04	3.00E-07	0.00E+00
GOATMILK								
ADULT	9.77E-07	1.41E-07	1.09E-06	1.50E-06	6.48E-07	3.22E-05	1.57E-07	0.00E+00
TEEN	9.65E-07	1.76E-07	1.98E-06	2.64E-06	1.15E-06	5.10E-05	3.24E-07	0.00E+00
CHILD	8.37E-07	1.27E-07	4.77E-06	4.58E-06	1.91E-06	1.02E-04	4.98E-07	0.00E+00
INFANT	9.77E-07	1.19E-07	7.78E-06	9.10E-06	3.14E-06	2.47E-04	9.01E-07	0.00E+00
INHAL								
ADULT	3.97E-08	3.75E-07	2.89E-08	5.79E-08	5.36E-08	5.56E-06	7.45E-06	0.00E+00
TEEN	4.67E-08	3.45E-07	4.06E-08	7.87E-08	7.41E-08	7.19E-06	1.09E-05	0.00E+00
CHILD	4.78E-08	1.32E-07	5.52E-08	7.51E-08	6.95E-08	8.78E-06	8.82E-06	0.00E+00
INFANT	2.77E-08	4.47E-08	3.96E-08	6.08E-08	4.56E-08	8.07E-06	5.63E-06	0.00E+00

TABLE 1. DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-MARCH 2019 (Continued)

SPECIAL LOCATION NO. 2A Site Boundary
AT .54 MILES ESE

ANNUAL BETA AIR DOSE = 2.63E-05 MILLRADS
ANNUAL GAMMA AIR DOSE = 2.55E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.69E-05	1.69E-05	1.69E-05	1.69E-05	1.69E-05	1.69E-05	1.72E-05	4.04E-05
GROUND	1.10E-04	1.10E-04	1.10E-04	1.10E-04	1.10E-04	1.10E-04	1.10E-04	1.29E-04
VEGET								
ADULT	2.29E-06	1.43E-05	9.07E-07	1.76E-06	5.51E-07	4.90E-05	9.41E-08	0.00E+00
TEEN	3.19E-06	1.53E-05	1.48E-06	2.74E-06	8.55E-07	6.57E-05	1.76E-07	0.00E+00
CHILD	5.81E-06	1.00E-05	3.53E-06	4.49E-06	1.39E-06	1.26E-04	2.68E-07	0.00E+00
MEAT								
ADULT	4.92E-07	3.80E-06	5.60E-08	2.74E-07	3.00E-08	1.30E-06	7.69E-09	0.00E+00
TEEN	3.74E-07	2.04E-06	4.65E-08	2.15E-07	2.44E-08	9.44E-07	7.27E-09	0.00E+00
CHILD	5.61E-07	1.03E-06	8.58E-08	2.63E-07	3.09E-08	1.42E-06	8.55E-09	0.00E+00
COW MILK								
ADULT	5.41E-07	8.83E-07	5.12E-07	7.40E-07	4.00E-07	3.73E-05	6.51E-08	0.00E+00
TEEN	6.33E-07	1.05E-06	9.28E-07	1.30E-06	7.10E-07	5.91E-05	1.34E-07	0.00E+00
CHILD	8.08E-07	7.02E-07	2.24E-06	2.25E-06	1.18E-06	1.18E-04	2.07E-07	0.00E+00
INFANT	1.19E-06	6.22E-07	3.77E-06	4.58E-06	1.98E-06	2.86E-04	3.74E-07	0.00E+00
GOATMILK								
ADULT	1.22E-06	1.80E-07	1.38E-06	1.88E-06	8.32E-07	4.48E-05	1.95E-07	0.00E+00
TEEN	1.21E-06	2.25E-07	2.50E-06	3.31E-06	1.47E-06	7.10E-05	4.03E-07	0.00E+00
CHILD	1.07E-06	1.64E-07	6.02E-06	5.74E-06	2.45E-06	1.41E-04	6.20E-07	0.00E+00
INFANT	1.27E-06	1.53E-07	9.84E-06	1.14E-05	4.04E-06	3.43E-04	1.12E-06	0.00E+00
INHAL								
ADULT	3.18E-08	3.01E-07	2.32E-08	4.64E-08	4.30E-08	4.47E-06	5.96E-06	0.00E+00
TEEN	3.74E-08	2.78E-07	3.27E-08	6.31E-08	5.95E-08	5.78E-06	8.71E-06	0.00E+00
CHILD	3.83E-08	1.11E-07	4.43E-08	6.02E-08	5.58E-08	7.05E-06	7.06E-06	0.00E+00
INFANT	2.22E-08	4.05E-08	3.19E-08	4.88E-08	3.66E-08	6.49E-06	4.51E-06	0.00E+00

TABLE 1. DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-MARCH 2019 (Continued)

SPECIAL LOCATION NO. 3A Nearest Resident
AT .90 MILES NW

ANNUAL BETA AIR DOSE = 1.95E-04 MILLRADS
ANNUAL GAMMA AIR DOSE = 3.05E-04 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	2.05E-04	2.05E-04	2.05E-04	2.05E-04	2.05E-04	2.05E-04	2.07E-04	4.08E-04
GROUND	5.23E-05	5.23E-05	5.23E-05	5.23E-05	5.23E-05	5.23E-05	5.23E-05	6.16E-05
VEGET								
ADULT	1.31E-06	7.65E-06	1.71E-06	1.13E-06	6.06E-07	8.06E-05	5.85E-08	0.00E+00
TEEN	1.79E-06	8.24E-06	2.79E-06	1.76E-06	9.30E-07	1.08E-04	1.10E-07	0.00E+00
CHILD	3.21E-06	5.52E-06	6.71E-06	2.91E-06	1.50E-06	2.07E-04	1.67E-07	0.00E+00
MEAT								
ADULT	2.43E-07	1.83E-06	5.63E-08	1.44E-07	2.56E-08	2.15E-06	4.77E-09	0.00E+00
TEEN	1.83E-07	9.85E-07	4.68E-08	1.14E-07	2.08E-08	1.56E-06	4.51E-09	0.00E+00
CHILD	2.72E-07	4.99E-07	8.66E-08	1.40E-07	2.64E-08	2.35E-06	5.30E-09	0.00E+00
COW MILK								
ADULT	3.89E-07	4.90E-07	4.45E-07	5.71E-07	4.52E-07	6.11E-05	4.03E-08	0.00E+00
TEEN	4.82E-07	5.92E-07	8.07E-07	1.01E-06	8.04E-07	9.67E-05	8.32E-08	0.00E+00
CHILD	6.64E-07	4.10E-07	1.95E-06	1.74E-06	1.34E-06	1.92E-04	1.28E-07	0.00E+00
INFANT	1.06E-06	3.72E-07	3.49E-06	3.70E-06	2.28E-06	4.67E-04	2.32E-07	0.00E+00
GOATMILK								
ADULT	8.38E-07	1.54E-07	1.02E-06	1.30E-06	7.60E-07	7.33E-05	1.21E-07	0.00E+00
TEEN	8.87E-07	2.00E-07	1.86E-06	2.30E-06	1.35E-06	1.16E-04	2.50E-07	0.00E+00
CHILD	9.12E-07	1.53E-07	4.50E-06	4.00E-06	2.24E-06	2.31E-04	3.84E-07	0.00E+00
INFANT	1.26E-06	1.48E-07	7.64E-06	8.16E-06	3.76E-06	5.60E-04	6.94E-07	0.00E+00
INHAL								
ADULT	1.42E-08	1.88E-07	1.40E-08	2.25E-08	2.44E-08	2.71E-06	2.31E-06	0.00E+00
TEEN	1.70E-08	2.14E-07	1.98E-08	3.07E-08	3.37E-08	3.49E-06	3.38E-06	0.00E+00
CHILD	1.76E-08	2.58E-07	2.68E-08	2.95E-08	3.16E-08	4.22E-06	2.75E-06	0.00E+00
INFANT	1.06E-08	1.79E-07	1.97E-08	2.46E-08	2.08E-08	3.88E-06	1.79E-06	0.00E+00

TABLE 1. DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-MARCH 2019 (Continued)

SPECIAL LOCATION NO. 4A Nearest Cow
AT 3.50 MILES NNW

ANNUAL BETA AIR DOSE = 6.20E-05 MILLRADS
ANNUAL GAMMA AIR DOSE = 9.86E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	6.61E-05	6.61E-05	6.61E-05	6.61E-05	6.61E-05	6.61E-05	6.67E-05	1.31E-04
GROUND	1.37E-06	1.37E-06	1.37E-06	1.37E-06	1.37E-06	1.37E-06	1.37E-06	1.61E-06
VEGET								
ADULT	3.57E-08	2.06E-07	5.37E-08	3.16E-08	1.82E-08	2.50E-06	1.63E-09	0.00E+00
TEEN	4.87E-08	2.22E-07	8.75E-08	4.92E-08	2.79E-08	3.37E-06	3.05E-09	0.00E+00
CHILD	8.71E-08	1.50E-07	2.11E-07	8.14E-08	4.52E-08	6.45E-06	4.63E-09	0.00E+00
MEAT								
ADULT	6.42E-09	4.79E-08	1.68E-09	3.87E-09	7.49E-10	6.69E-08	1.32E-10	0.00E+00
TEEN	4.81E-09	2.58E-08	1.40E-09	3.05E-09	6.09E-10	4.85E-08	1.25E-10	0.00E+00
CHILD	7.14E-09	1.31E-08	2.59E-09	3.78E-09	7.73E-10	7.32E-08	1.47E-10	0.00E+00
COW MILK								
ADULT	1.11E-08	1.33E-08	1.30E-08	1.64E-08	1.36E-08	1.90E-06	1.12E-09	0.00E+00
TEEN	1.38E-08	1.61E-08	2.37E-08	2.90E-08	2.42E-08	3.00E-06	2.31E-09	0.00E+00
CHILD	1.93E-08	1.12E-08	5.73E-08	5.02E-08	4.03E-08	5.96E-06	3.55E-09	0.00E+00
INFANT	3.11E-08	1.03E-08	1.03E-07	1.07E-07	6.88E-08	1.45E-05	6.43E-09	0.00E+00
GOATMILK								
ADULT	2.37E-08	4.50E-09	2.94E-08	3.70E-08	2.24E-08	2.27E-06	3.35E-09	0.00E+00
TEEN	2.53E-08	5.87E-09	5.33E-08	6.53E-08	3.98E-08	3.60E-06	6.93E-09	0.00E+00
CHILD	2.66E-08	4.52E-09	1.29E-07	1.13E-07	6.61E-08	7.15E-06	1.07E-08	0.00E+00
INFANT	3.75E-08	4.39E-09	2.20E-07	2.32E-07	1.11E-07	1.74E-05	1.93E-08	0.00E+00
INHAL								
ADULT	1.67E-09	3.32E-08	2.40E-09	2.99E-09	3.91E-09	4.65E-07	1.96E-07	0.00E+00
TEEN	2.04E-09	4.38E-08	3.38E-09	4.09E-09	5.41E-09	5.96E-07	2.91E-07	0.00E+00
CHILD	2.14E-09	7.35E-08	4.59E-09	3.97E-09	5.07E-09	7.15E-07	2.38E-07	0.00E+00
INFANT	1.38E-09	5.46E-08	3.43E-09	3.46E-09	3.34E-09	6.57E-07	1.62E-07	0.00E+00

TABLE 1. DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-MARCH 2019 (Continued)

SPECIAL LOCATION NO. 5A Nearest Garden
AT 1.90 MILES WNW

ANNUAL BETA AIR DOSE = 2.51E-04 MILLRADS
ANNUAL GAMMA AIR DOSE = 4.00E-04 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	2.68E-04	2.68E-04	2.68E-04	2.68E-04	2.68E-04	2.68E-04	2.71E-04	5.32E-04
GROUND	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	7.60E-06	8.94E-06
VEGET								
ADULT	2.28E-07	1.25E-06	4.69E-07	2.15E-07	1.47E-07	2.16E-05	1.09E-08	0.00E+00
TEEN	3.07E-07	1.36E-06	7.65E-07	3.34E-07	2.25E-07	2.90E-05	2.04E-08	0.00E+00
CHILD	5.44E-07	9.32E-07	1.84E-06	5.56E-07	3.64E-07	5.56E-05	3.10E-08	0.00E+00
MEAT								
ADULT	3.69E-08	2.69E-07	1.33E-08	2.34E-08	5.68E-09	5.77E-07	8.84E-10	0.00E+00
TEEN	2.74E-08	1.45E-07	1.11E-08	1.85E-08	4.62E-09	4.18E-07	8.37E-10	0.00E+00
CHILD	4.03E-08	7.39E-08	2.05E-08	2.30E-08	5.86E-09	6.31E-07	9.83E-10	0.00E+00
COW MILK								
ADULT	7.92E-08	8.30E-08	9.92E-08	1.21E-07	1.11E-07	1.63E-05	7.46E-09	0.00E+00
TEEN	1.01E-07	1.02E-07	1.80E-07	2.13E-07	1.97E-07	2.59E-05	1.54E-08	0.00E+00
CHILD	1.45E-07	7.27E-08	4.37E-07	3.69E-07	3.28E-07	5.14E-05	2.37E-08	0.00E+00
INFANT	2.39E-07	6.72E-08	7.98E-07	8.01E-07	5.61E-07	1.25E-04	4.29E-08	0.00E+00
GOATMILK								
ADULT	1.66E-07	3.42E-08	2.13E-07	2.60E-07	1.73E-07	1.96E-05	2.24E-08	0.00E+00
TEEN	1.82E-07	4.50E-08	3.86E-07	4.60E-07	3.08E-07	3.11E-05	4.62E-08	0.00E+00
CHILD	2.02E-07	3.52E-08	9.35E-07	7.98E-07	5.12E-07	6.16E-05	7.11E-08	0.00E+00
INFANT	2.97E-07	3.45E-08	1.62E-06	1.65E-06	8.64E-07	1.50E-04	1.29E-07	0.00E+00
INHAL								
ADULT	4.87E-09	1.15E-07	8.25E-09	9.28E-09	1.32E-08	1.60E-06	4.45E-07	0.00E+00
TEEN	6.00E-09	1.58E-07	1.16E-08	1.27E-08	1.82E-08	2.05E-06	6.66E-07	0.00E+00
CHILD	6.38E-09	2.85E-07	1.58E-08	1.24E-08	1.71E-08	2.45E-06	5.48E-07	0.00E+00
INFANT	4.23E-09	2.14E-07	1.19E-08	1.10E-08	1.13E-08	2.25E-06	3.90E-07	0.00E+00

TABLE 2. DOSES TO MAXIMUM INDIVIDUAL (MREM), APRIL-JUNE 2019

SPECIAL LOCATION NO. 1A Site Boundary
AT .60 MILES NNE

ANNUAL BETA AIR DOSE = 3.14E-07 MILLRADS
ANNUAL GAMMA AIR DOSE = 6.47E-07 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	4.33E-07	4.33E-07	4.33E-07	4.33E-07	4.33E-07	4.33E-07	4.36E-07	7.74E-07
GROUND	4.87E-04	4.87E-04	4.87E-04	4.87E-04	4.87E-04	4.87E-04	4.87E-04	5.73E-04
VEGET								
ADULT	1.34E-05	6.11E-05	7.08E-06	1.29E-05	3.53E-06	5.54E-05	1.06E-06	0.00E+00
TEEN	1.66E-05	6.51E-05	1.16E-05	2.04E-05	5.62E-06	7.39E-05	1.99E-06	0.00E+00
CHILD	2.66E-05	4.26E-05	2.77E-05	3.41E-05	9.20E-06	1.42E-04	3.02E-06	0.00E+00
MEAT								
ADULT	2.42E-06	1.63E-05	5.65E-07	1.64E-06	2.69E-07	1.45E-06	8.66E-08	0.00E+00
TEEN	1.74E-06	8.79E-06	4.69E-07	1.30E-06	2.18E-07	1.05E-06	8.20E-08	0.00E+00
CHILD	2.48E-06	4.44E-06	8.64E-07	1.63E-06	2.76E-07	1.59E-06	9.63E-08	0.00E+00
COW MILK								
ADULT	4.75E-06	3.74E-06	4.85E-06	6.83E-06	2.45E-06	4.31E-05	7.33E-07	0.00E+00
TEEN	4.84E-06	4.42E-06	8.80E-06	1.20E-05	4.34E-06	6.85E-05	1.51E-06	0.00E+00
CHILD	4.64E-06	2.95E-06	2.12E-05	2.08E-05	7.20E-06	1.37E-04	2.33E-06	0.00E+00
INFANT	5.61E-06	2.61E-06	3.40E-05	4.09E-05	1.17E-05	3.33E-04	4.21E-06	0.00E+00
GOATMILK								
ADULT	1.29E-05	8.67E-07	1.44E-05	1.97E-05	6.91E-06	5.17E-05	2.20E-06	0.00E+00
TEEN	1.22E-05	1.08E-06	2.61E-05	3.47E-05	1.22E-05	8.21E-05	4.54E-06	0.00E+00
CHILD	9.26E-06	7.78E-07	6.28E-05	6.02E-05	2.03E-05	1.65E-04	6.98E-06	0.00E+00
INFANT	9.08E-06	7.29E-07	1.00E-04	1.18E-04	3.27E-05	4.00E-04	1.26E-05	0.00E+00
INHAL								
ADULT	1.46E-07	1.03E-06	1.12E-07	1.97E-07	1.07E-07	6.65E-06	2.11E-05	0.00E+00
TEEN	1.46E-07	9.43E-07	1.57E-07	2.67E-07	1.48E-07	8.75E-06	3.09E-05	0.00E+00
CHILD	1.25E-07	3.63E-07	2.13E-07	2.55E-07	1.38E-07	1.10E-05	2.50E-05	0.00E+00
INFANT	6.56E-08	1.27E-07	1.37E-07	1.93E-07	8.87E-08	1.01E-05	1.60E-05	0.00E+00

TABLE 2. DOSES TO MAXIMUM INDIVIDUAL (MREM), APRIL-JUNE 2019 (Continued)

SPECIAL LOCATION NO. 2A Site Boundary
AT .54 MILES ESE

ANNUAL BETA AIR DOSE = 5.30E-08 MILLRADS
ANNUAL GAMMA AIR DOSE = 1.09E-07 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	7.30E-08	7.30E-08	7.30E-08	7.30E-08	7.30E-08	7.30E-08	7.35E-08	1.31E-07
GROUND	2.44E-04	2.44E-04	2.44E-04	2.44E-04	2.44E-04	2.44E-04	2.44E-04	2.87E-04
VEGET								
ADULT	6.69E-06	3.06E-05	3.52E-06	6.46E-06	1.76E-06	2.59E-05	5.30E-07	0.00E+00
TEEN	8.27E-06	3.26E-05	5.77E-06	1.02E-05	2.80E-06	3.46E-05	9.93E-07	0.00E+00
CHILD	1.33E-05	2.13E-05	1.38E-05	1.71E-05	4.58E-06	6.62E-05	1.51E-06	0.00E+00
MEAT								
ADULT	1.21E-06	8.17E-06	2.82E-07	8.21E-07	1.34E-07	6.79E-07	4.33E-08	0.00E+00
TEEN	8.68E-07	4.40E-06	2.34E-07	6.50E-07	1.09E-07	4.92E-07	4.10E-08	0.00E+00
CHILD	1.24E-06	2.22E-06	4.32E-07	8.14E-07	1.38E-07	7.43E-07	4.82E-08	0.00E+00
COW MILK								
ADULT	2.37E-06	1.87E-06	2.42E-06	3.41E-06	1.22E-06	2.02E-05	3.67E-07	0.00E+00
TEEN	2.42E-06	2.21E-06	4.39E-06	6.01E-06	2.16E-06	3.21E-05	7.57E-07	0.00E+00
CHILD	2.31E-06	1.47E-06	1.06E-05	1.04E-05	3.58E-06	6.44E-05	1.16E-06	0.00E+00
INFANT	2.79E-06	1.30E-06	1.70E-05	2.04E-05	5.80E-06	1.56E-04	2.11E-06	0.00E+00
GOATMILK								
ADULT	6.45E-06	4.32E-07	7.18E-06	9.84E-06	3.45E-06	2.42E-05	1.10E-06	0.00E+00
TEEN	6.10E-06	5.37E-07	1.30E-05	1.73E-05	6.10E-06	3.85E-05	2.27E-06	0.00E+00
CHILD	4.62E-06	3.87E-07	3.14E-05	3.01E-05	1.01E-05	7.73E-05	3.49E-06	0.00E+00
INFANT	4.52E-06	3.62E-07	5.02E-05	5.88E-05	1.63E-05	1.88E-04	6.32E-06	0.00E+00
INHAL								
ADULT	1.25E-07	8.86E-07	9.63E-08	1.69E-07	9.24E-08	5.72E-06	1.82E-05	0.00E+00
TEEN	1.26E-07	8.10E-07	1.35E-07	2.30E-07	1.27E-07	7.52E-06	2.65E-05	0.00E+00
CHILD	1.08E-07	3.05E-07	1.83E-07	2.19E-07	1.19E-07	9.44E-06	2.15E-05	0.00E+00
INFANT	5.64E-08	1.03E-07	1.18E-07	1.66E-07	7.63E-08	8.70E-06	1.37E-05	0.00E+00

TABLE 2. DOSES TO MAXIMUM INDIVIDUAL (MREM), APRIL-JUNE 2019 (Continued)

SPECIAL LOCATION NO. 3A Nearest Resident
AT .90 MILES NW

ANNUAL BETA AIR DOSE = 1.34E-05 MILLRADS
ANNUAL GAMMA AIR DOSE = 2.77E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.85E-05	1.85E-05	1.85E-05	1.85E-05	1.85E-05	1.85E-05	1.87E-05	3.32E-05
GROUND	1.51E-04	1.51E-04	1.51E-04	1.51E-04	1.51E-04	1.51E-04	1.51E-04	1.78E-04
VEGET								
ADULT	4.25E-06	1.91E-05	2.76E-06	4.16E-06	1.34E-06	6.37E-05	3.29E-07	0.00E+00
TEEN	5.27E-06	2.04E-05	4.53E-06	6.56E-06	2.12E-06	8.55E-05	6.17E-07	0.00E+00
CHILD	8.50E-06	1.33E-05	1.08E-05	1.10E-05	3.45E-06	1.64E-04	9.38E-07	0.00E+00
MEAT								
ADULT	7.54E-07	5.07E-06	1.83E-07	5.14E-07	8.99E-08	1.69E-06	2.69E-08	0.00E+00
TEEN	5.41E-07	2.73E-06	1.52E-07	4.06E-07	7.29E-08	1.23E-06	2.54E-08	0.00E+00
CHILD	7.74E-07	1.38E-06	2.80E-07	5.10E-07	9.24E-08	1.85E-06	2.99E-08	0.00E+00
COW MILK								
ADULT	1.54E-06	1.20E-06	1.60E-06	2.23E-06	9.50E-07	4.85E-05	2.27E-07	0.00E+00
TEEN	1.61E-06	1.42E-06	2.91E-06	3.93E-06	1.68E-06	7.69E-05	4.70E-07	0.00E+00
CHILD	1.63E-06	9.57E-07	7.01E-06	6.80E-06	2.80E-06	1.53E-04	7.23E-07	0.00E+00
INFANT	2.11E-06	8.50E-07	1.15E-05	1.35E-05	4.60E-06	3.72E-04	1.31E-06	0.00E+00
GOATMILK								
ADULT	4.08E-06	3.16E-07	4.60E-06	6.24E-06	2.37E-06	5.82E-05	6.82E-07	0.00E+00
TEEN	3.92E-06	3.98E-07	8.34E-06	1.10E-05	4.20E-06	9.23E-05	1.41E-06	0.00E+00
CHILD	3.11E-06	2.93E-07	2.01E-05	1.91E-05	6.97E-06	1.84E-04	2.17E-06	0.00E+00
INFANT	3.26E-06	2.77E-07	3.24E-05	3.75E-05	1.13E-05	4.46E-04	3.92E-06	0.00E+00
INHAL								
ADULT	3.28E-08	2.31E-07	2.69E-08	4.63E-08	2.99E-08	2.22E-06	4.47E-06	0.00E+00
TEEN	3.37E-08	2.55E-07	3.78E-08	6.29E-08	4.12E-08	2.89E-06	6.54E-06	0.00E+00
CHILD	2.97E-08	5.06E-07	5.12E-08	6.02E-08	3.86E-08	3.56E-06	5.30E-06	0.00E+00
INFANT	1.62E-08	4.04E-07	3.39E-08	4.66E-08	2.49E-08	3.28E-06	3.40E-06	0.00E+00

TABLE 2. DOSES TO MAXIMUM INDIVIDUAL (MREM), APRIL-JUNE 2019 (Continued)

SPECIAL LOCATION NO. 4A Nearest Cow
AT 3.50 MILES NNW

ANNUAL BETA AIR DOSE = 4.89E-06 MILLRADS
ANNUAL GAMMA AIR DOSE = 1.01E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	6.74E-06	6.74E-06	6.74E-06	6.74E-06	6.74E-06	6.74E-06	6.79E-06	1.21E-05
GROUND	5.97E-06	5.97E-06	5.97E-06	5.97E-06	5.97E-06	5.97E-06	5.97E-06	7.02E-06
VEGET								
ADULT	1.68E-07	7.54E-07	1.10E-07	1.64E-07	5.36E-08	2.64E-06	1.30E-08	0.00E+00
TEEN	2.08E-07	8.04E-07	1.81E-07	2.59E-07	8.45E-08	3.54E-06	2.43E-08	0.00E+00
CHILD	3.36E-07	5.26E-07	4.33E-07	4.33E-07	1.38E-07	6.78E-06	3.70E-08	0.00E+00
MEAT								
ADULT	2.97E-08	2.00E-07	7.23E-09	2.03E-08	3.56E-09	7.02E-08	1.06E-09	0.00E+00
TEEN	2.13E-08	1.08E-07	6.00E-09	1.60E-08	2.89E-09	5.08E-08	1.00E-09	0.00E+00
CHILD	3.05E-08	5.44E-08	1.11E-08	2.01E-08	3.66E-09	7.67E-08	1.18E-09	0.00E+00
COW MILK								
ADULT	6.08E-08	4.74E-08	6.35E-08	8.83E-08	3.80E-08	2.01E-06	8.97E-09	0.00E+00
TEEN	6.37E-08	5.63E-08	1.15E-07	1.56E-07	6.73E-08	3.18E-06	1.85E-08	0.00E+00
CHILD	6.50E-08	3.78E-08	2.78E-07	2.69E-07	1.12E-07	6.33E-06	2.85E-08	0.00E+00
INFANT	8.41E-08	3.36E-08	4.54E-07	5.36E-07	1.84E-07	1.54E-05	5.16E-08	0.00E+00
GOATMILK								
ADULT	1.61E-07	1.26E-08	1.82E-07	2.47E-07	9.42E-08	2.41E-06	2.69E-08	0.00E+00
TEEN	1.55E-07	1.59E-08	3.30E-07	4.35E-07	1.67E-07	3.82E-06	5.56E-08	0.00E+00
CHILD	1.23E-07	1.17E-08	7.94E-07	7.54E-07	2.77E-07	7.60E-06	8.55E-08	0.00E+00
INFANT	1.30E-07	1.11E-08	1.28E-06	1.48E-06	4.50E-07	1.85E-05	1.55E-07	0.00E+00
INHAL								
ADULT	2.81E-09	1.92E-08	2.78E-09	4.50E-09	4.14E-09	3.92E-07	3.06E-07	0.00E+00
TEEN	3.08E-09	3.23E-08	3.91E-09	6.15E-09	5.72E-09	5.04E-07	4.50E-07	0.00E+00
CHILD	2.95E-09	1.49E-07	5.30E-09	5.94E-09	5.36E-09	6.10E-07	3.66E-07	0.00E+00
INFANT	1.78E-09	1.28E-07	3.73E-09	4.91E-09	3.50E-09	5.60E-07	2.40E-07	0.00E+00

TABLE 2. DOSES TO MAXIMUM INDIVIDUAL (MREM), APRIL-JUNE 2019 (Continued)

SPECIAL LOCATION NO. 5A Nearest Garden
AT 1.90 MILES WNW

ANNUAL BETA AIR DOSE = 1.10E-05 MILLRADS
ANNUAL GAMMA AIR DOSE = 2.27E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.52E-05	1.52E-05	1.52E-05	1.52E-05	1.52E-05	1.52E-05	1.53E-05	2.71E-05
GROUND	2.52E-05	2.52E-05	2.52E-05	2.52E-05	2.52E-05	2.52E-05	2.52E-05	2.97E-05
VEGET								
ADULT	7.15E-07	3.19E-06	5.00E-07	7.03E-07	2.41E-07	1.39E-05	5.48E-08	0.00E+00
TEEN	8.89E-07	3.40E-06	8.21E-07	1.11E-06	3.79E-07	1.87E-05	1.03E-07	0.00E+00
CHILD	1.44E-06	2.23E-06	1.97E-06	1.85E-06	6.18E-07	3.58E-05	1.56E-07	0.00E+00
MEAT								
ADULT	1.26E-07	8.46E-07	3.10E-08	8.59E-08	1.55E-08	3.71E-07	4.48E-09	0.00E+00
TEEN	9.02E-08	4.55E-07	2.57E-08	6.79E-08	1.25E-08	2.69E-07	4.24E-09	0.00E+00
CHILD	1.29E-07	2.30E-07	4.75E-08	8.52E-08	1.59E-08	4.06E-07	4.98E-09	0.00E+00
COW MILK								
ADULT	2.61E-07	2.02E-07	2.74E-07	3.80E-07	1.72E-07	1.06E-05	3.79E-08	0.00E+00
TEEN	2.75E-07	2.41E-07	4.97E-07	6.69E-07	3.05E-07	1.68E-05	7.84E-08	0.00E+00
CHILD	2.86E-07	1.62E-07	1.20E-06	1.16E-06	5.06E-07	3.34E-05	1.20E-07	0.00E+00
INFANT	3.77E-07	1.45E-07	1.97E-06	2.31E-06	8.36E-07	8.11E-05	2.18E-07	0.00E+00
GOATMILK								
ADULT	6.86E-07	5.59E-08	7.76E-07	1.05E-06	4.11E-07	1.27E-05	1.14E-07	0.00E+00
TEEN	6.62E-07	7.08E-08	1.41E-06	1.85E-06	7.29E-07	2.01E-05	2.35E-07	0.00E+00
CHILD	5.35E-07	5.25E-08	3.39E-06	3.21E-06	1.21E-06	4.01E-05	3.61E-07	0.00E+00
INFANT	5.75E-07	4.98E-08	5.49E-06	6.33E-06	1.97E-06	9.73E-05	6.54E-07	0.00E+00
INHAL								
ADULT	7.46E-09	5.17E-08	7.14E-09	1.17E-08	1.01E-08	9.31E-07	8.54E-07	0.00E+00
TEEN	8.09E-09	8.21E-08	1.00E-08	1.59E-08	1.40E-08	1.20E-06	1.25E-06	0.00E+00
CHILD	7.64E-09	3.54E-07	1.36E-08	1.53E-08	1.31E-08	1.45E-06	1.02E-06	0.00E+00
INFANT	4.53E-09	3.04E-07	9.49E-09	1.25E-08	8.55E-09	1.33E-06	6.65E-07	0.00E+00

TABLE 3. DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-JUNE 2019

SPECIAL LOCATION NO. 1A Site Boundary
AT .67 MILES N

ANNUAL BETA AIR DOSE = 3.29E-05 MILLRADS
ANNUAL GAMMA AIR DOSE = 3.41E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	2.27E-05	2.27E-05	2.27E-05	2.27E-05	2.27E-05	2.27E-05	2.30E-05	5.26E-05
GROUND	4.86E-04	4.86E-04	4.86E-04	4.86E-04	4.86E-04	4.86E-04	4.86E-04	5.72E-04
VEGET								
ADULT	1.25E-05	6.16E-05	6.31E-06	1.16E-05	3.25E-06	9.78E-05	8.93E-07	0.00E+00
TEEN	1.59E-05	6.56E-05	1.03E-05	1.83E-05	5.15E-06	1.31E-04	1.67E-06	0.00E+00
CHILD	2.63E-05	4.29E-05	2.47E-05	3.04E-05	8.42E-06	2.51E-04	2.55E-06	0.00E+00
MEAT								
ADULT	2.35E-06	1.64E-05	4.83E-07	1.53E-06	2.34E-07	2.59E-06	7.30E-08	0.00E+00
TEEN	1.71E-06	8.84E-06	4.01E-07	1.21E-06	1.89E-07	1.87E-06	6.91E-08	0.00E+00
CHILD	2.48E-06	4.46E-06	7.39E-07	1.51E-06	2.40E-07	2.83E-06	8.11E-08	0.00E+00
COW MILK								
ADULT	4.14E-06	3.78E-06	4.18E-06	5.91E-06	2.28E-06	7.52E-05	6.18E-07	0.00E+00
TEEN	4.31E-06	4.47E-06	7.58E-06	1.04E-05	4.03E-06	1.19E-04	1.28E-06	0.00E+00
CHILD	4.37E-06	2.99E-06	1.83E-05	1.80E-05	6.70E-06	2.38E-04	1.96E-06	0.00E+00
INFANT	5.52E-06	2.64E-06	2.96E-05	3.55E-05	1.09E-05	5.78E-04	3.55E-06	0.00E+00
GOATMILK								
ADULT	1.10E-05	8.49E-07	1.22E-05	1.67E-05	6.08E-06	9.02E-05	1.85E-06	0.00E+00
TEEN	1.04E-05	1.06E-06	2.22E-05	2.95E-05	1.08E-05	1.43E-04	3.83E-06	0.00E+00
CHILD	8.09E-06	7.65E-07	5.34E-05	5.12E-05	1.78E-05	2.86E-04	5.88E-06	0.00E+00
INFANT	8.18E-06	7.16E-07	8.57E-05	1.00E-04	2.89E-05	6.94E-04	1.06E-05	0.00E+00
INHAL								
ADULT	1.72E-07	1.31E-06	1.31E-07	2.37E-07	1.49E-07	1.13E-05	2.66E-05	0.00E+00
TEEN	1.79E-07	1.20E-06	1.84E-07	3.21E-07	2.06E-07	1.47E-05	3.89E-05	0.00E+00
CHILD	1.61E-07	4.73E-07	2.49E-07	3.06E-07	1.92E-07	1.82E-05	3.15E-05	0.00E+00
INFANT	8.66E-08	1.70E-07	1.64E-07	2.35E-07	1.24E-07	1.68E-05	2.01E-05	0.00E+00

TABLE 3. DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-JUNE 2019 (Continued)

SPECIAL LOCATION NO. 2A Site Boundary
AT .54 MILES ESE

ANNUAL BETA AIR DOSE = 2.45E-05 MILLRADS
ANNUAL GAMMA AIR DOSE = 2.23E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.48E-05	1.48E-05	1.48E-05	1.48E-05	1.48E-05	1.48E-05	1.51E-05	3.63E-05
GROUND	3.73E-04	3.73E-04	3.73E-04	3.73E-04	3.73E-04	3.73E-04	3.73E-04	4.39E-04
VEGET								
ADULT	9.60E-06	4.73E-05	4.78E-06	8.88E-06	2.48E-06	7.17E-05	6.85E-07	0.00E+00
TEEN	1.22E-05	5.03E-05	7.83E-06	1.40E-05	3.92E-06	9.60E-05	1.28E-06	0.00E+00
CHILD	2.01E-05	3.29E-05	1.87E-05	2.33E-05	6.41E-06	1.84E-04	1.95E-06	0.00E+00
MEAT								
ADULT	1.81E-06	1.26E-05	3.70E-07	1.17E-06	1.79E-07	1.90E-06	5.60E-08	0.00E+00
TEEN	1.31E-06	6.78E-06	3.07E-07	9.26E-07	1.45E-07	1.37E-06	5.30E-08	0.00E+00
CHILD	1.90E-06	3.42E-06	5.65E-07	1.16E-06	1.84E-07	2.07E-06	6.22E-08	0.00E+00
COW MILK								
ADULT	3.17E-06	2.90E-06	3.20E-06	4.52E-06	1.73E-06	5.51E-05	4.74E-07	0.00E+00
TEEN	3.30E-06	3.43E-06	5.80E-06	7.97E-06	3.07E-06	8.75E-05	9.79E-07	0.00E+00
CHILD	3.33E-06	2.29E-06	1.40E-05	1.38E-05	5.09E-06	1.75E-04	1.50E-06	0.00E+00
INFANT	4.21E-06	2.02E-06	2.26E-05	2.72E-05	8.31E-06	4.24E-04	2.72E-06	0.00E+00
GOATMILK								
ADULT	8.40E-06	6.48E-07	9.37E-06	1.28E-05	4.64E-06	6.62E-05	1.42E-06	0.00E+00
TEEN	8.00E-06	8.06E-07	1.70E-05	2.26E-05	8.21E-06	1.05E-04	2.94E-06	0.00E+00
CHILD	6.18E-06	5.82E-07	4.09E-05	3.92E-05	1.36E-05	2.10E-04	4.51E-06	0.00E+00
INFANT	6.24E-06	5.45E-07	6.57E-05	7.69E-05	2.21E-05	5.09E-04	8.16E-06	0.00E+00
INHAL								
ADULT	1.52E-07	1.15E-06	1.16E-07	2.09E-07	1.32E-07	1.00E-05	2.34E-05	0.00E+00
TEEN	1.58E-07	1.06E-06	1.62E-07	2.84E-07	1.82E-07	1.31E-05	3.43E-05	0.00E+00
CHILD	1.42E-07	4.06E-07	2.20E-07	2.71E-07	1.70E-07	1.62E-05	2.78E-05	0.00E+00
INFANT	7.65E-08	1.40E-07	1.45E-07	2.08E-07	1.10E-07	1.49E-05	1.77E-05	0.00E+00

TABLE 3. DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-JUNE 2019 (Continued)

SPECIAL LOCATION NO. 3A Nearest Resident
AT .90 MILES NW

ANNUAL BETA AIR DOSE = 2.77E-04 MILLRADS
ANNUAL GAMMA AIR DOSE = 4.42E-04 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	2.97E-04	2.97E-04	2.97E-04	2.97E-04	2.97E-04	2.97E-04	2.99E-04	5.87E-04
GROUND	2.04E-04	2.04E-04	2.04E-04	2.04E-04	2.04E-04	2.04E-04	2.04E-04	2.40E-04
VEGET								
ADULT	5.63E-06	2.71E-05	4.89E-06	5.39E-06	2.04E-06	1.59E-04	3.94E-07	0.00E+00
TEEN	7.16E-06	2.90E-05	8.00E-06	8.47E-06	3.19E-06	2.13E-04	7.37E-07	0.00E+00
CHILD	1.19E-05	1.92E-05	1.92E-05	1.41E-05	5.19E-06	4.08E-04	1.12E-06	0.00E+00
MEAT								
ADULT	1.00E-06	6.92E-06	2.50E-07	6.64E-07	1.19E-07	4.23E-06	3.21E-08	0.00E+00
TEEN	7.26E-07	3.72E-06	2.08E-07	5.25E-07	9.65E-08	3.06E-06	3.04E-08	0.00E+00
CHILD	1.05E-06	1.88E-06	3.84E-07	6.56E-07	1.22E-07	4.62E-06	3.57E-08	0.00E+00
COW MILK								
ADULT	1.97E-06	1.71E-06	2.11E-06	2.87E-06	1.47E-06	1.20E-04	2.72E-07	0.00E+00
TEEN	2.14E-06	2.05E-06	3.83E-06	5.06E-06	2.61E-06	1.91E-04	5.62E-07	0.00E+00
CHILD	2.38E-06	1.39E-06	9.25E-06	8.76E-06	4.34E-06	3.79E-04	8.64E-07	0.00E+00
INFANT	3.30E-06	1.25E-06	1.55E-05	1.77E-05	7.24E-06	9.21E-04	1.56E-06	0.00E+00
GOATMILK								
ADULT	5.01E-06	4.89E-07	5.75E-06	7.70E-06	3.24E-06	1.44E-04	8.16E-07	0.00E+00
TEEN	4.91E-06	6.24E-07	1.04E-05	1.36E-05	5.74E-06	2.29E-04	1.69E-06	0.00E+00
CHILD	4.14E-06	4.68E-07	2.52E-05	2.35E-05	9.53E-06	4.55E-04	2.59E-06	0.00E+00
INFANT	4.71E-06	4.47E-07	4.11E-05	4.67E-05	1.56E-05	1.11E-03	4.69E-06	0.00E+00
INHAL								
ADULT	5.14E-08	4.68E-07	4.55E-08	7.49E-08	5.79E-08	5.18E-06	7.27E-06	0.00E+00
TEEN	5.48E-08	5.20E-07	6.39E-08	1.02E-07	8.00E-08	6.71E-06	1.06E-05	0.00E+00
CHILD	5.05E-08	7.50E-07	8.66E-08	9.76E-08	7.49E-08	8.19E-06	8.64E-06	0.00E+00
INFANT	2.85E-08	5.57E-07	5.92E-08	7.74E-08	4.87E-08	7.53E-06	5.57E-06	0.00E+00

TABLE 3. DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-JUNE 2019 (Continued)

SPECIAL LOCATION NO. 4A Nearest Cow
AT 3.50 MILES NNW

ANNUAL BETA AIR DOSE = 4.12E-05 MILLRADS
ANNUAL GAMMA AIR DOSE = 5.80E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.90E-05	3.94E-05	8.09E-05
GROUND	6.68E-06	6.68E-06	6.68E-06	6.68E-06	6.68E-06	6.68E-06	6.68E-06	7.86E-06
VEGET								
ADULT	1.87E-07	8.95E-07	1.72E-07	1.79E-07	7.02E-08	5.76E-06	1.30E-08	0.00E+00
TEEN	2.37E-07	9.58E-07	2.81E-07	2.82E-07	1.10E-07	7.74E-06	2.44E-08	0.00E+00
CHILD	3.93E-07	6.34E-07	6.73E-07	4.70E-07	1.78E-07	1.48E-05	3.71E-08	0.00E+00
MEAT								
ADULT	3.29E-08	2.27E-07	8.44E-09	2.19E-08	4.00E-09	1.54E-07	1.06E-09	0.00E+00
TEEN	2.38E-08	1.22E-07	7.01E-09	1.73E-08	3.25E-09	1.11E-07	1.00E-09	0.00E+00
CHILD	3.44E-08	6.18E-08	1.29E-08	2.16E-08	4.12E-09	1.68E-07	1.18E-09	0.00E+00
COW MILK								
ADULT	6.57E-08	5.67E-08	7.10E-08	9.60E-08	5.07E-08	4.37E-06	8.98E-09	0.00E+00
TEEN	7.19E-08	6.79E-08	1.29E-07	1.69E-07	9.00E-08	6.92E-06	1.86E-08	0.00E+00
CHILD	8.05E-08	4.63E-08	3.11E-07	2.93E-07	1.50E-07	1.37E-05	2.85E-08	0.00E+00
INFANT	1.13E-07	4.15E-08	5.22E-07	5.94E-07	2.50E-07	3.34E-05	5.16E-08	0.00E+00
GOATMILK								
ADULT	1.66E-07	1.66E-08	1.92E-07	2.56E-07	1.09E-07	5.24E-06	2.69E-08	0.00E+00
TEEN	1.64E-07	2.13E-08	3.48E-07	4.51E-07	1.94E-07	8.30E-06	5.57E-08	0.00E+00
CHILD	1.39E-07	1.60E-08	8.39E-07	7.82E-07	3.22E-07	1.65E-05	8.56E-08	0.00E+00
INFANT	1.60E-07	1.53E-08	1.37E-06	1.55E-06	5.29E-07	4.01E-05	1.55E-07	0.00E+00
INHAL								
ADULT	5.14E-09	6.50E-08	6.05E-09	8.37E-09	8.74E-09	9.46E-07	5.89E-07	0.00E+00
TEEN	5.73E-09	8.38E-08	8.51E-09	1.14E-08	1.21E-08	1.21E-06	8.67E-07	0.00E+00
CHILD	5.55E-09	1.59E-07	1.16E-08	1.10E-08	1.13E-08	1.46E-06	7.06E-07	0.00E+00
INFANT	3.37E-09	1.22E-07	8.27E-09	9.21E-09	7.41E-09	1.34E-06	4.68E-07	0.00E+00

TABLE 3. DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-JUNE 2019 (Continued)

SPECIAL LOCATION NO. 5A Nearest Garden
AT 1.90 MILES WNW

ANNUAL BETA AIR DOSE = 2.72E-04 MILLRADS
ANNUAL GAMMA AIR DOSE = 4.38E-04 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	2.94E-04	2.94E-04	2.94E-04	2.94E-04	2.94E-04	2.94E-04	2.96E-04	5.79E-04
GROUND	3.18E-05	3.18E-05	3.18E-05	3.18E-05	3.18E-05	3.18E-05	3.18E-05	3.74E-05
VEGET								
ADULT	9.22E-07	4.37E-06	1.03E-06	9.01E-07	3.98E-07	3.85E-05	6.35E-08	0.00E+00
TEEN	1.17E-06	4.69E-06	1.68E-06	1.41E-06	6.18E-07	5.17E-05	1.19E-07	0.00E+00
CHILD	1.94E-06	3.12E-06	4.03E-06	2.36E-06	1.00E-06	9.91E-05	1.81E-07	0.00E+00
MEAT								
ADULT	1.58E-07	1.08E-06	4.45E-08	1.06E-07	2.10E-08	1.03E-06	5.19E-09	0.00E+00
TEEN	1.14E-07	5.82E-07	3.70E-08	8.39E-08	1.70E-08	7.45E-07	4.91E-09	0.00E+00
CHILD	1.64E-07	2.95E-07	6.84E-08	1.05E-07	2.16E-08	1.12E-06	5.77E-09	0.00E+00
COW MILK								
ADULT	3.34E-07	2.81E-07	3.71E-07	4.93E-07	2.90E-07	2.92E-05	4.39E-08	0.00E+00
TEEN	3.73E-07	3.39E-07	6.74E-07	8.71E-07	5.15E-07	4.62E-05	9.07E-08	0.00E+00
CHILD	4.34E-07	2.33E-07	1.63E-06	1.51E-06	8.57E-07	9.18E-05	1.39E-07	0.00E+00
INFANT	6.30E-07	2.11E-07	2.77E-06	3.09E-06	1.44E-06	2.23E-04	2.52E-07	0.00E+00
GOATMILK								
ADULT	8.30E-07	9.18E-08	9.69E-07	1.28E-06	5.86E-07	3.50E-05	1.32E-07	0.00E+00
TEEN	8.27E-07	1.18E-07	1.76E-06	2.26E-06	1.04E-06	5.55E-05	2.72E-07	0.00E+00
CHILD	7.34E-07	9.01E-08	4.24E-06	3.91E-06	1.72E-06	1.10E-04	4.18E-07	0.00E+00
INFANT	8.83E-07	8.68E-08	7.00E-06	7.81E-06	2.85E-06	2.68E-04	7.56E-07	0.00E+00
INHAL								
ADULT	1.27E-08	1.73E-07	1.58E-08	2.15E-08	2.37E-08	2.55E-06	1.35E-06	0.00E+00
TEEN	1.45E-08	2.45E-07	2.23E-08	2.94E-08	3.27E-08	3.28E-06	1.99E-06	0.00E+00
CHILD	1.43E-08	6.25E-07	3.03E-08	2.85E-08	3.07E-08	3.94E-06	1.63E-06	0.00E+00
INFANT	8.91E-09	5.03E-07	2.19E-08	2.42E-08	2.01E-08	3.62E-06	1.09E-06	0.00E+00

TABLE 4. DOSES TO MAXIMUM INDIVIDUAL (MREM), JULY-SEPTEMBER 2019

SPECIAL LOCATION NO. 1A Site Boundary
AT .67 MILES N

ANNUAL BETA AIR DOSE = 1.13E-06 MILLRADS
ANNUAL GAMMA AIR DOSE = 2.32E-06 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.55E-06	1.55E-06	1.55E-06	1.55E-06	1.55E-06	1.55E-06	1.56E-06	2.78E-06
GROUND	1.92E-03	1.92E-03	1.92E-03	1.92E-03	1.92E-03	1.92E-03	1.92E-03	2.26E-03
VEGET								
ADULT	4.48E-05	2.43E-04	1.90E-05	3.84E-05	1.23E-05	8.51E-04	2.58E-06	0.00E+00
TEEN	5.93E-05	2.58E-04	3.10E-05	6.03E-05	1.93E-05	1.14E-03	4.84E-06	0.00E+00
CHILD	1.03E-04	1.69E-04	7.38E-05	9.98E-05	3.14E-05	2.19E-03	7.37E-06	0.00E+00
MEAT								
ADULT	8.92E-06	6.52E-05	1.42E-06	5.41E-06	7.54E-07	2.28E-05	2.11E-07	0.00E+00
TEEN	6.62E-06	3.51E-05	1.18E-06	4.26E-06	6.11E-07	1.65E-05	2.00E-07	0.00E+00
CHILD	9.76E-06	1.77E-05	2.17E-06	5.27E-06	7.76E-07	2.49E-05	2.35E-07	0.00E+00
COW MILK								
ADULT	1.32E-05	1.51E-05	1.30E-05	1.86E-05	8.86E-06	6.44E-04	1.79E-06	0.00E+00
TEEN	1.45E-05	1.79E-05	2.36E-05	3.28E-05	1.57E-05	1.02E-03	3.69E-06	0.00E+00
CHILD	1.65E-05	1.20E-05	5.68E-05	5.67E-05	2.61E-05	2.03E-03	5.67E-06	0.00E+00
INFANT	2.29E-05	1.06E-05	9.38E-05	1.14E-04	4.33E-05	4.93E-03	1.03E-05	0.00E+00
GOATMILK								
ADULT	3.27E-05	3.36E-06	3.65E-05	5.00E-05	2.03E-05	7.73E-04	5.36E-06	0.00E+00
TEEN	3.18E-05	4.20E-06	6.61E-05	8.83E-05	3.60E-05	1.23E-03	1.11E-05	0.00E+00
CHILD	2.63E-05	3.05E-06	1.59E-04	1.53E-04	5.97E-05	2.43E-03	1.70E-05	0.00E+00
INFANT	2.92E-05	2.86E-06	2.58E-04	3.02E-04	9.76E-05	5.91E-03	3.08E-05	0.00E+00
INHAL								
ADULT	4.35E-07	3.46E-06	3.33E-07	6.10E-07	4.99E-07	5.26E-05	7.02E-05	0.00E+00
TEEN	4.82E-07	3.18E-06	4.67E-07	8.30E-07	6.88E-07	6.72E-05	1.03E-04	0.00E+00
CHILD	4.62E-07	1.26E-06	6.34E-07	7.94E-07	6.45E-07	8.05E-05	8.32E-05	0.00E+00
INFANT	2.62E-07	4.57E-07	4.38E-07	6.31E-07	4.21E-07	7.40E-05	5.31E-05	0.00E+00

TABLE 4. DOSES TO MAXIMUM INDIVIDUAL (MREM), JULY-SEPTEMBER 2019 (Continued)

SPECIAL LOCATION NO. 2A Site Boundary
AT .54 MILES ESE

ANNUAL BETA AIR DOSE = 1.33E-08 MILLRADS
ANNUAL GAMMA AIR DOSE = 2.74E-08 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.83E-08	1.83E-08	1.83E-08	1.83E-08	1.83E-08	1.83E-08	1.84E-08	3.29E-08
GROUND	4.95E-04	4.95E-04	4.95E-04	4.95E-04	4.95E-04	4.95E-04	4.95E-04	5.82E-04
VEGET								
ADULT	1.15E-05	6.25E-05	4.78E-06	9.86E-06	3.13E-06	2.12E-04	6.65E-07	0.00E+00
TEEN	1.53E-05	6.66E-05	7.81E-06	1.55E-05	4.90E-06	2.85E-04	1.25E-06	0.00E+00
CHILD	2.64E-05	4.36E-05	1.86E-05	2.57E-05	8.00E-06	5.47E-04	1.90E-06	0.00E+00
MEAT								
ADULT	2.30E-06	1.68E-05	3.64E-07	1.39E-06	1.93E-07	5.68E-06	5.43E-08	0.00E+00
TEEN	1.71E-06	9.04E-06	3.02E-07	1.10E-06	1.57E-07	4.11E-06	5.14E-08	0.00E+00
CHILD	2.52E-06	4.57E-06	5.57E-07	1.36E-06	1.99E-07	6.21E-06	6.04E-08	0.00E+00
COW MILK								
ADULT	3.38E-06	3.89E-06	3.33E-06	4.78E-06	2.25E-06	1.61E-04	4.60E-07	0.00E+00
TEEN	3.72E-06	4.61E-06	6.04E-06	8.42E-06	3.99E-06	2.55E-04	9.50E-07	0.00E+00
CHILD	4.23E-06	3.09E-06	1.46E-05	1.45E-05	6.63E-06	5.05E-04	1.46E-06	0.00E+00
INFANT	5.85E-06	2.74E-06	2.40E-05	2.92E-05	1.10E-05	1.23E-03	2.64E-06	0.00E+00
GOATMILK								
ADULT	8.40E-06	8.58E-07	9.36E-06	1.29E-05	5.19E-06	1.93E-04	1.38E-06	0.00E+00
TEEN	8.17E-06	1.07E-06	1.70E-05	2.27E-05	9.20E-06	3.05E-04	2.85E-06	0.00E+00
CHILD	6.75E-06	7.77E-07	4.09E-05	3.93E-05	1.53E-05	6.06E-04	4.38E-06	0.00E+00
INFANT	7.45E-06	7.27E-07	6.62E-05	7.77E-05	2.50E-05	1.47E-03	7.93E-06	0.00E+00
INHAL								
ADULT	4.07E-07	3.21E-06	3.14E-07	5.75E-07	4.77E-07	5.06E-05	6.52E-05	0.00E+00
TEEN	4.52E-07	2.95E-06	4.41E-07	7.82E-07	6.58E-07	6.48E-05	9.53E-05	0.00E+00
CHILD	4.34E-07	1.11E-06	5.98E-07	7.48E-07	6.18E-07	7.76E-05	7.72E-05	0.00E+00
INFANT	2.47E-07	3.73E-07	4.15E-07	5.97E-07	4.03E-07	7.12E-05	4.93E-05	0.00E+00

TABLE 4. DOSES TO MAXIMUM INDIVIDUAL (MREM), JULY-SEPTEMBER 2019 (Continued)

SPECIAL LOCATION NO. 3A Nearest Resident
AT .90 MILES NW

ANNUAL BETA AIR DOSE = 1.19E-05 MILLRADS
ANNUAL GAMMA AIR DOSE = 2.46E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.64E-05	1.64E-05	1.64E-05	1.64E-05	1.64E-05	1.64E-05	1.65E-05	2.95E-05
GROUND	4.16E-04	4.16E-04	4.16E-04	4.16E-04	4.16E-04	4.16E-04	4.16E-04	4.90E-04
VEGET								
ADULT	9.93E-06	5.27E-05	5.25E-06	8.64E-06	3.10E-06	2.62E-04	5.70E-07	0.00E+00
TEEN	1.31E-05	5.62E-05	8.58E-06	1.36E-05	4.84E-06	3.53E-04	1.07E-06	0.00E+00
CHILD	2.27E-05	3.68E-05	2.05E-05	2.25E-05	7.88E-06	6.76E-04	1.62E-06	0.00E+00
MEAT								
ADULT	1.94E-06	1.41E-05	3.26E-07	1.18E-06	1.77E-07	7.01E-06	4.65E-08	0.00E+00
TEEN	1.44E-06	7.60E-06	2.71E-07	9.33E-07	1.43E-07	5.08E-06	4.40E-08	0.00E+00
CHILD	2.12E-06	3.84E-06	4.99E-07	1.16E-06	1.82E-07	7.67E-06	5.17E-08	0.00E+00
COW MILK								
ADULT	3.00E-06	3.34E-06	3.03E-06	4.28E-06	2.26E-06	1.99E-04	3.94E-07	0.00E+00
TEEN	3.35E-06	3.97E-06	5.50E-06	7.54E-06	4.01E-06	3.15E-04	8.14E-07	0.00E+00
CHILD	3.93E-06	2.67E-06	1.33E-05	1.30E-05	6.66E-06	6.24E-04	1.25E-06	0.00E+00
INFANT	5.61E-06	2.37E-06	2.22E-05	2.64E-05	1.11E-05	1.52E-03	2.26E-06	0.00E+00
GOATMILK								
ADULT	7.32E-06	8.12E-07	8.27E-06	1.12E-05	4.84E-06	2.38E-04	1.18E-06	0.00E+00
TEEN	7.21E-06	1.02E-06	1.50E-05	1.98E-05	8.58E-06	3.77E-04	2.44E-06	0.00E+00
CHILD	6.18E-06	7.53E-07	3.62E-05	3.44E-05	1.42E-05	7.49E-04	3.75E-06	0.00E+00
INFANT	7.15E-06	7.11E-07	5.90E-05	6.83E-05	2.34E-05	1.82E-03	6.79E-06	0.00E+00
INHAL								
ADULT	7.50E-08	5.96E-07	6.07E-08	1.08E-07	9.52E-08	1.03E-05	1.16E-05	0.00E+00
TEEN	8.38E-08	6.20E-07	8.52E-08	1.48E-07	1.31E-07	1.31E-05	1.69E-05	0.00E+00
CHILD	8.11E-08	8.96E-07	1.16E-07	1.41E-07	1.23E-07	1.57E-05	1.37E-05	0.00E+00
INFANT	4.68E-08	6.77E-07	8.08E-08	1.14E-07	8.05E-08	1.44E-05	8.79E-06	0.00E+00

TABLE 4. DOSES TO MAXIMUM INDIVIDUAL (MREM), JULY-SEPTEMBER 2019 (Continued)

SPECIAL LOCATION NO. 4A Nearest Cow
AT 3.50 MILES NNW

ANNUAL BETA AIR DOSE = 4.78E-06 MILLRADS
ANNUAL GAMMA AIR DOSE = 9.83E-06 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	6.57E-06	6.57E-06	6.57E-06	6.57E-06	6.57E-06	6.57E-06	6.62E-06	1.18E-05
GROUND	1.63E-05	1.63E-05	1.63E-05	1.63E-05	1.63E-05	1.63E-05	1.63E-05	1.91E-05
VEGET								
ADULT	3.93E-07	2.06E-06	2.32E-07	3.45E-07	1.32E-07	1.21E-05	2.25E-08	0.00E+00
TEEN	5.20E-07	2.20E-06	3.80E-07	5.42E-07	2.05E-07	1.63E-05	4.21E-08	0.00E+00
CHILD	8.98E-07	1.44E-06	9.12E-07	8.98E-07	3.34E-07	3.12E-05	6.41E-08	0.00E+00
MEAT								
ADULT	7.59E-08	5.51E-07	1.32E-08	4.66E-08	7.22E-09	3.24E-07	1.84E-09	0.00E+00
TEEN	5.63E-08	2.97E-07	1.10E-08	3.67E-08	5.86E-09	2.35E-07	1.74E-09	0.00E+00
CHILD	8.29E-08	1.50E-07	2.02E-08	4.55E-08	7.43E-09	3.54E-07	2.04E-09	0.00E+00
COW MILK								
ADULT	1.21E-07	1.32E-07	1.24E-07	1.73E-07	9.63E-08	9.17E-06	1.55E-08	0.00E+00
TEEN	1.36E-07	1.57E-07	2.24E-07	3.05E-07	1.71E-07	1.45E-05	3.21E-08	0.00E+00
CHILD	1.62E-07	1.06E-07	5.41E-07	5.27E-07	2.84E-07	2.88E-05	4.94E-08	0.00E+00
INFANT	2.35E-07	9.44E-08	9.11E-07	1.08E-06	4.76E-07	7.01E-05	8.93E-08	0.00E+00
GOATMILK								
ADULT	2.92E-07	3.37E-08	3.32E-07	4.49E-07	2.00E-07	1.10E-05	4.66E-08	0.00E+00
TEEN	2.89E-07	4.27E-08	6.02E-07	7.92E-07	3.54E-07	1.74E-05	9.64E-08	0.00E+00
CHILD	2.53E-07	3.16E-08	1.45E-06	1.37E-06	5.88E-07	3.46E-05	1.48E-07	0.00E+00
INFANT	2.99E-07	3.00E-08	2.38E-06	2.73E-06	9.69E-07	8.41E-05	2.68E-07	0.00E+00
INHAL								
ADULT	5.65E-09	4.50E-08	5.52E-09	9.10E-09	9.83E-09	1.12E-06	7.21E-07	0.00E+00
TEEN	6.51E-09	6.84E-08	7.76E-09	1.24E-08	1.36E-08	1.43E-06	1.06E-06	0.00E+00
CHILD	6.51E-09	2.72E-07	1.05E-08	1.20E-08	1.27E-08	1.71E-06	8.61E-07	0.00E+00
INFANT	3.98E-09	2.31E-07	7.62E-09	1.01E-08	8.36E-09	1.57E-06	5.60E-07	0.00E+00

TABLE 4. DOSES TO MAXIMUM INDIVIDUAL (MREM), JULY-SEPTEMBER 2019 (Continued)

SPECIAL LOCATION NO. 5A Nearest Garden
AT 1.90 MILES WNW

ANNUAL BETA AIR DOSE = 1.19E-05 MILLRADS
ANNUAL GAMMA AIR DOSE = 2.46E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.64E-05	1.64E-05	1.64E-05	1.64E-05	1.64E-05	1.64E-05	1.65E-05	2.95E-05
GROUND	6.35E-05	6.35E-05	6.35E-05	6.35E-05	6.35E-05	6.35E-05	6.35E-05	7.46E-05
VEGET								
ADULT	1.56E-06	8.08E-06	1.03E-06	1.38E-06	5.60E-07	5.53E-05	8.88E-08	0.00E+00
TEEN	2.06E-06	8.62E-06	1.68E-06	2.17E-06	8.70E-07	7.44E-05	1.66E-07	0.00E+00
CHILD	3.55E-06	5.65E-06	4.03E-06	3.59E-06	1.41E-06	1.43E-04	2.53E-07	0.00E+00
MEAT								
ADULT	2.97E-07	2.15E-06	5.34E-08	1.83E-07	2.96E-08	1.48E-06	7.25E-09	0.00E+00
TEEN	2.20E-07	1.16E-06	4.44E-08	1.44E-07	2.40E-08	1.07E-06	6.86E-09	0.00E+00
CHILD	3.24E-07	5.85E-07	8.19E-08	1.79E-07	3.04E-08	1.62E-06	8.06E-09	0.00E+00
COW MILK								
ADULT	4.85E-07	5.21E-07	5.04E-07	7.01E-07	4.11E-07	4.19E-05	6.14E-08	0.00E+00
TEEN	5.53E-07	6.22E-07	9.15E-07	1.24E-06	7.30E-07	6.64E-05	1.27E-07	0.00E+00
CHILD	6.69E-07	4.21E-07	2.21E-06	2.14E-06	1.21E-06	1.32E-04	1.95E-07	0.00E+00
INFANT	9.82E-07	3.75E-07	3.75E-06	4.38E-06	2.04E-06	3.20E-04	3.53E-07	0.00E+00
GOATMILK								
ADULT	1.16E-06	1.40E-07	1.34E-06	1.79E-06	8.25E-07	5.03E-05	1.84E-07	0.00E+00
TEEN	1.16E-06	1.79E-07	2.42E-06	3.16E-06	1.46E-06	7.96E-05	3.81E-07	0.00E+00
CHILD	1.04E-06	1.33E-07	5.84E-06	5.49E-06	2.43E-06	1.58E-04	5.85E-07	0.00E+00
INFANT	1.25E-06	1.27E-07	9.61E-06	1.10E-05	4.01E-06	3.84E-04	1.06E-06	0.00E+00
INHAL								
ADULT	1.75E-08	1.40E-07	1.64E-08	2.75E-08	2.85E-08	3.20E-06	2.36E-06	0.00E+00
TEEN	2.01E-08	1.97E-07	2.31E-08	3.76E-08	3.93E-08	4.10E-06	3.45E-06	0.00E+00
CHILD	1.99E-08	6.99E-07	3.13E-08	3.62E-08	3.69E-08	4.90E-06	2.81E-06	0.00E+00
INFANT	1.20E-08	5.90E-07	2.25E-08	3.02E-08	2.42E-08	4.50E-06	1.82E-06	0.00E+00

TABLE 5. DOSES TO MAXIMUM INDIVIDUAL (MREM), OCTOBER-DECEMBER 2019

SPECIAL LOCATION NO. 1A Site Boundary
AT .67 MILES N

ANNUAL BETA AIR DOSE = 4.84E-07 MILLRADS
ANNUAL GAMMA AIR DOSE = 9.08E-07 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	6.07E-07	6.07E-07	6.07E-07	6.07E-07	6.07E-07	6.07E-07	6.12E-07	1.13E-06
GROUND	2.59E-04	2.59E-04	2.59E-04	2.59E-04	2.59E-04	2.59E-04	2.59E-04	3.04E-04
VEGET								
ADULT	7.28E-06	3.53E-05	2.01E-05	6.41E-06	2.72E-06	2.64E-04	4.37E-07	0.00E+00
TEEN	9.56E-06	3.81E-05	3.33E-05	1.01E-05	4.22E-06	3.55E-04	8.19E-07	0.00E+00
CHILD	1.67E-05	2.54E-05	8.10E-05	1.68E-05	6.86E-06	6.79E-04	1.25E-06	0.00E+00
MEAT								
ADULT	1.25E-06	8.77E-06	4.09E-07	8.03E-07	1.44E-07	7.05E-06	3.57E-08	0.00E+00
TEEN	9.15E-07	4.72E-06	3.42E-07	6.34E-07	1.17E-07	5.10E-06	3.38E-08	0.00E+00
CHILD	1.33E-06	2.39E-06	6.36E-07	7.90E-07	1.49E-07	7.70E-06	3.97E-08	0.00E+00
COW MILK								
ADULT	2.35E-06	2.28E-06	3.18E-06	3.41E-06	2.00E-06	2.00E-04	3.02E-07	0.00E+00
TEEN	2.66E-06	2.74E-06	5.78E-06	6.02E-06	3.54E-06	3.17E-04	6.25E-07	0.00E+00
CHILD	3.19E-06	1.88E-06	1.40E-05	1.04E-05	5.89E-06	6.30E-04	9.60E-07	0.00E+00
INFANT	4.68E-06	1.70E-06	2.44E-05	2.13E-05	9.90E-06	1.53E-03	1.74E-06	0.00E+00
GOATMILK								
ADULT	5.76E-06	8.78E-07	8.04E-06	8.81E-06	4.03E-06	2.40E-04	9.07E-07	0.00E+00
TEEN	5.77E-06	1.14E-06	1.46E-05	1.55E-05	7.15E-06	3.81E-04	1.87E-06	0.00E+00
CHILD	5.24E-06	8.78E-07	3.54E-05	2.69E-05	1.19E-05	7.56E-04	2.88E-06	0.00E+00
INFANT	6.44E-06	8.54E-07	6.00E-05	5.38E-05	1.96E-05	1.84E-03	5.21E-06	0.00E+00
INHAL								
ADULT	1.80E-07	1.14E-06	2.77E-07	2.95E-07	3.30E-07	3.70E-05	2.03E-05	0.00E+00
TEEN	2.05E-07	1.08E-06	3.92E-07	4.04E-07	4.56E-07	4.75E-05	2.98E-05	0.00E+00
CHILD	2.04E-07	4.34E-07	5.35E-07	3.91E-07	4.28E-07	5.72E-05	2.42E-05	0.00E+00
INFANT	1.25E-07	1.56E-07	3.75E-07	3.30E-07	2.81E-07	5.26E-05	1.57E-05	0.00E+00

TABLE 5. DOSES TO MAXIMUM INDIVIDUAL (MREM), OCTOBER-DECEMBER 2019 (Continued)

SPECIAL LOCATION NO. 2A Site Boundary
AT .60 MILES NNE

ANNUAL BETA AIR DOSE = 1.31E-07 MILLRADS
ANNUAL GAMMA AIR DOSE = 2.45E-07 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.64E-07	1.64E-07	1.64E-07	1.64E-07	1.64E-07	1.64E-07	1.65E-07	3.05E-07
GROUND	1.28E-04	1.28E-04	1.28E-04	1.28E-04	1.28E-04	1.28E-04	1.28E-04	1.50E-04
VEGET								
ADULT	3.59E-06	1.74E-05	9.91E-06	3.16E-06	1.34E-06	1.29E-04	2.16E-07	0.00E+00
TEEN	4.72E-06	1.88E-05	1.64E-05	4.96E-06	2.07E-06	1.74E-04	4.04E-07	0.00E+00
CHILD	8.22E-06	1.25E-05	3.99E-05	8.26E-06	3.37E-06	3.33E-04	6.15E-07	0.00E+00
MEAT								
ADULT	6.17E-07	4.33E-06	2.02E-07	3.96E-07	7.11E-08	3.45E-06	1.76E-08	0.00E+00
TEEN	4.52E-07	2.33E-06	1.68E-07	3.13E-07	5.77E-08	2.50E-06	1.67E-08	0.00E+00
CHILD	6.58E-07	1.18E-06	3.14E-07	3.90E-07	7.32E-08	3.77E-06	1.96E-08	0.00E+00
COW MILK								
ADULT	1.16E-06	1.12E-06	1.57E-06	1.68E-06	9.81E-07	9.81E-05	1.49E-07	0.00E+00
TEEN	1.31E-06	1.35E-06	2.85E-06	2.97E-06	1.74E-06	1.55E-04	3.08E-07	0.00E+00
CHILD	1.57E-06	9.28E-07	6.92E-06	5.13E-06	2.90E-06	3.09E-04	4.74E-07	0.00E+00
INFANT	2.30E-06	8.38E-07	1.20E-05	1.05E-05	4.86E-06	7.50E-04	8.57E-07	0.00E+00
GOATMILK								
ADULT	2.84E-06	4.32E-07	3.96E-06	4.34E-06	1.98E-06	1.18E-04	4.47E-07	0.00E+00
TEEN	2.85E-06	5.64E-07	7.21E-06	7.66E-06	3.52E-06	1.86E-04	9.25E-07	0.00E+00
CHILD	2.58E-06	4.32E-07	1.75E-05	1.33E-05	5.84E-06	3.70E-04	1.42E-06	0.00E+00
INFANT	3.17E-06	4.20E-07	2.96E-05	2.65E-05	9.65E-06	9.00E-04	2.57E-06	0.00E+00
INHAL								
ADULT	1.27E-07	8.09E-07	1.96E-07	2.09E-07	2.33E-07	2.61E-05	1.44E-05	0.00E+00
TEEN	1.45E-07	7.62E-07	2.77E-07	2.85E-07	3.22E-07	3.35E-05	2.11E-05	0.00E+00
CHILD	1.44E-07	3.02E-07	3.79E-07	2.76E-07	3.02E-07	4.04E-05	1.71E-05	0.00E+00
INFANT	8.85E-08	1.06E-07	2.65E-07	2.33E-07	1.98E-07	3.71E-05	1.11E-05	0.00E+00

TABLE 5. DOSES TO MAXIMUM INDIVIDUAL (MREM), OCTOBER-DECEMBER 2019 (Continued)

SPECIAL LOCATION NO. 3A Nearest Resident
AT .90 MILES NW

ANNUAL BETA AIR DOSE = 6.29E-06 MILLRADS
ANNUAL GAMMA AIR DOSE = 1.18E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	7.89E-06	7.89E-06	7.89E-06	7.89E-06	7.89E-06	7.89E-06	7.95E-06	1.47E-05
GROUND	4.61E-05	4.61E-05	4.61E-05	4.61E-05	4.61E-05	4.61E-05	4.61E-05	5.42E-05
VEGET								
ADULT	1.36E-06	6.38E-06	3.97E-06	1.24E-06	6.35E-07	7.46E-05	7.95E-08	0.00E+00
TEEN	1.79E-06	6.89E-06	6.57E-06	1.94E-06	9.79E-07	1.00E-04	1.49E-07	0.00E+00
CHILD	3.13E-06	4.61E-06	1.60E-05	3.24E-06	1.59E-06	1.92E-04	2.27E-07	0.00E+00
MEAT								
ADULT	2.25E-07	1.56E-06	7.85E-08	1.46E-07	2.99E-08	1.99E-06	6.49E-09	0.00E+00
TEEN	1.64E-07	8.42E-07	6.56E-08	1.16E-07	2.43E-08	1.44E-06	6.14E-09	0.00E+00
CHILD	2.39E-07	4.26E-07	1.22E-07	1.44E-07	3.09E-08	2.18E-06	7.22E-09	0.00E+00
COW MILK								
ADULT	4.63E-07	4.28E-07	6.33E-07	6.83E-07	4.71E-07	5.65E-05	5.49E-08	0.00E+00
TEEN	5.42E-07	5.19E-07	1.15E-06	1.21E-06	8.38E-07	8.96E-05	1.14E-07	0.00E+00
CHILD	6.88E-07	3.60E-07	2.80E-06	2.09E-06	1.39E-06	1.78E-04	1.74E-07	0.00E+00
INFANT	1.06E-06	3.28E-07	4.95E-06	4.36E-06	2.36E-06	4.32E-04	3.16E-07	0.00E+00
GOATMILK								
ADULT	1.09E-06	1.86E-07	1.54E-06	1.68E-06	8.63E-07	6.78E-05	1.65E-07	0.00E+00
TEEN	1.12E-06	2.44E-07	2.80E-06	2.96E-06	1.53E-06	1.07E-04	3.41E-07	0.00E+00
CHILD	1.09E-06	1.89E-07	6.79E-06	5.13E-06	2.55E-06	2.13E-04	5.23E-07	0.00E+00
INFANT	1.42E-06	1.84E-07	1.16E-05	1.04E-05	4.24E-06	5.19E-04	9.47E-07	0.00E+00
INHAL								
ADULT	1.75E-08	1.13E-07	2.72E-08	2.94E-08	3.43E-08	3.91E-06	1.87E-06	0.00E+00
TEEN	2.01E-08	1.23E-07	3.85E-08	4.03E-08	4.74E-08	5.01E-06	2.75E-06	0.00E+00
CHILD	2.01E-08	1.96E-07	5.26E-08	3.91E-08	4.45E-08	6.03E-06	2.24E-06	0.00E+00
INFANT	1.25E-08	1.50E-07	3.71E-08	3.33E-08	2.92E-08	5.54E-06	1.46E-06	0.00E+00

TABLE 5. DOSES TO MAXIMUM INDIVIDUAL (MREM), OCTOBER-DECEMBER 2019 (Continued)

SPECIAL LOCATION NO. 4A Nearest Cow
AT 3.50 MILES NNW

ANNUAL BETA AIR DOSE = 6.29E-06 MILLRADS
ANNUAL GAMMA AIR DOSE = 1.18E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	7.89E-06	7.89E-06	7.89E-06	7.89E-06	7.89E-06	7.89E-06	7.95E-06	1.47E-05
GROUND	1.95E-06	1.95E-06	1.95E-06	1.95E-06	1.95E-06	1.95E-06	1.95E-06	2.29E-06
VEGET								
ADULT	5.86E-08	2.71E-07	1.74E-07	5.40E-08	2.91E-08	3.58E-06	3.38E-09	0.00E+00
TEEN	7.72E-08	2.92E-07	2.88E-07	8.44E-08	4.49E-08	4.81E-06	6.34E-09	0.00E+00
CHILD	1.35E-07	1.96E-07	7.00E-07	1.41E-07	7.28E-08	9.21E-06	9.64E-09	0.00E+00
MEAT								
ADULT	9.52E-09	6.60E-08	3.41E-09	6.23E-09	1.33E-09	9.56E-08	2.76E-10	0.00E+00
TEEN	6.96E-09	3.55E-08	2.85E-09	4.93E-09	1.08E-09	6.93E-08	2.61E-10	0.00E+00
CHILD	1.01E-08	1.80E-08	5.30E-09	6.16E-09	1.37E-09	1.05E-07	3.07E-10	0.00E+00
COW MILK								
ADULT	2.02E-08	1.84E-08	2.78E-08	3.00E-08	2.17E-08	2.71E-06	2.34E-09	0.00E+00
TEEN	2.39E-08	2.23E-08	5.06E-08	5.30E-08	3.86E-08	4.29E-06	4.83E-09	0.00E+00
CHILD	3.09E-08	1.56E-08	1.23E-07	9.18E-08	6.41E-08	8.52E-06	7.43E-09	0.00E+00
INFANT	4.80E-08	1.42E-08	2.18E-07	1.92E-07	1.09E-07	2.07E-05	1.34E-08	0.00E+00
GOATMILK								
ADULT	4.70E-08	8.27E-09	6.67E-08	7.25E-08	3.87E-08	3.25E-06	7.01E-09	0.00E+00
TEEN	4.88E-08	1.09E-08	1.21E-07	1.28E-07	6.87E-08	5.15E-06	1.45E-08	0.00E+00
CHILD	4.83E-08	8.43E-09	2.94E-07	2.22E-07	1.14E-07	1.02E-05	2.23E-08	0.00E+00
INFANT	6.44E-08	8.25E-09	5.05E-07	4.49E-07	1.90E-07	2.48E-05	4.03E-08	0.00E+00
INHAL								
ADULT	2.58E-09	1.80E-08	4.24E-09	4.93E-09	6.85E-09	8.32E-07	1.95E-07	0.00E+00
TEEN	3.11E-09	3.37E-08	5.99E-09	6.77E-09	9.47E-09	1.06E-06	2.89E-07	0.00E+00
CHILD	3.24E-09	1.61E-07	8.17E-09	6.61E-09	8.90E-09	1.28E-06	2.36E-07	0.00E+00
INFANT	2.14E-09	1.38E-07	5.96E-09	5.85E-09	5.86E-09	1.17E-06	1.60E-07	0.00E+00

TABLE 5. DOSES TO MAXIMUM INDIVIDUAL (MREM), OCTOBER-DECEMBER 2019 (Continued)

SPECIAL LOCATION NO. 5A Nearest Garden
AT 3.00 MILES NNW

ANNUAL BETA AIR DOSE = 6.77E-06 MILLRADS
ANNUAL GAMMA AIR DOSE = 1.27E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	8.50E-06	8.50E-06	8.50E-06	8.50E-06	8.50E-06	8.50E-06	8.56E-06	1.58E-05
GROUND	2.77E-06	2.77E-06	2.77E-06	2.77E-06	2.77E-06	2.77E-06	2.77E-06	3.26E-06
VEGET								
ADULT	8.25E-08	3.84E-07	2.42E-07	7.55E-08	3.95E-08	4.74E-06	4.79E-09	0.00E+00
TEEN	1.09E-07	4.15E-07	4.01E-07	1.18E-07	6.10E-08	6.37E-06	8.97E-09	0.00E+00
CHILD	1.90E-07	2.77E-07	9.75E-07	1.97E-07	9.88E-08	1.22E-05	1.37E-08	0.00E+00
MEAT								
ADULT	1.35E-08	9.39E-08	4.77E-09	8.82E-09	1.84E-09	1.27E-07	3.91E-10	0.00E+00
TEEN	9.88E-09	5.05E-08	3.99E-09	6.97E-09	1.49E-09	9.17E-08	3.70E-10	0.00E+00
CHILD	1.44E-08	2.56E-08	7.43E-09	8.71E-09	1.90E-09	1.38E-07	4.35E-10	0.00E+00
COW MILK								
ADULT	2.82E-08	2.59E-08	3.87E-08	4.17E-08	2.94E-08	3.59E-06	3.31E-09	0.00E+00
TEEN	3.32E-08	3.14E-08	7.04E-08	7.37E-08	5.22E-08	5.69E-06	6.84E-09	0.00E+00
CHILD	4.24E-08	2.18E-08	1.71E-07	1.28E-07	8.68E-08	1.13E-05	1.05E-08	0.00E+00
INFANT	6.55E-08	1.99E-08	3.03E-07	2.67E-07	1.47E-07	2.74E-05	1.90E-08	0.00E+00
GOATMILK								
ADULT	6.61E-08	1.14E-08	9.34E-08	1.02E-07	5.32E-08	4.31E-06	9.93E-09	0.00E+00
TEEN	6.82E-08	1.50E-08	1.70E-07	1.80E-07	9.44E-08	6.82E-06	2.05E-08	0.00E+00
CHILD	6.67E-08	1.16E-08	4.12E-07	3.11E-07	1.57E-07	1.35E-05	3.15E-08	0.00E+00
INFANT	8.81E-08	1.13E-08	7.06E-07	6.29E-07	2.61E-07	3.29E-05	5.71E-08	0.00E+00
INHAL								
ADULT	3.20E-09	2.20E-08	5.21E-09	6.00E-09	8.18E-09	9.86E-07	2.55E-07	0.00E+00
TEEN	3.83E-09	3.87E-08	7.36E-09	8.24E-09	1.13E-08	1.26E-06	3.77E-07	0.00E+00
CHILD	3.97E-09	1.74E-07	1.00E-08	8.04E-09	1.06E-08	1.51E-06	3.08E-07	0.00E+00
INFANT	2.60E-09	1.49E-07	7.29E-09	7.09E-09	6.99E-09	1.39E-06	2.07E-07	0.00E+00

TABLE 6. DOSES TO MAXIMUM INDIVIDUAL (MREM), JULY-DECEMBER 2019

SPECIAL LOCATION NO. 1A Site Boundary
AT .67 MILES N

ANNUAL BETA AIR DOSE = 1.82E-06 MILLRADS
ANNUAL GAMMA AIR DOSE = 3.54E-06 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	2.37E-06	2.37E-06	2.37E-06	2.37E-06	2.37E-06	2.37E-06	2.39E-06	4.34E-06
GROUND	2.03E-03	2.03E-03	2.03E-03	2.03E-03	2.03E-03	2.03E-03	2.03E-03	2.39E-03
VEGET								
ADULT	4.89E-05	2.60E-04	3.97E-05	4.21E-05	1.42E-05	1.07E-03	2.84E-06	0.00E+00
TEEN	6.46E-05	2.77E-04	6.53E-05	6.61E-05	2.22E-05	1.43E-03	5.33E-06	0.00E+00
CHILD	1.12E-04	1.82E-04	1.58E-04	1.10E-04	3.62E-05	2.75E-03	8.11E-06	0.00E+00
MEAT								
ADULT	9.50E-06	6.90E-05	1.75E-06	5.82E-06	8.48E-07	2.85E-05	2.32E-07	0.00E+00
TEEN	7.04E-06	3.71E-05	1.46E-06	4.58E-06	6.88E-07	2.07E-05	2.20E-07	0.00E+00
CHILD	1.04E-05	1.88E-05	2.69E-06	5.68E-06	8.73E-07	3.12E-05	2.58E-07	0.00E+00
COW MILK								
ADULT	1.46E-05	1.63E-05	1.54E-05	2.08E-05	1.03E-05	8.08E-04	1.97E-06	0.00E+00
TEEN	1.62E-05	1.93E-05	2.79E-05	3.66E-05	1.83E-05	1.28E-03	4.06E-06	0.00E+00
CHILD	1.86E-05	1.30E-05	6.75E-05	6.33E-05	3.03E-05	2.54E-03	6.25E-06	0.00E+00
INFANT	2.61E-05	1.16E-05	1.13E-04	1.28E-04	5.05E-05	6.18E-03	1.13E-05	0.00E+00
GOATMILK								
ADULT	3.62E-05	4.03E-06	4.22E-05	5.54E-05	2.30E-05	9.70E-04	5.90E-06	0.00E+00
TEEN	3.54E-05	5.09E-06	7.66E-05	9.78E-05	4.07E-05	1.54E-03	1.22E-05	0.00E+00
CHILD	2.99E-05	3.75E-06	1.85E-04	1.70E-04	6.76E-05	3.05E-03	1.87E-05	0.00E+00
INFANT	3.38E-05	3.55E-06	3.02E-04	3.36E-04	1.11E-04	7.41E-03	3.39E-05	0.00E+00
INHAL								
ADULT	7.36E-07	5.61E-06	6.75E-07	1.07E-06	9.44E-07	1.01E-04	1.12E-04	0.00E+00
TEEN	8.20E-07	5.17E-06	9.50E-07	1.45E-06	1.30E-06	1.30E-04	1.63E-04	0.00E+00
CHILD	7.92E-07	2.03E-06	1.29E-06	1.39E-06	1.22E-06	1.56E-04	1.32E-04	0.00E+00
INFANT	4.57E-07	7.20E-07	8.97E-07	1.12E-06	7.99E-07	1.43E-04	8.45E-05	0.00E+00

TABLE 6. DOSES TO MAXIMUM INDIVIDUAL (MREM), JULY-DECEMBER 2019 (Continued)

SPECIAL LOCATION NO. 2A Site Boundary
AT .60 MILES NNE

ANNUAL BETA AIR DOSE = 4.13E-07 MILLRADS
ANNUAL GAMMA AIR DOSE = 8.05E-07 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	5.38E-07	5.38E-07	5.38E-07	5.38E-07	5.38E-07	5.38E-07	5.42E-07	9.86E-07
GROUND	1.18E-03	1.18E-03	1.18E-03	1.18E-03	1.18E-03	1.18E-03	1.18E-03	1.39E-03
VEGET								
ADULT	2.83E-05	1.51E-04	2.29E-05	2.44E-05	8.19E-06	6.10E-04	1.65E-06	0.00E+00
TEEN	3.74E-05	1.61E-04	3.77E-05	3.83E-05	1.28E-05	8.20E-04	3.09E-06	0.00E+00
CHILD	6.47E-05	1.05E-04	9.08E-05	6.34E-05	2.09E-05	1.57E-03	4.70E-06	0.00E+00
MEAT								
ADULT	5.50E-06	4.00E-05	1.01E-06	3.37E-06	4.90E-07	1.63E-05	1.35E-07	0.00E+00
TEEN	4.08E-06	2.15E-05	8.42E-07	2.65E-06	3.97E-07	1.18E-05	1.27E-07	0.00E+00
CHILD	6.00E-06	1.09E-05	1.56E-06	3.29E-06	5.05E-07	1.78E-05	1.50E-07	0.00E+00
COW MILK								
ADULT	8.46E-06	9.43E-06	8.90E-06	1.20E-05	5.93E-06	4.62E-04	1.14E-06	0.00E+00
TEEN	9.36E-06	1.12E-05	1.62E-05	2.12E-05	1.05E-05	7.32E-04	2.35E-06	0.00E+00
CHILD	1.07E-05	7.53E-06	3.90E-05	3.66E-05	1.75E-05	1.45E-03	3.62E-06	0.00E+00
INFANT	1.50E-05	6.69E-06	6.51E-05	7.38E-05	2.91E-05	3.53E-03	6.55E-06	0.00E+00
GOATMILK								
ADULT	2.10E-05	2.33E-06	2.44E-05	3.21E-05	1.33E-05	5.55E-04	3.42E-06	0.00E+00
TEEN	2.05E-05	2.94E-06	4.43E-05	5.66E-05	2.35E-05	8.79E-04	7.06E-06	0.00E+00
CHILD	1.73E-05	2.16E-06	1.07E-04	9.81E-05	3.91E-05	1.74E-03	1.09E-05	0.00E+00
INFANT	1.95E-05	2.05E-06	1.75E-04	1.94E-04	6.40E-05	4.24E-03	1.96E-05	0.00E+00
INHAL								
ADULT	5.45E-07	4.13E-06	5.01E-07	7.92E-07	7.06E-07	7.60E-05	8.22E-05	0.00E+00
TEEN	6.07E-07	3.81E-06	7.05E-07	1.08E-06	9.74E-07	9.73E-05	1.20E-04	0.00E+00
CHILD	5.87E-07	1.46E-06	9.58E-07	1.03E-06	9.14E-07	1.17E-04	9.74E-05	0.00E+00
INFANT	3.39E-07	5.00E-07	6.66E-07	8.36E-07	5.97E-07	1.07E-04	6.23E-05	0.00E+00

TABLE 6. DOSES TO MAXIMUM INDIVIDUAL (MREM), JULY-DECEMBER 2019 (Continued)

SPECIAL LOCATION NO. 3A Nearest Resident
AT .90 MILES NW

ANNUAL BETA AIR DOSE = 1.98E-05 MILLRADS
ANNUAL GAMMA AIR DOSE = 3.86E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	2.58E-05	2.58E-05	2.58E-05	2.58E-05	2.58E-05	2.58E-05	2.60E-05	4.73E-05
GROUND	4.17E-04	4.17E-04	4.17E-04	4.17E-04	4.17E-04	4.17E-04	4.17E-04	4.90E-04
VEGET								
ADULT	1.03E-05	5.35E-05	9.65E-06	9.03E-06	3.49E-06	3.23E-04	5.92E-07	0.00E+00
TEEN	1.36E-05	5.71E-05	1.59E-05	1.42E-05	5.43E-06	4.34E-04	1.11E-06	0.00E+00
CHILD	2.35E-05	3.75E-05	3.83E-05	2.35E-05	8.84E-06	8.31E-04	1.69E-06	0.00E+00
MEAT								
ADULT	1.95E-06	1.41E-05	3.82E-07	1.21E-06	1.91E-07	8.62E-06	4.84E-08	0.00E+00
TEEN	1.45E-06	7.61E-06	3.18E-07	9.51E-07	1.55E-07	6.25E-06	4.58E-08	0.00E+00
CHILD	2.13E-06	3.84E-06	5.88E-07	1.18E-06	1.96E-07	9.43E-06	5.38E-08	0.00E+00
COW MILK								
ADULT	3.17E-06	3.42E-06	3.43E-06	4.56E-06	2.55E-06	2.44E-04	4.10E-07	0.00E+00
TEEN	3.58E-06	4.08E-06	6.22E-06	8.05E-06	4.53E-06	3.87E-04	8.46E-07	0.00E+00
CHILD	4.27E-06	2.76E-06	1.50E-05	1.39E-05	7.53E-06	7.68E-04	1.30E-06	0.00E+00
INFANT	6.19E-06	2.46E-06	2.55E-05	2.84E-05	1.26E-05	1.87E-03	2.35E-06	0.00E+00
GOATMILK								
ADULT	7.70E-06	9.38E-07	9.10E-06	1.18E-05	5.28E-06	2.93E-04	1.23E-06	0.00E+00
TEEN	7.65E-06	1.19E-06	1.65E-05	2.09E-05	9.36E-06	4.64E-04	2.54E-06	0.00E+00
CHILD	6.72E-06	8.91E-07	3.99E-05	3.62E-05	1.55E-05	9.22E-04	3.90E-06	0.00E+00
INFANT	8.00E-06	8.50E-07	6.57E-05	7.21E-05	2.56E-05	2.24E-03	7.06E-06	0.00E+00
INHAL								
ADULT	9.33E-08	7.12E-07	8.90E-08	1.39E-07	1.30E-07	1.43E-05	1.36E-05	0.00E+00
TEEN	1.05E-07	7.37E-07	1.25E-07	1.89E-07	1.80E-07	1.83E-05	1.98E-05	0.00E+00
CHILD	1.02E-07	1.01E-06	1.70E-07	1.82E-07	1.69E-07	2.19E-05	1.61E-05	0.00E+00
INFANT	5.97E-08	7.51E-07	1.19E-07	1.48E-07	1.11E-07	2.01E-05	1.03E-05	0.00E+00

TABLE 6. DOSES TO MAXIMUM INDIVIDUAL (MREM), JULY-DECEMBER 2019 (Continued)

SPECIAL LOCATION NO. 4A Nearest Cow
AT 3.50 MILES NNW

ANNUAL BETA AIR DOSE = 1.07E-05 MILLRADS
ANNUAL GAMMA AIR DOSE = 2.09E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.40E-05	1.40E-05	1.40E-05	1.40E-05	1.40E-05	1.40E-05	1.41E-05	2.56E-05
GROUND	1.64E-05	1.64E-05	1.64E-05	1.64E-05	1.64E-05	1.64E-05	1.64E-05	1.93E-05
VEGET								
ADULT	4.12E-07	2.12E-06	4.15E-07	3.65E-07	1.50E-07	1.50E-05	2.36E-08	0.00E+00
TEEN	5.45E-07	2.26E-06	6.83E-07	5.73E-07	2.34E-07	2.02E-05	4.42E-08	0.00E+00
CHILD	9.43E-07	1.49E-06	1.65E-06	9.51E-07	3.80E-07	3.86E-05	6.73E-08	0.00E+00
MEAT								
ADULT	7.73E-08	5.58E-07	1.56E-08	4.80E-08	7.90E-09	4.01E-07	1.93E-09	0.00E+00
TEEN	5.72E-08	3.00E-07	1.30E-08	3.78E-08	6.41E-09	2.91E-07	1.82E-09	0.00E+00
CHILD	8.41E-08	1.52E-07	2.40E-08	4.69E-08	8.14E-09	4.39E-07	2.14E-09	0.00E+00
COW MILK								
ADULT	1.29E-07	1.37E-07	1.41E-07	1.87E-07	1.10E-07	1.13E-05	1.63E-08	0.00E+00
TEEN	1.47E-07	1.63E-07	2.56E-07	3.29E-07	1.96E-07	1.80E-05	3.37E-08	0.00E+00
CHILD	1.79E-07	1.11E-07	6.20E-07	5.70E-07	3.26E-07	3.57E-05	5.18E-08	0.00E+00
INFANT	2.63E-07	9.90E-08	1.06E-06	1.17E-06	5.48E-07	8.67E-05	9.38E-08	0.00E+00
GOATMILK								
ADULT	3.10E-07	3.94E-08	3.69E-07	4.77E-07	2.21E-07	1.36E-05	4.90E-08	0.00E+00
TEEN	3.11E-07	5.03E-08	6.71E-07	8.43E-07	3.91E-07	2.16E-05	1.01E-07	0.00E+00
CHILD	2.79E-07	3.77E-08	1.62E-06	1.46E-06	6.50E-07	4.28E-05	1.56E-07	0.00E+00
INFANT	3.39E-07	3.61E-08	2.68E-06	2.92E-06	1.07E-06	1.04E-04	2.81E-07	0.00E+00
INHAL								
ADULT	9.23E-09	7.19E-08	1.02E-08	1.52E-08	1.72E-08	2.01E-06	1.10E-06	0.00E+00
TEEN	1.07E-08	1.10E-07	1.44E-08	2.08E-08	2.38E-08	2.57E-06	1.62E-06	0.00E+00
CHILD	1.07E-08	4.35E-07	1.96E-08	2.01E-08	2.24E-08	3.07E-06	1.32E-06	0.00E+00
INFANT	6.64E-09	3.70E-07	1.42E-08	1.71E-08	1.47E-08	2.82E-06	8.62E-07	0.00E+00

TABLE 6. DOSES TO MAXIMUM INDIVIDUAL (MREM), JULY-DECEMBER 2019 (Continued)

SPECIAL LOCATION NO. 5A Nearest Garden
AT 1.90 MILES WNW

ANNUAL BETA AIR DOSE = 1.98E-05 MILLRADS
ANNUAL GAMMA AIR DOSE = 3.86E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	2.58E-05	2.58E-05	2.58E-05	2.58E-05	2.58E-05	2.58E-05	2.60E-05	4.73E-05
GROUND	5.57E-05	5.57E-05	5.57E-05	5.57E-05	5.57E-05	5.57E-05	5.57E-05	6.55E-05
VEGET								
ADULT	1.43E-06	7.21E-06	1.61E-06	1.29E-06	5.88E-07	6.49E-05	8.12E-08	0.00E+00
TEEN	1.89E-06	7.71E-06	2.64E-06	2.02E-06	9.10E-07	8.73E-05	1.52E-07	0.00E+00
CHILD	3.28E-06	5.07E-06	6.39E-06	3.36E-06	1.48E-06	1.67E-04	2.31E-07	0.00E+00
MEAT								
ADULT	2.63E-07	1.89E-06	5.59E-08	1.64E-07	2.90E-08	1.74E-06	6.63E-09	0.00E+00
TEEN	1.94E-07	1.02E-06	4.66E-08	1.30E-07	2.36E-08	1.26E-06	6.28E-09	0.00E+00
CHILD	2.86E-07	5.13E-07	8.62E-08	1.61E-07	2.99E-08	1.90E-06	7.38E-09	0.00E+00
COW MILK								
ADULT	4.62E-07	4.75E-07	5.15E-07	6.74E-07	4.34E-07	4.92E-05	5.61E-08	0.00E+00
TEEN	5.36E-07	5.69E-07	9.35E-07	1.19E-06	7.72E-07	7.79E-05	1.16E-07	0.00E+00
CHILD	6.67E-07	3.88E-07	2.26E-06	2.06E-06	1.28E-06	1.55E-04	1.78E-07	0.00E+00
INFANT	1.01E-06	3.48E-07	3.90E-06	4.26E-06	2.17E-06	3.76E-04	3.23E-07	0.00E+00
GOATMILK								
ADULT	1.09E-06	1.49E-07	1.31E-06	1.68E-06	8.25E-07	5.90E-05	1.68E-07	0.00E+00
TEEN	1.10E-06	1.91E-07	2.38E-06	2.97E-06	1.46E-06	9.34E-05	3.48E-07	0.00E+00
CHILD	1.03E-06	1.45E-07	5.75E-06	5.14E-06	2.43E-06	1.86E-04	5.35E-07	0.00E+00
INFANT	1.29E-06	1.39E-07	9.59E-06	1.03E-05	4.04E-06	4.51E-04	9.68E-07	0.00E+00
INHAL								
ADULT	1.85E-08	1.43E-07	2.04E-08	3.05E-08	3.44E-08	3.96E-06	2.23E-06	0.00E+00
TEEN	2.14E-08	2.13E-07	2.87E-08	4.16E-08	4.75E-08	5.07E-06	3.28E-06	0.00E+00
CHILD	2.15E-08	8.07E-07	3.91E-08	4.03E-08	4.46E-08	6.07E-06	2.67E-06	0.00E+00
INFANT	1.32E-08	6.84E-07	2.82E-08	3.41E-08	2.93E-08	5.57E-06	1.74E-06	0.00E+00

TABLE 7. DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-DECEMBER 2019

SPECIAL LOCATION NO. 1A Site Boundary
AT .67 MILES N

ANNUAL BETA AIR DOSE = 5.52E-05 MILLRADS
ANNUAL GAMMA AIR DOSE = 5.91E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	3.93E-05	3.93E-05	3.93E-05	3.93E-05	3.93E-05	3.93E-05	3.99E-05	9.00E-05
GROUND	2.27E-03	2.27E-03	2.27E-03	2.27E-03	2.27E-03	2.27E-03	2.27E-03	2.67E-03
VEGET								
ADULT	5.58E-05	2.89E-04	3.94E-05	4.92E-05	1.56E-05	9.51E-04	3.49E-06	0.00E+00
TEEN	7.28E-05	3.09E-04	6.48E-05	7.75E-05	2.45E-05	1.28E-03	6.54E-06	0.00E+00
CHILD	1.24E-04	2.02E-04	1.56E-04	1.29E-04	4.00E-05	2.45E-03	9.95E-06	0.00E+00
MEAT								
ADULT	1.07E-05	7.70E-05	2.05E-06	6.70E-06	9.91E-07	2.54E-05	2.85E-07	0.00E+00
TEEN	7.90E-06	4.14E-05	1.70E-06	5.28E-06	8.04E-07	1.84E-05	2.70E-07	0.00E+00
CHILD	1.16E-05	2.09E-05	3.14E-06	6.56E-06	1.02E-06	2.77E-05	3.17E-07	0.00E+00
COW MILK								
ADULT	1.73E-05	1.80E-05	1.79E-05	2.46E-05	1.12E-05	7.22E-04	2.41E-06	0.00E+00
TEEN	1.87E-05	2.14E-05	3.25E-05	4.33E-05	1.98E-05	1.14E-03	4.99E-06	0.00E+00
CHILD	2.06E-05	1.43E-05	7.84E-05	7.48E-05	3.29E-05	2.27E-03	7.66E-06	0.00E+00
INFANT	2.80E-05	1.27E-05	1.29E-04	1.50E-04	5.45E-05	5.52E-03	1.39E-05	0.00E+00
GOATMILK								
ADULT	4.38E-05	4.33E-06	5.02E-05	6.70E-05	2.65E-05	8.66E-04	7.24E-06	0.00E+00
TEEN	4.24E-05	5.44E-06	9.11E-05	1.18E-04	4.69E-05	1.37E-03	1.50E-05	0.00E+00
CHILD	3.47E-05	3.98E-06	2.20E-04	2.05E-04	7.79E-05	2.73E-03	2.30E-05	0.00E+00
INFANT	3.78E-05	3.76E-06	3.57E-04	4.04E-04	1.27E-04	6.63E-03	4.16E-05	0.00E+00
INHAL								
ADULT	8.04E-07	6.11E-06	6.99E-07	1.15E-06	9.35E-07	9.36E-05	1.22E-04	0.00E+00
TEEN	8.78E-07	5.63E-06	9.82E-07	1.56E-06	1.29E-06	1.20E-04	1.79E-04	0.00E+00
CHILD	8.31E-07	2.21E-06	1.33E-06	1.50E-06	1.21E-06	1.45E-04	1.45E-04	0.00E+00
INFANT	4.71E-07	7.91E-07	9.15E-07	1.19E-06	7.89E-07	1.33E-04	9.25E-05	0.00E+00

TABLE 7. DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-DECEMBER 2019 (Continued)

SPECIAL LOCATION NO. 2A Site Boundary
AT .60 MILES NNE

ANNUAL BETA AIR DOSE = 3.30E-05 MILLRADS
ANNUAL GAMMA AIR DOSE = 3.06E-05 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	2.03E-05	2.03E-05	2.03E-05	2.03E-05	2.03E-05	2.03E-05	2.06E-05	4.94E-05
GROUND	1.55E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03	1.55E-03	1.82E-03
VEGET								
ADULT	3.80E-05	1.97E-04	2.67E-05	3.35E-05	1.06E-05	6.38E-04	2.38E-06	0.00E+00
TEEN	4.96E-05	2.10E-04	4.39E-05	5.28E-05	1.66E-05	8.58E-04	4.46E-06	0.00E+00
CHILD	8.46E-05	1.38E-04	1.06E-04	8.75E-05	2.71E-05	1.64E-03	6.78E-06	0.00E+00
MEAT								
ADULT	7.31E-06	5.25E-05	1.39E-06	4.57E-06	6.74E-07	1.70E-05	1.94E-07	0.00E+00
TEEN	5.39E-06	2.82E-05	1.16E-06	3.60E-06	5.46E-07	1.23E-05	1.84E-07	0.00E+00
CHILD	7.89E-06	1.43E-05	2.14E-06	4.47E-06	6.94E-07	1.86E-05	2.16E-07	0.00E+00
COW MILK								
ADULT	1.18E-05	1.23E-05	1.22E-05	1.67E-05	7.58E-06	4.85E-04	1.64E-06	0.00E+00
TEEN	1.27E-05	1.46E-05	2.21E-05	2.95E-05	1.34E-05	7.68E-04	3.40E-06	0.00E+00
CHILD	1.40E-05	9.77E-06	5.33E-05	5.09E-05	2.23E-05	1.53E-03	5.22E-06	0.00E+00
INFANT	1.90E-05	8.67E-06	8.80E-05	1.02E-04	3.69E-05	3.71E-03	9.45E-06	0.00E+00
GOATMILK								
ADULT	2.98E-05	2.94E-06	3.42E-05	4.56E-05	1.80E-05	5.82E-04	4.93E-06	0.00E+00
TEEN	2.89E-05	3.69E-06	6.20E-05	8.05E-05	3.19E-05	9.22E-04	1.02E-05	0.00E+00
CHILD	2.36E-05	2.70E-06	1.50E-04	1.40E-04	5.29E-05	1.83E-03	1.57E-05	0.00E+00
INFANT	2.57E-05	2.55E-06	2.43E-04	2.75E-04	8.63E-05	4.45E-03	2.83E-05	0.00E+00
INHAL								
ADULT	6.28E-07	4.79E-06	5.43E-07	8.95E-07	7.19E-07	7.17E-05	9.60E-05	0.00E+00
TEEN	6.85E-07	4.41E-06	7.64E-07	1.22E-06	9.93E-07	9.21E-05	1.40E-04	0.00E+00
CHILD	6.47E-07	1.69E-06	1.04E-06	1.16E-06	9.31E-07	1.11E-04	1.14E-04	0.00E+00
INFANT	3.66E-07	5.82E-07	7.10E-07	9.25E-07	6.06E-07	1.02E-04	7.27E-05	0.00E+00

TABLE 7. DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-DECEMBER 2019 (Continued)

SPECIAL LOCATION NO. 3A Nearest Resident
AT .90 MILES NW

ANNUAL BETA AIR DOSE = 2.98E-04 MILLRADS
ANNUAL GAMMA AIR DOSE = 4.82E-04 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	3.23E-04	3.23E-04	3.23E-04	3.23E-04	3.23E-04	3.23E-04	3.26E-04	6.36E-04
GROUND	6.20E-04	6.20E-04	6.20E-04	6.20E-04	6.20E-04	6.20E-04	6.20E-04	7.30E-04
VEGET								
ADULT	1.59E-05	8.06E-05	1.45E-05	1.44E-05	5.51E-06	4.78E-04	9.82E-07	0.00E+00
TEEN	2.07E-05	8.61E-05	2.38E-05	2.26E-05	8.58E-06	6.43E-04	1.84E-06	0.00E+00
CHILD	3.53E-05	5.67E-05	5.72E-05	3.75E-05	1.40E-05	1.23E-03	2.80E-06	0.00E+00
MEAT								
ADULT	2.95E-06	2.11E-05	6.29E-07	1.87E-06	3.08E-07	1.28E-05	8.02E-08	0.00E+00
TEEN	2.17E-06	1.13E-05	5.23E-07	1.47E-06	2.50E-07	9.25E-06	7.59E-08	0.00E+00
CHILD	3.17E-06	5.73E-06	9.66E-07	1.83E-06	3.17E-07	1.40E-05	8.91E-08	0.00E+00
COW MILK								
ADULT	5.12E-06	5.13E-06	5.51E-06	7.40E-06	4.00E-06	3.62E-04	6.78E-07	0.00E+00
TEEN	5.71E-06	6.12E-06	1.00E-05	1.30E-05	7.11E-06	5.74E-04	1.40E-06	0.00E+00
CHILD	6.62E-06	4.15E-06	2.42E-05	2.26E-05	1.18E-05	1.14E-03	2.15E-06	0.00E+00
INFANT	9.45E-06	3.70E-06	4.07E-05	4.59E-05	1.98E-05	2.77E-03	3.90E-06	0.00E+00
GOATMILK								
ADULT	1.27E-05	1.42E-06	1.48E-05	1.94E-05	8.48E-06	4.35E-04	2.04E-06	0.00E+00
TEEN	1.25E-05	1.81E-06	2.68E-05	3.43E-05	1.50E-05	6.89E-04	4.21E-06	0.00E+00
CHILD	1.08E-05	1.35E-06	6.47E-05	5.95E-05	2.50E-05	1.37E-03	6.46E-06	0.00E+00
INFANT	1.26E-05	1.29E-06	1.06E-04	1.18E-04	4.10E-05	3.33E-03	1.17E-05	0.00E+00
INHAL								
ADULT	1.46E-07	1.20E-06	1.36E-07	2.17E-07	1.92E-07	1.99E-05	2.11E-05	0.00E+00
TEEN	1.62E-07	1.28E-06	1.92E-07	2.95E-07	2.64E-07	2.55E-05	3.09E-05	0.00E+00
CHILD	1.55E-07	1.80E-06	2.61E-07	2.83E-07	2.48E-07	3.07E-05	2.51E-05	0.00E+00
INFANT	8.96E-08	1.34E-06	1.81E-07	2.29E-07	1.62E-07	2.82E-05	1.61E-05	0.00E+00

TABLE 7. DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-DECEMBER 2019 (Continued)

SPECIAL LOCATION NO. 4A Nearest Cow
AT 3.50 MILES NNW

ANNUAL BETA AIR DOSE = 1.29E-04 MILLRADS
ANNUAL GAMMA AIR DOSE = 2.10E-04 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.41E-04	1.41E-04	1.41E-04	1.41E-04	1.41E-04	1.41E-04	1.42E-04	2.77E-04
GROUND	2.24E-05	2.24E-05	2.24E-05	2.24E-05	2.24E-05	2.24E-05	2.24E-05	2.64E-05
VEGET								
ADULT	5.83E-07	2.93E-06	5.77E-07	5.32E-07	2.17E-07	2.04E-05	3.59E-08	0.00E+00
TEEN	7.61E-07	3.14E-06	9.48E-07	8.36E-07	3.37E-07	2.74E-05	6.72E-08	0.00E+00
CHILD	1.30E-06	2.07E-06	2.28E-06	1.39E-06	5.48E-07	5.26E-05	1.02E-07	0.00E+00
MEAT								
ADULT	1.07E-07	7.61E-07	2.37E-08	6.80E-08	1.17E-08	5.46E-07	2.93E-09	0.00E+00
TEEN	7.86E-08	4.10E-07	1.98E-08	5.36E-08	9.48E-09	3.95E-07	2.77E-09	0.00E+00
CHILD	1.15E-07	2.07E-07	3.65E-08	6.68E-08	1.20E-08	5.97E-07	3.26E-09	0.00E+00
COW MILK								
ADULT	1.91E-07	1.88E-07	2.08E-07	2.77E-07	1.58E-07	1.55E-05	2.48E-08	0.00E+00
TEEN	2.15E-07	2.25E-07	3.78E-07	4.89E-07	2.81E-07	2.45E-05	5.13E-08	0.00E+00
CHILD	2.53E-07	1.53E-07	9.13E-07	8.46E-07	4.67E-07	4.86E-05	7.88E-08	0.00E+00
INFANT	3.67E-07	1.37E-07	1.55E-06	1.73E-06	7.83E-07	1.18E-04	1.43E-07	0.00E+00
GOATMILK								
ADULT	4.68E-07	5.48E-08	5.50E-07	7.19E-07	3.24E-07	1.86E-05	7.44E-08	0.00E+00
TEEN	4.65E-07	7.01E-08	9.98E-07	1.27E-06	5.75E-07	2.94E-05	1.54E-07	0.00E+00
CHILD	4.10E-07	5.26E-08	2.41E-06	2.20E-06	9.54E-07	5.83E-05	2.36E-07	0.00E+00
INFANT	4.90E-07	5.03E-08	3.97E-06	4.38E-06	1.57E-06	1.42E-04	4.28E-07	0.00E+00
INHAL								
ADULT	1.50E-08	1.50E-07	1.71E-08	2.45E-08	2.69E-08	3.03E-06	1.76E-06	0.00E+00
TEEN	1.71E-08	2.15E-07	2.40E-08	3.35E-08	3.72E-08	3.88E-06	2.59E-06	0.00E+00
CHILD	1.70E-08	6.60E-07	3.27E-08	3.24E-08	3.49E-08	4.65E-06	2.11E-06	0.00E+00
INFANT	1.05E-08	5.46E-07	2.35E-08	2.74E-08	2.29E-08	4.27E-06	1.39E-06	0.00E+00

TABLE 7. DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-DECEMBER 2019 (Continued)

SPECIAL LOCATION NO. 5A Nearest Garden
AT 1.90 MILES WNW

ANNUAL BETA AIR DOSE = 2.93E-04 MILLRADS
ANNUAL GAMMA AIR DOSE = 4.78E-04 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	3.21E-04	3.21E-04	3.21E-04	3.21E-04	3.21E-04	3.21E-04	3.24E-04	6.29E-04
GROUND	8.98E-05	8.98E-05	8.98E-05	8.98E-05	8.98E-05	8.98E-05	8.98E-05	1.06E-04
VEGET								
ADULT	2.40E-06	1.19E-05	2.67E-06	2.22E-06	9.91E-07	1.03E-04	1.46E-07	0.00E+00
TEEN	3.13E-06	1.27E-05	4.39E-06	3.48E-06	1.54E-06	1.39E-04	2.74E-07	0.00E+00
CHILD	5.34E-06	8.42E-06	1.06E-05	5.80E-06	2.49E-06	2.66E-04	4.17E-07	0.00E+00
MEAT								
ADULT	4.31E-07	3.05E-06	1.02E-07	2.76E-07	5.05E-08	2.76E-06	1.20E-08	0.00E+00
TEEN	3.16E-07	1.64E-06	8.47E-08	2.18E-07	4.10E-08	2.00E-06	1.13E-08	0.00E+00
CHILD	4.62E-07	8.30E-07	1.57E-07	2.71E-07	5.20E-08	3.02E-06	1.33E-08	0.00E+00
COW MILK								
ADULT	8.05E-07	7.74E-07	8.95E-07	1.18E-06	7.28E-07	7.83E-05	1.01E-07	0.00E+00
TEEN	9.19E-07	9.29E-07	1.63E-06	2.08E-06	1.29E-06	1.24E-04	2.09E-07	0.00E+00
CHILD	1.11E-06	6.36E-07	3.93E-06	3.60E-06	2.15E-06	2.46E-04	3.21E-07	0.00E+00
INFANT	1.65E-06	5.72E-07	6.74E-06	7.41E-06	3.62E-06	5.99E-04	5.81E-07	0.00E+00
GOATMILK								
ADULT	1.94E-06	2.44E-07	2.31E-06	2.99E-06	1.42E-06	9.40E-05	3.04E-07	0.00E+00
TEEN	1.95E-06	3.14E-07	4.19E-06	5.28E-06	2.52E-06	1.49E-04	6.27E-07	0.00E+00
CHILD	1.78E-06	2.38E-07	1.01E-05	9.15E-06	4.19E-06	2.96E-04	9.64E-07	0.00E+00
INFANT	2.19E-06	2.29E-07	1.68E-05	1.83E-05	6.93E-06	7.18E-04	1.74E-06	0.00E+00
INHAL								
ADULT	3.19E-08	3.20E-07	3.69E-08	5.30E-08	5.92E-08	6.66E-06	3.67E-06	0.00E+00
TEEN	3.66E-08	4.63E-07	5.19E-08	7.24E-08	8.18E-08	8.53E-06	5.41E-06	0.00E+00
CHILD	3.66E-08	1.44E-06	7.06E-08	7.01E-08	7.68E-08	1.02E-05	4.40E-06	0.00E+00
INFANT	2.26E-08	1.19E-06	5.10E-08	5.94E-08	5.04E-08	9.40E-06	2.90E-06	0.00E+00

TABLE 8. DOSES TO POPULATION WITHIN 50 MILES, JANUARY-MARCH 2019

ALARA ANNUAL INTEGRATED POPULATION DOSE SUMMARY (PERSON-REM)

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.18E-04	1.18E-04	1.18E-04	1.18E-04	1.18E-04	1.18E-04	1.20E-04	2.77E-04
	93.76%	92.58%	93.48%	93.63%	93.88%	63.19%	93.27%	97.04%
GROUND	7.20E-06	7.20E-06	7.20E-06	7.20E-06	7.20E-06	7.20E-06	7.20E-06	8.47E-06
	5.72%	5.65%	5.70%	5.71%	5.73%	3.85%	5.61%	2.96%
INHAL	1.52E-08	2.86E-07	2.81E-08	2.90E-08	4.07E-08	5.23E-06	1.38E-06	0.00E+00
	.01%	.22%	.02%	.02%	.03%	2.80%	1.07%	.00%
VEGET	3.22E-07	1.31E-06	5.15E-07	2.90E-07	6.91E-08	7.27E-07	2.26E-08	0.00E+00
	.26%	1.03%	.41%	.23%	.05%	.39%	.02%	.00%
COW MILK	2.35E-07	2.09E-07	4.58E-07	4.61E-07	3.78E-07	5.44E-05	3.29E-08	0.00E+00
	.19%	.16%	.36%	.37%	.30%	29.15%	.03%	.00%
MEAT	7.62E-08	4.57E-07	2.93E-08	4.74E-08	1.14E-08	1.14E-06	1.86E-09	0.00E+00
	.06%	.36%	.02%	.04%	.01%	.61%	.00%	.00%
TOTAL	1.26E-04	1.27E-04	1.26E-04	1.26E-04	1.26E-04	1.87E-04	1.28E-04	2.86E-04

TABLE 9. DOSES TO POPULATION WITHIN 50 MILES, APRIL-JUNE 2019

ALARA ANNUAL INTEGRATED POPULATION DOSE SUMMARY (PERSON-REM)

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	2.15E-06	2.15E-06	2.15E-06	2.15E-06	2.15E-06	2.15E-06	2.16E-06	4.42E-06
	8.04%	7.09%	7.97%	7.80%	8.33%	3.81%	7.85%	14.19%
GROUND	2.27E-05	2.27E-05	2.27E-05	2.27E-05	2.27E-05	2.27E-05	2.27E-05	2.67E-05
	85.01%	75.00%	84.26%	82.51%	88.16%	40.35%	82.42%	85.81%
INHAL	1.88E-08	1.51E-07	2.14E-08	3.14E-08	2.72E-08	2.83E-06	2.43E-06	0.00E+00
	.07%	.50%	.08%	.11%	.11%	5.02%	8.80%	.00%
VEGET	1.00E-06	3.57E-06	8.15E-07	1.10E-06	2.80E-07	3.63E-07	9.62E-08	0.00E+00
	3.74%	11.77%	3.02%	3.98%	1.09%	.65%	.35%	.00%
COW MILK	6.18E-07	4.61E-07	1.20E-06	1.39E-06	5.68E-07	2.77E-05	1.49E-07	0.00E+00
	2.31%	1.52%	4.45%	5.04%	2.20%	49.14%	.54%	.00%
MEAT	2.22E-07	1.25E-06	6.03E-08	1.52E-07	2.72E-08	5.78E-07	8.26E-09	0.00E+00
	.83%	4.12%	.22%	.55%	.11%	1.03%	.03%	.00%
TOTAL	2.67E-05	3.03E-05	2.70E-05	2.75E-05	2.58E-05	5.63E-05	2.76E-05	3.11E-05

TABLE 10. DOSES TO POPULATION WITHIN 50 MILES, JANUARY-JUNE 2019

ALARA ANNUAL INTEGRATED POPULATION DOSE SUMMARY (PERSON-REM)

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.22E-04	1.22E-04	1.22E-04	1.22E-04	1.22E-04	1.22E-04	1.24E-04	2.86E-04
	79.41%	76.82%	79.08%	78.90%	79.98%	49.89%	78.69%	89.28%
GROUND	2.92E-05	2.92E-05	2.92E-05	2.92E-05	2.92E-05	2.92E-05	2.92E-05	3.44E-05
	18.96%	18.35%	18.89%	18.84%	19.10%	11.92%	18.53%	10.72%
INHAL	3.59E-08	4.48E-07	5.16E-08	6.33E-08	6.93E-08	8.13E-06	4.07E-06	0.00E+00
	.02%	.28%	.03%	.04%	.05%	3.31%	2.58%	.00%
VEGET	1.32E-06	4.88E-06	1.34E-06	1.39E-06	3.50E-07	1.10E-06	1.19E-07	0.00E+00
	.86%	3.06%	.86%	.89%	.23%	.45%	.08%	.00%
COW MILK	8.55E-07	6.72E-07	1.66E-06	1.85E-06	9.50E-07	8.27E-05	1.82E-07	0.00E+00
	.55%	.42%	1.07%	1.20%	.62%	33.72%	.12%	.00%
MEAT	2.99E-07	1.71E-06	9.00E-08	2.00E-07	3.87E-08	1.73E-06	1.01E-08	0.00E+00
	.19%	1.07%	.06%	.13%	.03%	.71%	.01%	.00%
TOTAL	1.54E-04	1.59E-04	1.55E-04	1.55E-04	1.53E-04	2.45E-04	1.58E-04	3.21E-04

TABLE 11. DOSES TO POPULATION WITHIN 50 MILES, JULY-SEPTEMBER 2019

ALARA ANNUAL INTEGRATED POPULATION DOSE SUMMARY (PERSON-REM)

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.66E-06	1.66E-06	1.66E-06	1.66E-06	1.66E-06	1.66E-06	1.68E-06	3.75E-06
	2.68%	2.34%	2.70%	2.65%	2.78%	1.02%	2.55%	5.34%
GROUND	5.65E-05	5.65E-05	5.65E-05	5.65E-05	5.65E-05	5.65E-05	5.65E-05	6.65E-05
	91.33%	79.50%	91.88%	90.18%	94.46%	34.57%	85.80%	94.66%
INHAL	5.01E-08	3.99E-07	5.21E-08	8.01E-08	7.93E-08	9.63E-06	7.29E-06	0.00E+00
	.08%	.56%	.08%	.13%	.13%	5.89%	11.07%	.00%
VEGET	2.07E-06	8.44E-06	1.26E-06	1.86E-06	4.17E-07	1.15E-06	1.44E-07	0.00E+00
	3.34%	11.87%	2.05%	2.96%	.70%	.70%	.22%	.00%
COW MILK	1.09E-06	1.10E-06	1.93E-06	2.26E-06	1.11E-06	9.26E-05	2.22E-07	0.00E+00
	1.76%	1.54%	3.13%	3.60%	1.86%	56.64%	.34%	.00%
MEAT	4.98E-07	2.98E-06	9.29E-08	3.00E-07	4.60E-08	1.93E-06	1.23E-08	0.00E+00
	.80%	4.19%	.15%	.48%	.08%	1.18%	.02%	.00%
TOTAL	6.19E-05	7.11E-05	6.15E-05	6.27E-05	5.98E-05	1.64E-04	6.59E-05	7.02E-05

TABLE 12. DOSES TO POPULATION WITHIN 50 MILES, OCTOBER-DECEMBER 2019

ALARA ANNUAL INTEGRATED POPULATION DOSE SUMMARY (PERSON-REM)

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	2.50E-06	2.50E-06	2.50E-06	2.50E-06	2.50E-06	2.50E-06	2.53E-06	5.94E-06
	20.75%	18.37%	19.13%	20.31%	21.14%	3.49%	19.12%	36.52%
GROUND	8.78E-06	8.78E-06	8.78E-06	8.78E-06	8.78E-06	8.78E-06	8.78E-06	1.03E-05
	72.73%	64.38%	67.04%	71.19%	74.09%	12.22%	66.31%	63.48%
INHAL	2.25E-08	1.49E-07	4.10E-08	4.22E-08	5.58E-08	7.23E-06	1.85E-06	0.00E+00
	.19%	1.09%	.31%	.34%	.47%	10.06%	13.96%	.00%
VEGET	3.94E-07	1.49E-06	1.08E-06	3.71E-07	9.19E-08	6.66E-07	3.10E-08	0.00E+00
	3.27%	10.91%	8.26%	3.00%	.78%	.93%	.23%	.00%
COW MILK	2.83E-07	2.18E-07	6.51E-07	5.78E-07	4.05E-07	5.16E-05	4.76E-08	0.00E+00
	2.34%	1.60%	4.97%	4.69%	3.42%	71.78%	.36%	.00%
MEAT	8.73E-08	4.98E-07	3.62E-08	5.74E-08	1.34E-08	1.09E-06	2.64E-09	0.00E+00
	.72%	3.65%	.28%	.47%	.11%	1.52%	.02%	.00%
TOTAL	1.21E-05	1.36E-05	1.31E-05	1.23E-05	1.18E-05	7.18E-05	1.32E-05	1.63E-05

TABLE 13. DOSES TO POPULATION WITHIN 50 MILES, JULY-DECEMBER 2019

ALARA ANNUAL INTEGRATED POPULATION DOSE SUMMARY (PERSON-REM)

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	4.20E-06	4.20E-06	4.20E-06	4.20E-06	4.20E-06	4.20E-06	4.25E-06	9.81E-06
	5.81%	5.06%	5.76%	5.73%	6.00%	1.79%	5.39%	11.61%
GROUND	6.35E-05	6.35E-05	6.35E-05	6.35E-05	6.35E-05	6.35E-05	6.35E-05	7.47E-05
	87.94%	76.47%	87.15%	86.67%	90.80%	27.09%	80.59%	88.39%
INHAL	8.04E-08	5.96E-07	9.79E-08	1.33E-07	1.42E-07	1.77E-05	1.06E-05	0.00E+00
	.11%	.72%	.13%	.18%	.20%	7.55%	13.43%	.00%
VEGET	2.47E-06	9.94E-06	2.35E-06	2.23E-06	5.11E-07	1.81E-06	1.76E-07	0.00E+00
	3.42%	11.97%	3.22%	3.05%	.73%	.77%	.22%	.00%
COW MILK	1.38E-06	1.32E-06	2.59E-06	2.84E-06	1.52E-06	1.44E-04	2.71E-07	0.00E+00
	1.90%	1.59%	3.55%	3.88%	2.18%	61.51%	.34%	.00%
MEAT	5.86E-07	3.48E-06	1.30E-07	3.58E-07	5.96E-08	3.02E-06	1.50E-08	0.00E+00
	.81%	4.19%	.18%	.49%	.09%	1.29%	.02%	.00%
TOTAL	7.22E-05	8.30E-05	7.28E-05	7.33E-05	6.99E-05	2.34E-04	7.88E-05	8.45E-05

TABLE 14. DOSES TO POPULATION WITHIN 50 MILES, JANUARY-DECEMBER 2019

ALARA ANNUAL INTEGRATED POPULATION DOSE SUMMARY (PERSON-REM)

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	1.33E-04	1.33E-04	1.33E-04	1.33E-04	1.33E-04	1.33E-04	1.34E-04	3.11E-04
	57.29%	53.58%	56.98%	56.79%	58.14%	27.43%	55.78%	74.21%
GROUND	9.18E-05	9.18E-05	9.18E-05	9.18E-05	9.18E-05	9.18E-05	9.18E-05	1.08E-04
	39.68%	37.11%	39.46%	39.33%	40.27%	19.00%	38.09%	25.79%
INHAL	1.12E-07	1.03E-06	1.45E-07	1.90E-07	2.05E-07	2.49E-05	1.40E-05	0.00E+00
	.05%	.42%	.06%	.08%	.09%	5.15%	5.81%	.00%
VEGET	3.79E-06	1.48E-05	3.67E-06	3.61E-06	8.57E-07	2.91E-06	2.93E-07	0.00E+00
	1.64%	5.99%	1.58%	1.55%	.38%	.60%	.12%	.00%
COW MILK	2.22E-06	1.99E-06	4.23E-06	4.68E-06	2.46E-06	2.26E-04	4.52E-07	0.00E+00
	.96%	.80%	1.82%	2.01%	1.08%	46.84%	.19%	.00%
MEAT	8.85E-07	5.19E-06	2.19E-07	5.57E-07	9.80E-08	4.75E-06	2.51E-08	0.00E+00
	.38%	2.10%	.09%	.24%	.04%	.98%	.01%	.00%
TOTAL	2.31E-04	2.47E-04	2.33E-04	2.33E-04	2.28E-04	4.83E-04	2.41E-04	4.19E-04

CARBON-14 GASEOUS EFFLUENT DOSE CALCULATIONS

Doses to the maximum individual resulting from the release of Carbon-14 in gaseous effluents from the Cooper Nuclear Station (CNS) were calculated using the latest version of the GASPAR computer code included as part of NRCDose 2.3.20 (ORNL 2015). Four pathways were selected for individual dose calculations: the nearest site boundary for inhalation, nearest garden for vegetation ingestion, nearest animal for meat ingestion, and the nearest milk animal (cow). Based on the 2019 Land Use Census, there are no meat or milk animals identified within 5 miles of CNS. However, CNS maintains a virtual cow receptor at 3.5 miles north-northwest of the plant and conservatively includes this receptor in dose calculations.

Use of a normalized Carbon-14 source term and scaling factors based on the annual thermal gigawatts (GW_T) power generation were utilized to determine the quantity of Carbon-14 in the CNS gaseous effluent discharge for 2019. Specifically, the Boiling Water Reactor proxy production rate of 5.1 curies Carbon-14 per GW_T generation using the methodology described in EPRI, 2010 was the basis for the CNS total calculated emissions of 12.2 curies of Carbon-14 in 2019.

GASPAR implements the radiological dose models of Regulatory Guide 1.109 for determining the radiation exposure to man from four principal atmospheric exposure pathways: plume, ground, inhalation, and ingestion. Doses to the maximum individual are calculated as a function of age group and pathway for significant body organs.

Tables 15 through 21 present maximum individual doses. Note that the inhalation pathway was calculated at the closest site boundary receptor and was negligible for Carbon-14 and is not included in the tables. In addition, the doses presented were conservatively calculated based on the annual site X/Qs. These X/Qs result in doses approximately 20% higher than those calculated with the X/Qs based on growing season meteorology.

Additional assumptions and data used for input to the GASPAR code are described in a separate section of this appendix (see page C66).

TABLE 15. CARBON-14 DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-MARCH 2019

SPECIAL LOCATION NO. 4A Nearest Cow
AT 3.50 MILES NNW

ANNUAL BETA AIR DOSE = 0.00E+00 MILLRADS
ANNUAL GAMMA AIR DOSE = 0.00E+00 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GROUND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VEGET								
ADULT	4.82E-03	4.82E-03	2.41E-02	4.82E-03	4.82E-03	4.82E-03	4.82E-03	4.82E-03
TEEN	8.06E-03	8.06E-03	4.03E-02	8.06E-03	8.06E-03	8.06E-03	8.06E-03	8.06E-03
CHILD	1.96E-02	1.96E-02	9.81E-02	1.96E-02	1.96E-02	1.96E-02	1.96E-02	1.96E-02
MEAT								
ADULT	1.92E-03	1.92E-03	9.62E-03	1.92E-03	1.92E-03	1.92E-03	1.92E-03	1.92E-03
TEEN	1.63E-03	1.63E-03	8.13E-03	1.63E-03	1.63E-03	1.63E-03	1.63E-03	1.63E-03
CHILD	3.06E-03	3.06E-03	1.53E-02	3.06E-03	3.06E-03	3.06E-03	3.06E-03	3.06E-03
COW MILK								
ADULT	2.10E-03	2.10E-03	1.05E-02	2.10E-03	2.10E-03	2.10E-03	2.10E-03	2.10E-03
TEEN	3.87E-03	3.87E-03	1.94E-02	3.87E-03	3.87E-03	3.87E-03	3.87E-03	3.87E-03
CHILD	9.52E-03	9.52E-03	4.76E-02	9.52E-03	9.52E-03	9.52E-03	9.52E-03	9.52E-03
INFANT	1.99E-02	1.99E-02	9.32E-02	1.99E-02	1.99E-02	1.99E-02	1.99E-02	1.99E-02
GOATMILK								
ADULT	2.10E-03	2.10E-03	1.05E-02	2.10E-03	2.10E-03	2.10E-03	2.10E-03	2.10E-03
TEEN	3.87E-03	3.87E-03	1.94E-02	3.87E-03	3.87E-03	3.87E-03	3.87E-03	3.87E-03
CHILD	9.52E-03	9.52E-03	4.76E-02	9.52E-03	9.52E-03	9.52E-03	9.52E-03	9.52E-03
INFANT	1.99E-02	1.99E-02	9.32E-02	1.99E-02	1.99E-02	1.99E-02	1.99E-02	1.99E-02

TABLE 15. CARBON-14 DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-MARCH 2019 (Continued)

SPECIAL LOCATION NO. 5A Nearest Garden
AT 1.90 MILES WNW

ANNUAL BETA AIR DOSE = 0.00E+00 MILLRADS
ANNUAL GAMMA AIR DOSE = 0.00E+00 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GROUND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VEGET								
ADULT	9.16E-03	9.16E-03	4.58E-02	9.16E-03	9.16E-03	9.16E-03	9.16E-03	9.16E-03
TEEN	1.53E-02	1.53E-02	7.66E-02	1.53E-02	1.53E-02	1.53E-02	1.53E-02	1.53E-02
CHILD	3.73E-02	3.73E-02	1.86E-01	3.73E-02	3.73E-02	3.73E-02	3.73E-02	3.73E-02
MEAT								
ADULT	3.66E-03	3.66E-03	1.83E-02	3.66E-03	3.66E-03	3.66E-03	3.66E-03	3.66E-03
TEEN	3.09E-03	3.09E-03	1.54E-02	3.09E-03	3.09E-03	3.09E-03	3.09E-03	3.09E-03
CHILD	5.80E-03	5.80E-03	2.90E-02	5.80E-03	5.80E-03	5.80E-03	5.80E-03	5.80E-03
COW MILK								
ADULT	3.99E-03	3.99E-03	1.99E-02	3.99E-03	3.99E-03	3.99E-03	3.99E-03	3.99E-03
TEEN	7.36E-03	7.36E-03	3.68E-02	7.36E-03	7.36E-03	7.36E-03	7.36E-03	7.36E-03
CHILD	1.81E-02	1.81E-02	9.04E-02	1.81E-02	1.81E-02	1.81E-02	1.81E-02	1.81E-02
INFANT	3.78E-02	3.78E-02	1.77E-01	3.78E-02	3.78E-02	3.78E-02	3.78E-02	3.78E-02
GOATMILK								
ADULT	3.99E-03	3.99E-03	1.99E-02	3.99E-03	3.99E-03	3.99E-03	3.99E-03	3.99E-03
TEEN	7.36E-03	7.36E-03	3.68E-02	7.36E-03	7.36E-03	7.36E-03	7.36E-03	7.36E-03
CHILD	1.81E-02	1.81E-02	9.04E-02	1.81E-02	1.81E-02	1.81E-02	1.81E-02	1.81E-02
INFANT	3.78E-02	3.78E-02	1.77E-01	3.78E-02	3.78E-02	3.78E-02	3.78E-02	3.78E-02

TABLE 16. CARBON-14 DOSES TO MAXIMUM INDIVIDUAL (MREM), APRIL-JUNE 2019

SPECIAL LOCATION NO. 4A Nearest Cow
AT 3.50 MILES NNW

ANNUAL BETA AIR DOSE = 0.00E+00 MILLRADS
ANNUAL GAMMA AIR DOSE = 0.00E+00 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GROUND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VEGET								
ADULT	2.92E-03	2.92E-03	1.46E-02	2.92E-03	2.92E-03	2.92E-03	2.92E-03	2.92E-03
TEEN	4.89E-03	4.89E-03	2.44E-02	4.89E-03	4.89E-03	4.89E-03	4.89E-03	4.89E-03
CHILD	1.19E-02	1.19E-02	5.95E-02	1.19E-02	1.19E-02	1.19E-02	1.19E-02	1.19E-02
MEAT								
ADULT	1.17E-03	1.17E-03	5.83E-03	1.17E-03	1.17E-03	1.17E-03	1.17E-03	1.17E-03
TEEN	9.85E-04	9.85E-04	4.92E-03	9.85E-04	9.85E-04	9.85E-04	9.85E-04	9.85E-04
CHILD	1.85E-03	1.85E-03	9.26E-03	1.85E-03	1.85E-03	1.85E-03	1.85E-03	1.85E-03
COW MILK								
ADULT	1.27E-03	1.27E-03	6.36E-03	1.27E-03	1.27E-03	1.27E-03	1.27E-03	1.27E-03
TEEN	2.35E-03	2.35E-03	1.17E-02	2.35E-03	2.35E-03	2.35E-03	2.35E-03	2.35E-03
CHILD	5.77E-03	5.77E-03	2.88E-02	5.77E-03	5.77E-03	5.77E-03	5.77E-03	5.77E-03
INFANT	1.21E-02	1.21E-02	5.65E-02	1.21E-02	1.21E-02	1.21E-02	1.21E-02	1.21E-02
GOATMILK								
ADULT	1.27E-03	1.27E-03	6.36E-03	1.27E-03	1.27E-03	1.27E-03	1.27E-03	1.27E-03
TEEN	2.35E-03	2.35E-03	1.17E-02	2.35E-03	2.35E-03	2.35E-03	2.35E-03	2.35E-03
CHILD	5.77E-03	5.77E-03	2.88E-02	5.77E-03	5.77E-03	5.77E-03	5.77E-03	5.77E-03
INFANT	1.21E-02	1.21E-02	5.65E-02	1.21E-02	1.21E-02	1.21E-02	1.21E-02	1.21E-02

TABLE 16. CARBON-14 DOSES TO MAXIMUM INDIVIDUAL (MREM), APRIL-JUNE 2019 (Continued)

SPECIAL LOCATION NO. 5A Nearest Garden
AT 1.90 MILES WNW

ANNUAL BETA AIR DOSE = 0.00E+00 MILLRADS
ANNUAL GAMMA AIR DOSE = 0.00E+00 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GROUND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VEGET								
ADULT	7.63E-03	7.63E-03	3.81E-02	7.63E-03	7.63E-03	7.63E-03	7.63E-03	7.63E-03
TEEN	1.28E-02	1.28E-02	6.38E-02	1.28E-02	1.28E-02	1.28E-02	1.28E-02	1.28E-02
CHILD	3.11E-02	3.11E-02	1.55E-01	3.11E-02	3.11E-02	3.11E-02	3.11E-02	3.11E-02
MEAT								
ADULT	3.04E-03	3.04E-03	1.52E-02	3.04E-03	3.04E-03	3.04E-03	3.04E-03	3.04E-03
TEEN	2.57E-03	2.57E-03	1.29E-02	2.57E-03	2.57E-03	2.57E-03	2.57E-03	2.57E-03
CHILD	4.83E-03	4.83E-03	2.42E-02	4.83E-03	4.83E-03	4.83E-03	4.83E-03	4.83E-03
COW MILK								
ADULT	3.32E-03	3.32E-03	1.66E-02	3.32E-03	3.32E-03	3.32E-03	3.32E-03	3.32E-03
TEEN	6.13E-03	6.13E-03	3.06E-02	6.13E-03	6.13E-03	6.13E-03	6.13E-03	6.13E-03
CHILD	1.51E-02	1.51E-02	7.53E-02	1.51E-02	1.51E-02	1.51E-02	1.51E-02	1.51E-02
INFANT	3.15E-02	3.15E-02	1.48E-01	3.15E-02	3.15E-02	3.15E-02	3.15E-02	3.15E-02
GOATMILK								
ADULT	3.32E-03	3.32E-03	1.66E-02	3.32E-03	3.32E-03	3.32E-03	3.32E-03	3.32E-03
TEEN	6.13E-03	6.13E-03	3.06E-02	6.13E-03	6.13E-03	6.13E-03	6.13E-03	6.13E-03
CHILD	1.51E-02	1.51E-02	7.53E-02	1.51E-02	1.51E-02	1.51E-02	1.51E-02	1.51E-02
INFANT	3.15E-02	3.15E-02	1.48E-01	3.15E-02	3.15E-02	3.15E-02	3.15E-02	3.15E-02

TABLE 17. CARBON-14 DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-JUNE 2019

SPECIAL LOCATION NO. 4A Nearest Cow
AT 3.50 MILES NNW

ANNUAL BETA AIR DOSE = 0.00E+00 MILLRADS
ANNUAL GAMMA AIR DOSE = 0.00E+00 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GROUND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VEGET								
ADULT	7.75E-03	7.75E-03	3.88E-02	7.75E-03	7.75E-03	7.75E-03	7.75E-03	7.75E-03
TEEN	1.30E-02	1.30E-02	6.48E-02	1.30E-02	1.30E-02	1.30E-02	1.30E-02	1.30E-02
CHILD	3.16E-02	3.16E-02	1.58E-01	3.16E-02	3.16E-02	3.16E-02	3.16E-02	3.16E-02
MEAT								
ADULT	3.09E-03	3.09E-03	1.55E-02	3.09E-03	3.09E-03	3.09E-03	3.09E-03	3.09E-03
TEEN	2.61E-03	2.61E-03	1.31E-02	2.61E-03	2.61E-03	2.61E-03	2.61E-03	2.61E-03
CHILD	4.91E-03	4.91E-03	2.46E-02	4.91E-03	4.91E-03	4.91E-03	4.91E-03	4.91E-03
COW MILK								
ADULT	3.37E-03	3.37E-03	1.69E-02	3.37E-03	3.37E-03	3.37E-03	3.37E-03	3.37E-03
TEEN	6.23E-03	6.23E-03	3.11E-02	6.23E-03	6.23E-03	6.23E-03	6.23E-03	6.23E-03
CHILD	1.53E-02	1.53E-02	7.65E-02	1.53E-02	1.53E-02	1.53E-02	1.53E-02	1.53E-02
INFANT	3.20E-02	3.20E-02	1.50E-01	3.20E-02	3.20E-02	3.20E-02	3.20E-02	3.20E-02
GOATMILK								
ADULT	3.37E-03	3.37E-03	1.69E-02	3.37E-03	3.37E-03	3.37E-03	3.37E-03	3.37E-03
TEEN	6.23E-03	6.23E-03	3.11E-02	6.23E-03	6.23E-03	6.23E-03	6.23E-03	6.23E-03
CHILD	1.53E-02	1.53E-02	7.65E-02	1.53E-02	1.53E-02	1.53E-02	1.53E-02	1.53E-02
INFANT	3.20E-02	3.20E-02	1.50E-01	3.20E-02	3.20E-02	3.20E-02	3.20E-02	3.20E-02

TABLE 17. CARBON-14 DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-JUNE 2019 (Continued)

SPECIAL LOCATION NO. 5A Nearest Garden
AT 1.90 MILES WNW

ANNUAL BETA AIR DOSE = 0.00E+00 MILLRADS
ANNUAL GAMMA AIR DOSE = 0.00E+00 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GROUND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VEGET								
ADULT	1.65E-02	1.65E-02	8.24E-02	1.65E-02	1.65E-02	1.65E-02	1.65E-02	1.65E-02
TEEN	2.75E-02	2.75E-02	1.38E-01	2.75E-02	2.75E-02	2.75E-02	2.75E-02	2.75E-02
CHILD	6.71E-02	6.71E-02	3.35E-01	6.71E-02	6.71E-02	6.71E-02	6.71E-02	6.71E-02
MEAT								
ADULT	6.57E-03	6.57E-03	3.29E-02	6.57E-03	6.57E-03	6.57E-03	6.57E-03	6.57E-03
TEEN	5.55E-03	5.55E-03	2.78E-02	5.55E-03	5.55E-03	5.55E-03	5.55E-03	5.55E-03
CHILD	1.04E-02	1.04E-02	5.22E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02	1.04E-02
COW MILK								
ADULT	7.17E-03	7.17E-03	3.59E-02	7.17E-03	7.17E-03	7.17E-03	7.17E-03	7.17E-03
TEEN	1.32E-02	1.32E-02	6.61E-02	1.32E-02	1.32E-02	1.32E-02	1.32E-02	1.32E-02
CHILD	3.25E-02	3.25E-02	1.63E-01	3.25E-02	3.25E-02	3.25E-02	3.25E-02	3.25E-02
INFANT	6.80E-02	6.80E-02	3.19E-01	6.80E-02	6.80E-02	6.80E-02	6.80E-02	6.80E-02
GOATMILK								
ADULT	7.17E-03	7.17E-03	3.59E-02	7.17E-03	7.17E-03	7.17E-03	7.17E-03	7.17E-03
TEEN	1.32E-02	1.32E-02	6.61E-02	1.32E-02	1.32E-02	1.32E-02	1.32E-02	1.32E-02
CHILD	3.25E-02	3.25E-02	1.63E-01	3.25E-02	3.25E-02	3.25E-02	3.25E-02	3.25E-02
INFANT	6.80E-02	6.80E-02	3.19E-01	6.80E-02	6.80E-02	6.80E-02	6.80E-02	6.80E-02

TABLE 18. CARBON-14 DOSES TO MAXIMUM INDIVIDUAL (MREM), JULY-SEPTEMBER 2019

SPECIAL LOCATION NO. 4A Nearest Cow
AT 3.50 MILES NNW

ANNUAL BETA AIR DOSE = 0.00E+00 MILLRADS
ANNUAL GAMMA AIR DOSE = 0.00E+00 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GROUND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VEGET								
ADULT	2.96E-03	2.96E-03	1.48E-02	2.96E-03	2.96E-03	2.96E-03	2.96E-03	2.96E-03
TEEN	4.95E-03	4.95E-03	2.47E-02	4.95E-03	4.95E-03	4.95E-03	4.95E-03	4.95E-03
CHILD	1.20E-02	1.20E-02	6.02E-02	1.20E-02	1.20E-02	1.20E-02	1.20E-02	1.20E-02
MEAT								
ADULT	1.18E-03	1.18E-03	5.91E-03	1.18E-03	1.18E-03	1.18E-03	1.18E-03	1.18E-03
TEEN	9.98E-04	9.98E-04	4.99E-03	9.98E-04	9.98E-04	9.98E-04	9.98E-04	9.98E-04
CHILD	1.88E-03	1.88E-03	9.38E-03	1.88E-03	1.88E-03	1.88E-03	1.88E-03	1.88E-03
COW MILK								
ADULT	1.29E-03	1.29E-03	6.44E-03	1.29E-03	1.29E-03	1.29E-03	1.29E-03	1.29E-03
TEEN	2.38E-03	2.38E-03	1.19E-02	2.38E-03	2.38E-03	2.38E-03	2.38E-03	2.38E-03
CHILD	5.84E-03	5.84E-03	2.92E-02	5.84E-03	5.84E-03	5.84E-03	5.84E-03	5.84E-03
INFANT	1.22E-02	1.22E-02	5.72E-02	1.22E-02	1.22E-02	1.22E-02	1.22E-02	1.22E-02
GOATMILK								
ADULT	1.29E-03	1.29E-03	6.44E-03	1.29E-03	1.29E-03	1.29E-03	1.29E-03	1.29E-03
TEEN	2.38E-03	2.38E-03	1.19E-02	2.38E-03	2.38E-03	2.38E-03	2.38E-03	2.38E-03
CHILD	5.84E-03	5.84E-03	2.92E-02	5.84E-03	5.84E-03	5.84E-03	5.84E-03	5.84E-03
INFANT	1.22E-02	1.22E-02	5.72E-02	1.22E-02	1.22E-02	1.22E-02	1.22E-02	1.22E-02

TABLE 18. CARBON-14 DOSES TO MAXIMUM INDIVIDUAL (MREM), JULY-SEPTEMBER 2019 (Continued)

SPECIAL LOCATION NO. 5A Nearest Garden
AT 1.90 MILES WNW

ANNUAL BETA AIR DOSE = 0.00E+00 MILLRADS
ANNUAL GAMMA AIR DOSE = 0.00E+00 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GROUND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VEGET								
ADULT	9.21E-03	9.21E-03	4.60E-02	9.21E-03	9.21E-03	9.21E-03	9.21E-03	9.21E-03
TEEN	1.54E-02	1.54E-02	7.70E-02	1.54E-02	1.54E-02	1.54E-02	1.54E-02	1.54E-02
CHILD	3.75E-02	3.75E-02	1.87E-01	3.75E-02	3.75E-02	3.75E-02	3.75E-02	3.75E-02
MEAT								
ADULT	3.67E-03	3.67E-03	1.84E-02	3.67E-03	3.67E-03	3.67E-03	3.67E-03	3.67E-03
TEEN	3.10E-03	3.10E-03	1.55E-02	3.10E-03	3.10E-03	3.10E-03	3.10E-03	3.10E-03
CHILD	5.84E-03	5.84E-03	2.92E-02	5.84E-03	5.84E-03	5.84E-03	5.84E-03	5.84E-03
COW MILK								
ADULT	4.01E-03	4.01E-03	2.00E-02	4.01E-03	4.01E-03	4.01E-03	4.01E-03	4.01E-03
TEEN	7.39E-03	7.39E-03	3.70E-02	7.39E-03	7.39E-03	7.39E-03	7.39E-03	7.39E-03
CHILD	1.82E-02	1.82E-02	9.09E-02	1.82E-02	1.82E-02	1.82E-02	1.82E-02	1.82E-02
INFANT	3.80E-02	3.80E-02	1.78E-01	3.80E-02	3.80E-02	3.80E-02	3.80E-02	3.80E-02
GOATMILK								
ADULT	4.01E-03	4.01E-03	2.00E-02	4.01E-03	4.01E-03	4.01E-03	4.01E-03	4.01E-03
TEEN	7.39E-03	7.39E-03	3.70E-02	7.39E-03	7.39E-03	7.39E-03	7.39E-03	7.39E-03
CHILD	1.82E-02	1.82E-02	9.09E-02	1.82E-02	1.82E-02	1.82E-02	1.82E-02	1.82E-02
INFANT	3.80E-02	3.80E-02	1.78E-01	3.80E-02	3.80E-02	3.80E-02	3.80E-02	3.80E-02

TABLE 19. CARBON-14 DOSES TO MAXIMUM INDIVIDUAL (MREM), OCTOBER-DECEMBER 2019

SPECIAL LOCATION NO. 4A Nearest Cow
AT 3.50 MILES NNW

ANNUAL BETA AIR DOSE = 0.00E+00 MILLRADS
ANNUAL GAMMA AIR DOSE = 0.00E+00 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GROUND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VEGET								
ADULT	4.44E-03	4.44E-03	2.22E-02	4.44E-03	4.44E-03	4.44E-03	4.44E-03	4.44E-03
TEEN	7.42E-03	7.42E-03	3.71E-02	7.42E-03	7.42E-03	7.42E-03	7.42E-03	7.42E-03
CHILD	1.81E-02	1.81E-02	9.04E-02	1.81E-02	1.81E-02	1.81E-02	1.81E-02	1.81E-02
MEAT								
ADULT	1.77E-03	1.77E-03	8.86E-03	1.77E-03	1.77E-03	1.77E-03	1.77E-03	1.77E-03
TEEN	1.50E-03	1.50E-03	7.48E-03	1.50E-03	1.50E-03	1.50E-03	1.50E-03	1.50E-03
CHILD	2.81E-03	2.81E-03	1.41E-02	2.81E-03	2.81E-03	2.81E-03	2.81E-03	2.81E-03
COW MILK								
ADULT	1.93E-03	1.93E-03	9.66E-03	1.93E-03	1.93E-03	1.93E-03	1.93E-03	1.93E-03
TEEN	3.57E-03	3.57E-03	1.78E-02	3.57E-03	3.57E-03	3.57E-03	3.57E-03	3.57E-03
CHILD	8.77E-03	8.77E-03	4.38E-02	8.77E-03	8.77E-03	8.77E-03	8.77E-03	8.77E-03
INFANT	1.83E-02	1.83E-02	8.59E-02	1.83E-02	1.83E-02	1.83E-02	1.83E-02	1.83E-02
GOATMILK								
ADULT	1.93E-03	1.93E-03	9.66E-03	1.93E-03	1.93E-03	1.93E-03	1.93E-03	1.93E-03
TEEN	3.57E-03	3.57E-03	1.78E-02	3.57E-03	3.57E-03	3.57E-03	3.57E-03	3.57E-03
CHILD	8.77E-03	8.77E-03	4.38E-02	8.77E-03	8.77E-03	8.77E-03	8.77E-03	8.77E-03
INFANT	1.83E-02	1.83E-02	8.59E-02	1.83E-02	1.83E-02	1.83E-02	1.83E-02	1.83E-02

TABLE 19. CARBON-14 DOSES TO MAXIMUM INDIVIDUAL (MREM), OCTOBER-DECEMBER 2019 (Continued)

SPECIAL LOCATION NO. 5A Nearest Garden
AT 3.00 MILES NNW

ANNUAL BETA AIR DOSE = 0.00E+00 MILLRADS
ANNUAL GAMMA AIR DOSE = 0.00E+00 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GROUND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VEGET								
ADULT	5.92E-03	5.92E-03	2.96E-02	5.92E-03	5.92E-03	5.92E-03	5.92E-03	5.92E-03
TEEN	9.90E-03	9.90E-03	4.95E-02	9.90E-03	9.90E-03	9.90E-03	9.90E-03	9.90E-03
CHILD	2.41E-02	2.41E-02	1.20E-01	2.41E-02	2.41E-02	2.41E-02	2.41E-02	2.41E-02
MEAT								
ADULT	2.36E-03	2.36E-03	1.18E-02	2.36E-03	2.36E-03	2.36E-03	2.36E-03	2.36E-03
TEEN	2.00E-03	2.00E-03	9.98E-03	2.00E-03	2.00E-03	2.00E-03	2.00E-03	2.00E-03
CHILD	3.75E-03	3.75E-03	1.88E-02	3.75E-03	3.75E-03	3.75E-03	3.75E-03	3.75E-03
COW MILK								
ADULT	2.58E-03	2.58E-03	1.29E-02	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03
TEEN	4.75E-03	4.75E-03	2.38E-02	4.75E-03	4.75E-03	4.75E-03	4.75E-03	4.75E-03
CHILD	1.17E-02	1.17E-02	5.84E-02	1.17E-02	1.17E-02	1.17E-02	1.17E-02	1.17E-02
INFANT	2.44E-02	2.44E-02	1.14E-01	2.44E-02	2.44E-02	2.44E-02	2.44E-02	2.44E-02
GOATMILK								
ADULT	2.58E-03	2.58E-03	1.29E-02	2.58E-03	2.58E-03	2.58E-03	2.58E-03	2.58E-03
TEEN	4.75E-03	4.75E-03	2.38E-02	4.75E-03	4.75E-03	4.75E-03	4.75E-03	4.75E-03
CHILD	1.17E-02	1.17E-02	5.84E-02	1.17E-02	1.17E-02	1.17E-02	1.17E-02	1.17E-02
INFANT	2.44E-02	2.44E-02	1.14E-01	2.44E-02	2.44E-02	2.44E-02	2.44E-02	2.44E-02

TABLE 20. CARBON-14 DOSES TO MAXIMUM INDIVIDUAL (MREM), JULY-DECEMBER 2019

SPECIAL LOCATION NO. 4A Nearest Cow
AT 3.50 MILES NNW

ANNUAL BETA AIR DOSE = 0.00E+00 MILLRADS
ANNUAL GAMMA AIR DOSE = 0.00E+00 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GROUND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VEGET								
ADULT	7.55E-03	7.55E-03	3.78E-02	7.55E-03	7.55E-03	7.55E-03	7.55E-03	7.55E-03
TEEN	1.26E-02	1.26E-02	6.31E-02	1.26E-02	1.26E-02	1.26E-02	1.26E-02	1.26E-02
CHILD	3.07E-02	3.07E-02	1.54E-01	3.07E-02	3.07E-02	3.07E-02	3.07E-02	3.07E-02
MEAT								
ADULT	3.01E-03	3.01E-03	1.51E-02	3.01E-03	3.01E-03	3.01E-03	3.01E-03	3.01E-03
TEEN	2.55E-03	2.55E-03	1.27E-02	2.55E-03	2.55E-03	2.55E-03	2.55E-03	2.55E-03
CHILD	4.79E-03	4.79E-03	2.39E-02	4.79E-03	4.79E-03	4.79E-03	4.79E-03	4.79E-03
COW MILK								
ADULT	3.29E-03	3.29E-03	1.64E-02	3.29E-03	3.29E-03	3.29E-03	3.29E-03	3.29E-03
TEEN	6.06E-03	6.06E-03	3.03E-02	6.06E-03	6.06E-03	6.06E-03	6.06E-03	6.06E-03
CHILD	1.49E-02	1.49E-02	7.46E-02	1.49E-02	1.49E-02	1.49E-02	1.49E-02	1.49E-02
INFANT	3.12E-02	3.12E-02	1.46E-01	3.12E-02	3.12E-02	3.12E-02	3.12E-02	3.12E-02
GOATMILK								
ADULT	3.29E-03	3.29E-03	1.64E-02	3.29E-03	3.29E-03	3.29E-03	3.29E-03	3.29E-03
TEEN	6.06E-03	6.06E-03	3.03E-02	6.06E-03	6.06E-03	6.06E-03	6.06E-03	6.06E-03
CHILD	1.49E-02	1.49E-02	7.46E-02	1.49E-02	1.49E-02	1.49E-02	1.49E-02	1.49E-02
INFANT	3.12E-02	3.12E-02	1.46E-01	3.12E-02	3.12E-02	3.12E-02	3.12E-02	3.12E-02

TABLE 20. CARBON-14 DOSES TO MAXIMUM INDIVIDUAL (MREM), JULY-DECEMBER 2019 (Continued)

SPECIAL LOCATION NO. 5A Nearest Garden
AT 1.90 MILES WNW

ANNUAL BETA AIR DOSE = 0.00E+00 MILLRADS
ANNUAL GAMMA AIR DOSE = 0.00E+00 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GROUND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VEGET								
ADULT	1.48E-02	1.48E-02	7.39E-02	1.48E-02	1.48E-02	1.48E-02	1.48E-02	1.48E-02
TEEN	2.47E-02	2.47E-02	1.24E-01	2.47E-02	2.47E-02	2.47E-02	2.47E-02	2.47E-02
CHILD	6.01E-02	6.01E-02	3.01E-01	6.01E-02	6.01E-02	6.01E-02	6.01E-02	6.01E-02
MEAT								
ADULT	5.90E-03	5.90E-03	2.95E-02	5.90E-03	5.90E-03	5.90E-03	5.90E-03	5.90E-03
TEEN	4.98E-03	4.98E-03	2.49E-02	4.98E-03	4.98E-03	4.98E-03	4.98E-03	4.98E-03
CHILD	9.36E-03	9.36E-03	4.68E-02	9.36E-03	9.36E-03	9.36E-03	9.36E-03	9.36E-03
COW MILK								
ADULT	6.43E-03	6.43E-03	3.22E-02	6.43E-03	6.43E-03	6.43E-03	6.43E-03	6.43E-03
TEEN	1.19E-02	1.19E-02	5.93E-02	1.19E-02	1.19E-02	1.19E-02	1.19E-02	1.19E-02
CHILD	2.92E-02	2.92E-02	1.46E-01	2.92E-02	2.92E-02	2.92E-02	2.92E-02	2.92E-02
INFANT	6.10E-02	6.10E-02	2.86E-01	6.10E-02	6.10E-02	6.10E-02	6.10E-02	6.10E-02
GOATMILK								
ADULT	6.43E-03	6.43E-03	3.22E-02	6.43E-03	6.43E-03	6.43E-03	6.43E-03	6.43E-03
TEEN	1.19E-02	1.19E-02	5.93E-02	1.19E-02	1.19E-02	1.19E-02	1.19E-02	1.19E-02
CHILD	2.92E-02	2.92E-02	1.46E-01	2.92E-02	2.92E-02	2.92E-02	2.92E-02	2.92E-02
INFANT	6.10E-02	6.10E-02	2.86E-01	6.10E-02	6.10E-02	6.10E-02	6.10E-02	6.10E-02

TABLE 21. CARBON-14 DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-DECEMBER 2019

SPECIAL LOCATION NO. 4A Nearest Cow
AT 3.50 MILES NNW

ANNUAL BETA AIR DOSE = 0.00E+00 MILLRADS
ANNUAL GAMMA AIR DOSE = 0.00E+00 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GROUND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VEGET								
ADULT	1.56E-02	1.56E-02	7.82E-02	1.56E-02	1.56E-02	1.56E-02	1.56E-02	1.56E-02
TEEN	2.61E-02	2.61E-02	1.31E-01	2.61E-02	2.61E-02	2.61E-02	2.61E-02	2.61E-02
CHILD	6.36E-02	6.36E-02	3.18E-01	6.36E-02	6.36E-02	6.36E-02	6.36E-02	6.36E-02
MEAT								
ADULT	6.24E-03	6.24E-03	3.12E-02	6.24E-03	6.24E-03	6.24E-03	6.24E-03	6.24E-03
TEEN	5.27E-03	5.27E-03	2.63E-02	5.27E-03	5.27E-03	5.27E-03	5.27E-03	5.27E-03
CHILD	9.91E-03	9.91E-03	4.95E-02	9.91E-03	9.91E-03	9.91E-03	9.91E-03	9.91E-03
COW MILK								
ADULT	6.81E-03	6.81E-03	3.40E-02	6.81E-03	6.81E-03	6.81E-03	6.81E-03	6.81E-03
TEEN	1.26E-02	1.26E-02	6.28E-02	1.26E-02	1.26E-02	1.26E-02	1.26E-02	1.26E-02
CHILD	3.09E-02	3.09E-02	1.54E-01	3.09E-02	3.09E-02	3.09E-02	3.09E-02	3.09E-02
INFANT	6.45E-02	6.45E-02	3.02E-01	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02
GOATMILK								
ADULT	6.81E-03	6.81E-03	3.40E-02	6.81E-03	6.81E-03	6.81E-03	6.81E-03	6.81E-03
TEEN	1.26E-02	1.26E-02	6.28E-02	1.26E-02	1.26E-02	1.26E-02	1.26E-02	1.26E-02
CHILD	3.09E-02	3.09E-02	1.54E-01	3.09E-02	3.09E-02	3.09E-02	3.09E-02	3.09E-02
INFANT	6.45E-02	6.45E-02	3.02E-01	6.45E-02	6.45E-02	6.45E-02	6.45E-02	6.45E-02

TABLE 21. CARBON-14 DOSES TO MAXIMUM INDIVIDUAL (MREM), JANUARY-DECEMBER 2019 (Continued)

SPECIAL LOCATION NO. 5A Nearest Garden
AT 1.90 MILES WNW

ANNUAL BETA AIR DOSE = 0.00E+00 MILLRADS
ANNUAL GAMMA AIR DOSE = 0.00E+00 MILLRADS

PATHWAY	T.BODY	GI-TRACT	BONE	LIVER	KIDNEY	THYROID	LUNG	SKIN
PLUME	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
GROUND	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
VEGET								
ADULT	3.13E-02	3.13E-02	1.56E-01	3.13E-02	3.13E-02	3.13E-02	3.13E-02	3.13E-02
TEEN	5.23E-02	5.23E-02	2.61E-01	5.23E-02	5.23E-02	5.23E-02	5.23E-02	5.23E-02
CHILD	1.27E-01	1.27E-01	6.36E-01	1.27E-01	1.27E-01	1.27E-01	1.27E-01	1.27E-01
MEAT								
ADULT	1.25E-02	1.25E-02	6.24E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02	1.25E-02
TEEN	1.05E-02	1.05E-02	5.27E-02	1.05E-02	1.05E-02	1.05E-02	1.05E-02	1.05E-02
CHILD	1.98E-02	1.98E-02	9.91E-02	1.98E-02	1.98E-02	1.98E-02	1.98E-02	1.98E-02
COW MILK								
ADULT	1.36E-02	1.36E-02	6.81E-02	1.36E-02	1.36E-02	1.36E-02	1.36E-02	1.36E-02
TEEN	2.51E-02	2.51E-02	1.26E-01	2.51E-02	2.51E-02	2.51E-02	2.51E-02	2.51E-02
CHILD	6.17E-02	6.17E-02	3.09E-01	6.17E-02	6.17E-02	6.17E-02	6.17E-02	6.17E-02
INFANT	1.29E-01	1.29E-01	6.05E-01	1.29E-01	1.29E-01	1.29E-01	1.29E-01	1.29E-01
GOATMILK								
ADULT	1.36E-02	1.36E-02	6.81E-02	1.36E-02	1.36E-02	1.36E-02	1.36E-02	1.36E-02
TEEN	2.51E-02	2.51E-02	1.26E-01	2.51E-02	2.51E-02	2.51E-02	2.51E-02	2.51E-02
CHILD	6.17E-02	6.17E-02	3.09E-01	6.17E-02	6.17E-02	6.17E-02	6.17E-02	6.17E-02
INFANT	1.29E-01	1.29E-01	6.05E-01	1.29E-01	1.29E-01	1.29E-01	1.29E-01	1.29E-01

DOSE CALCULATION MODELS

To evaluate the radiological consequences of the routine release of liquid and gaseous effluents from the Cooper Nuclear Station, the latest versions of two computer codes were used: LADTAP II for liquid doses and GASPAR for gaseous doses included as part of NRCDose 2.3.20 (ORNL 2015). Both of these computer codes implement the dose calculational methodologies of U.S. NRC Regulatory Guide 1.109, Revision 1.

Source terms for each quarter are combined with station-specific demographic data and either hydrological dilution factors, for liquid dose calculations, or atmospheric diffusion estimates, for gaseous dose calculations.

For liquid dose calculations, the hydrological dilution factors used for input to LADTAP II, as well as other input parameters, are listed in Table 22. Other inputs not specifically listed in this table are taken from Regulatory Guide 1.109, Revision 1. Semiannual doses are obtained by summing the contributions from the appropriate quarters.

For gaseous dose calculations, atmospheric diffusion estimates are obtained from the reduction and processing of onsite meteorological data, as described in Appendix B. Source terms for the semiannual period are obtained by summing source terms for the appropriate quarters. Additional input to GASPAR includes the following station-supplied data:

- 0 to 50 mile population distribution
- 0 to 50 mile meat, milk, and vegetable distributions
- Absolute humidity at Cooper Nuclear Station (14.61 g/m^3)
- The fraction of the year that the vegetables are grown (0.5)
- The fraction of the daily feed intake derived from pasture for milk and meat animals (0.5)

Other values used for input to GASPAR are default values from Regulatory Guide 1.109, Rev. 1.

TABLE 22. Values of Parameters Used to Make Dose Estimates Resulting From Liquid Discharges at Cooper Nuclear Station January-December 2019

Parameter		Values Assigned	
		Individual	Population
Cooling flow rate (cfs) *	Q1	1248	1248
(Average daily value)	Q2	1246	1246
	Q3	1454	1454
	Q4	1323	1323
Dilution factor*	Q1	1	2.23
	Q2	1	3.45
	Q3	1	2.53
	Q4	1	1.96
Holding time:			
Fish		24 hr ***	168 hr ***
Drinking water		12 hr ***	22.4 hr **
Shoreline exposure		0 hr ***	22.4 hr **
Swimming		0 hr ***	22.4 hr **
Boating		0 hr ***	22.4 hr **

* Q1, Q2, Q3, and Q4 represent first, second, third and fourth quarter station data for 2019, respectively.

** Based on an average Missouri River water flow of 5.5 ft/sec, 84 miles down the river.

*** Values from Regulatory Guide 1.109, Revision 1.

NR- No release

REFERENCES

Electric Power Research Institute, Technical Report 1021106, "Estimation of Carbon-14 in Nuclear Power Plant Gaseous Effluents", December 2010.

Oak Ridge National Laboratory, NRCDose 2.3.20, "Code System for Evaluating Routine Radioactive Effluents from Nuclear Power Plants with Windows Interface", February 2015.

U.S. Nuclear Regulatory Commission, Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants", Revision 1, 1974.

U.S. Nuclear Regulatory Commission, Regulatory Guide 1.23 (Safety Guide 23), "Onsite Meteorological Programs", Revision 0, 1972.

U.S. Nuclear Regulatory Commission, Regulatory Guide 1.111, "Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors", Revision 1, 1977.

U.S. Nuclear Regulatory Commission, NUREG/CR-2919, "XOQDOQ: Computer Program for the Meteorological Evaluation of Routine Effluent Releases at Nuclear Power Stations", 1982.

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U.S. Nuclear Regulatory Commission, NUREG-0597, "User's Guide to GASPAR Code", December 1980.

U.S. Nuclear Regulatory Commission, NUREG/CR-1276, "User's Manual for LADTAP II: A Computer Code for Calculating Radiation Exposure to Man From Routine Release of Nuclear Reactor Liquid Effluents", 1980.

U.S. Nuclear Regulatory Commission, Regulatory Guide 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR 50, Appendix I", Revision 1, 1977.

APPENDIX D
ANNUAL RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM (ARGPP) REPORT

NEBRASKA PUBLIC POWER DISTRICT

COOPER NUCLEAR STATION

Radiological Groundwater Protection Program

2019 Annual Report

January 1, 2019 to December 31, 2019

Prepared by
Teledyne Brown Engineering
2508 Quality Lane
Knoxville, TN 37931-3133

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Attachments

Attachment 1: Location Designation of the Annual Radiological Groundwater Protection Program Report (ARGPPR)

Tables

Table A-1: Radiological Groundwater Protection Program - Sampling Locations, Nebraska Public Power District, Cooper Nuclear Station, 2019

Map

Map A-1: Routine Well Water Sample Locations for the Radiological Groundwater Protection Program, Nebraska Public Power District, Cooper Nuclear Station, 2019

Attachment 2: Data Tables of the Annual Radiological Groundwater Protection Program Report (ARGPPR)

Table B-1: Exposure Pathway – Water - Ground, 2019

SECTION I. SUMMARY

I. SUMMARY

In 2008, the Cooper Nuclear Station (CNS) of the Nebraska Public Power District (NPPD) instituted a comprehensive program to evaluate the impact of station operations on groundwater in the vicinity of CNS. This report covers groundwater samples, collected outside of the Licensee required Off-Site Dose Assessment Manual (ODAM) requirements, both on and off station property in 2019. During that time period, analyses were performed on 54 samples from 21 locations.

In assessing all the data gathered for this report, it was concluded that the operation of CNS had no adverse radiological impact on the environment, and there are no known active releases into the groundwater or surface water at Nebraska Public Power District.

Tritium was not detected in any of the groundwater samples at concentrations greater than the United States Environmental Protection Agency (USEPA) drinking water standard (and the Nuclear Regulatory Commission [NRC] reporting limit) of 20,000 pCi/L. The tritium concentrations ranged from 343 ± 203 pCi/L to 2,220 ± 308 pCi/L.

Gamma-emitting radionuclides associated with licensed plant operations were not detected at concentrations greater than their respective Lower Limits of Detection (LLDs) as specified in NUREG-1302 in any of the groundwater samples. In the case of tritium, CNS specified that the independent laboratory achieve a lower limit of detection 10 times lower than that required by the United States Environmental Protection Agency (USEPA) regulation.

SECTION II. CHARACTERISTICS OF TRITIUM (H-3)

II. CHARACTERISTICS OF TRITIUM (H-3)

Tritium (chemical symbol H-3) is a radioactive isotope of hydrogen. The most common form of tritium is tritium oxide, which is also called "tritiated water." The chemical properties of tritium are essentially those of ordinary hydrogen.

Tritiated water functions the same as ordinary water in both the environment and the body. Tritium can be taken into the body by drinking water, breathing air, eating food, or absorption through skin. Once tritium enters the body, it disperses quickly and is uniformly distributed throughout the body. Tritium is excreted primarily through urine with a clearance rate characterized by an effective biological half-life of about 14 days. Within one month or so after ingestion, essentially all tritium is cleared. Organically bound tritium (tritium that is incorporated in organic compounds) can remain in the body for a longer period.

Tritium is produced naturally in the upper atmosphere when cosmic rays strike air molecules. Tritium is also produced during nuclear weapons explosions, as a by-product in reactors producing electricity, and in special production reactors, where the isotopes lithium-6 and/or boron-10 are activated to produce tritium. Like normal water, tritiated water is colorless and odorless. Tritiated water behaves chemically and physically like non-tritiated water in the subsurface, and therefore tritiated water will travel at the same velocity as the average groundwater velocity.

Tritium has a half-life of approximately 12.3 years. It decays spontaneously to helium-3 (3He). This radioactive decay releases a beta particle (low-energy electron). The radioactive decay of tritium is the source of the health risk from exposure to tritium. Tritium is one of the least dangerous radionuclides because it emits very weak beta radiation and leaves the body relatively quickly. Since tritium is almost always found as water, it goes directly into soft tissues and organs. The associated dose to these tissues is generally uniform and is dependent on the water content of the specific tissue.

SECTION III. INTRODUCTION

III. INTRODUCTION

Cooper Nuclear Station is located in Nemaha County in the southeast corner of Nebraska on the Missouri River. A portion of the site extends into Missouri. The reactor is an 830-megawatt (net electrical) boiling water reactor. Initial criticality was attained on February 21, 1974.

This report covers those analyses performed by Teledyne Brown Engineering (TBE) on samples collected in 2019.

III. INTRODUCTION (cont)

A. Objectives of the Radiological Groundwater Protection Program (RGPP)

The long-term objectives of the RGPP are as follows:

1. Identify suitable locations to monitor and evaluate potential impacts from station operations before significant radiological impact to the environment and potential drinking water sources.

2. Understand the local hydrogeologic regime in the vicinity of the station and maintain up-to-date knowledge of flow patterns on the surface and shallow subsurface.

3. Perform routine water sampling and radiological analysis of water from selected locations.

4. Report new leaks, spills, or other detections with potential radiological significance to stakeholders in a timely manner.

5. Regularly assess analytical results to identify adverse trends.

6. Take necessary corrective actions to protect groundwater resources.

B. Implementation of the Objectives

The objectives identified have been implemented at CNS as discussed below:

1. Cooper Nuclear Station will continue to perform routine sampling and radiological analysis of water from selected locations.

2. Cooper Nuclear Station has implemented procedures to identify and report new leaks, spills, or other detections with potential radiological significance in a timely manner.

3. Cooper Nuclear Station staff assesses analytical results on an ongoing basis to identify adverse trends.

C. Program Description

1. Sample Collection

Sample locations can be found in Attachment 1, Table A-1 and Map A-1.

Groundwater

Samples of water are collected, managed, transported and analyzed in

accordance with approved procedures following regulatory methods. Sample locations, sample collection frequencies and analytical frequencies are controlled in accordance with approved station procedures. Contractor and/or station personnel are trained in the collection, preservation management, and shipment of samples, as well as in documentation of sampling events. Analytical laboratories are subject to internal quality assurance programs, inter-laboratory cross-check programs, as well as nuclear industry audits. Station personnel review and evaluate all analytical data deliverables after initial review by the contractor.

Analytical data results are reviewed by station personnel for adverse trends or changes to hydrogeologic conditions.

SECTION IV. PROGRAM DESCRIPTION

IV. Program Description

A. Sample Analysis

This section describes the general analytical methodologies used by TBE to analyze the environmental samples for radioactivity for the CNS RGPP in 2019.

In order to achieve the stated objectives, the current program analyzes each sample for tritium. If a sample indicates tritium above TBE's lower limit of detection (LLD), then the sample is analyzed for gamma emitters (Be-7, K-40, Mn-54, Co-58, Fe-59, Co-60, Zn-65, Zr-95, Ru-103, Ru-106, I-131, Cs-134, Cs-137, Ba-140, Ce-141, Ce-144, Ra-226 and Th-228). If the sample indicates gamma emitters (other than those that are naturally occurring) above TBE's LLD, then the sample is analyzed for Hard to Detects (HTDs – Gross Alpha, Fe-55, Ni-63, Sr-89, Sr-90).

Note: Statistically positive results include their respective uncertainties. Results reported below TBE's LLD for a given radio nuclide are preceded with "<" (= "Less Than").

B. Data Interpretation

The radiological data collected prior to CNS becoming operational were used as a baseline with which these operational data were compared. For the purpose of this report, CNS was considered operational at initial criticality. Several factors were important in the interpretation of the data:

1. Lower Limit of Detection and Minimum Detectable Concentration

The lower limit of detection (LLD) is specified by federal regulation as a minimum sensitivity value that must be achieved routinely by the analytical parameter.

2. Laboratory Measurements Uncertainty

The estimated uncertainty in measurement of tritium in environmental samples is frequently on the order of 50% of the measurement value.

Statistically, the exact value of a measurement is expressed as a range with a stated level of confidence. Analytical uncertainties are reported at the 95% confidence level in this report for reporting consistency with the REMP. The uncertainty comes from calibration standards, sample volume or weight measurements, sampling uncertainty and other factors. CNS reports the uncertainty of a measurement created by statistical process (counting error). Each result has two values calculated. CNS reports the result with plus or minus (±) the estimated sample standard deviation.

SECTION V. RESULTS AND DISCUSSION

IV. Results and Discussion

A. Groundwater Results

Tritium

Samples from 19 locations were analyzed for tritium activity (Table B-1, Attachment 2). Tritium was detected at four locations. Tritium values ranged from 343 to 2,220 pCi/L. All values were below the United States Environmental Protection Agency (USEPA) drinking water standard (and the Nuclear Regulatory Commission [NRC] reporting limit) of 20,000 pCi/liter.

Gamma Emitters

No gamma emitting nuclides were detected (Table B-1, Attachment 2).

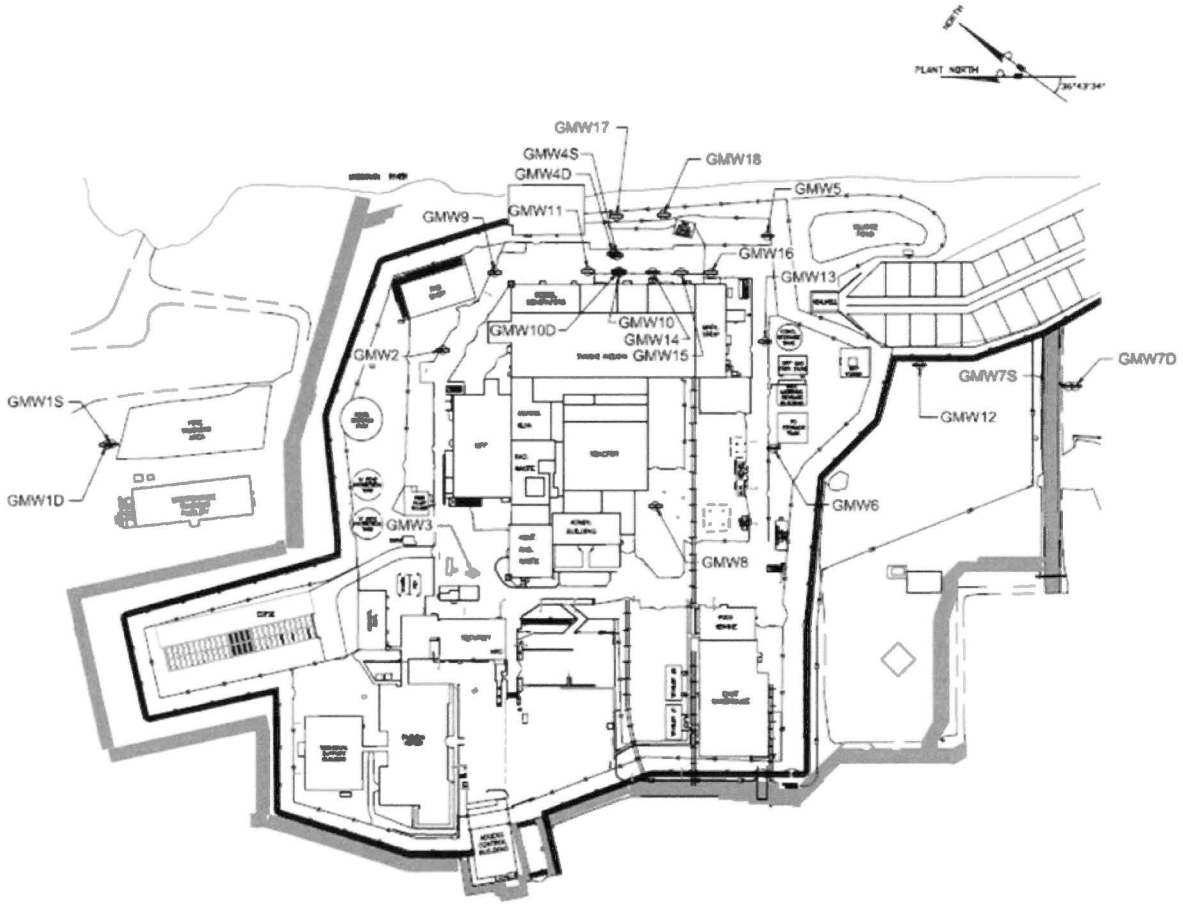
ATTACHMENT 1

LOCATION DESIGNATION OF THE ANNUAL RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM REPORT (ARGPPR)

TABLE A-1: Radiological Groundwater Protection Program - Sampling Locations, Nebraska Public Power District, Cooper Nuclear Station, 2019

Site	Type
Ground Monitoring Well-1D	Ground Water
Ground Monitoring Well-1S	Ground Water
Ground Monitoring Well-2	Ground Water
Ground Monitoring Well-3	Ground Water
Ground Monitoring Well-4D	Ground Water
Ground Monitoring Well-4S	Ground Water
Ground Monitoring Well-5	Ground Water
Ground Monitoring Well-6	Ground Water
Ground Monitoring Well-7D	Ground Water
Ground Monitoring Well-7S	Ground Water
Ground Monitoring Well-8	Ground Water
Ground Monitoring Well-10	Ground Water
Ground Monitoring Well-10D	Ground Water
Ground Monitoring Well-11	Ground Water
Ground Monitoring Well-12	Ground Water
Ground Monitoring Well-13	Ground Water
Ground Monitoring Well-14	Ground Water
Ground Monitoring Well-15	Ground Water
Ground Monitoring Well-16	Ground Water
Ground Monitoring Well-17	Ground Water
Ground Monitoring Well-18	Ground Water

MAP A-1



Routine Well Water Sample Locations for the Radiological Groundwater Protection Program, Nebraska Public Power District, Cooper Nuclear Station, 2019

ATTACHMENT 2

DATA TABLES OF THE ANNUAL RADIOLOGICAL GROUNDWATER PROTECTION PROGRAM REPORT (ARGPPR)

B-1

COOPER NUCLEAR STATION
WATER - GROUND (PCI/LITER)

STATION NUMBER 1D

DATE COLLECTED	6/27/2019	9/24/2019
GAMMA SPECTRUM ANALYSIS:	(a)	(a)
BE-7		
K-40		
MN-54		
CO-58		
FE-59		
CO-60		
ZN-65		
ZR-95		
RU-103		
RU-106		
I-131		
CS-134		
CS-137		
BA-140		
LA-140		
CE-141		
CE-144		
RA-226		
TH-228		
H-3	< 3.E+02	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

B-1

COOPER NUCLEAR STATION
WATER - GROUND (PCI/LITER)

STATION NUMBER 1S

DATE COLLECTED	6/27/2019	9/24/2019
GAMMA SPECTRUM ANALYSIS:	(a)	(a)
BE-7		
K-40		
MN-54		
CO-58		
FE-59		
CO-60		
ZN-65		
ZR-95		
RU-103		
RU-106		
I-131		
CS-134		
CS-137		
BA-140		
LA-140		
CE-141		
CE-144		
RA-226		
TH-228		
H-3	< 3.E+02	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

B-1

COOPER NUCLEAR STATION
WATER - GROUND (PCI/LITER)

STATION NUMBER 2

DATE COLLECTED	3/27/2019	6/27/2019	11/25/2019
GAMMA SPECTRUM ANALYSIS:	(a)	(a)	(a)
BE-7			
K-40			
MN-54			
CO-58			
FE-59			
CO-60			
ZN-65			
ZR-95			
RU-103			
RU-106			
I-131			
CS-134			
CS-137			
BA-140			
LA-140			
CE-141			
CE-144			
RA-226			
TH-228			
H-3	< 3.E+02	< 3.E+02	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

B-1

COOPER NUCLEAR STATION
WATER - GROUND (PCI/LITER)

STATION NUMBER 3

DATE COLLECTED	6/27/2019	9/24/2019
GAMMA SPECTRUM ANALYSIS:	(a)	(a)
BE-7		
K-40		
MN-54		
CO-58		
FE-59		
CO-60		
ZN-65		
ZR-95		
RU-103		
RU-106		
I-131		
CS-134		
CS-137		
BA-140		
LA-140		
CE-141		
CE-144		
RA-226		
TH-228		
H-3	< 3.E+02	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

B-1

COOPER NUCLEAR STATION
WATER - GROUND (PCI/LITER)

STATION NUMBER 4D

DATE COLLECTED	3/27/2019	6/27/2019	9/24/2019	11/25/2019
GAMMA SPECTRUM ANALYSIS:	(a)	(a)	(a)	(a)
BE-7				
K-40				
MN-54				
CO-58				
FE-59				
CO-60				
ZN-65				
ZR-95				
RU-103				
RU-106				
I-131				
CS-134				
CS-137				
BA-140				
LA-140				
CE-141				
CE-144				
RA-226				
TH-228				
H-3	< 3.E+02	< 3.E+02	< 3.E+02	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

B-1
COOPER NUCLEAR STATION
WATER - GROUND (PCI/LITER)

STATION NUMBER 4S

DATE COLLECTED	3/27/2019	6/27/2019	9/24/2019	11/25/2019
GAMMA SPECTRUM ANALYSIS:	(a)	(a)	(a)	(a)
BE-7				
K-40				
MN-54				
CO-58				
FE-59				
CO-60				
ZN-65				
ZR-95				
RU-103				
RU-106				
I-131				
CS-134				
CS-137				
BA-140				
LA-140				
CE-141				
CE-144				
RA-226				
TH-228				
H-3	< 3.E+02	< 3.E+02	< 3.E+02	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

B-1

COOPER NUCLEAR STATION
WATER - GROUND (PCI/LITER)

STATION NUMBER 5

DATE COLLECTED	6/27/2019	9/24/2019
GAMMA SPECTRUM ANALYSIS:	(a)	(a)
BE-7		
K-40		
MN-54		
CO-58		
FE-59		
CO-60		
ZN-65		
ZR-95		
RU-103		
RU-106		
I-131		
CS-134		
CS-137		
BA-140		
LA-140		
CE-141		
CE-144		
RA-226		
TH-228		
H-3	< 3.E+02	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

B-1

COOPER NUCLEAR STATION
WATER - GROUND (PCI/LITER)

STATION NUMBER 6

DATE COLLECTED	3/26/2019	6/27/2019	9/24/2019	11/25/2019
GAMMA SPECTRUM ANALYSIS:	(a)	(a)		(a)
BE-7			< 2.E+01	
K-40			< 1.E+01	
MN-54			< 2.E+00	
CO-58			< 2.E+00	
FE-59			< 6.E+00	
CO-60			< 2.E+00	
ZN-65			< 3.E+00	
ZR-95			< 4.E+00	
RU-103			< 3.E+00	
RU-106			< 1.E+01	
I-131			< 2.E+02	
CS-134			< 1.E+00	
CS-137			< 1.E+00	
BA-140			< 1.E+02	
LA-140			< 4.E+01	
CE-141			< 6.E+00	
CE-144			< 1.E+01	
RA-226			< 3.E+01	
TH-228			< 2.E+00	
H-3	< 3.E+02	< 3.E+02	3.43E+02 ± 2.03E+02	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

B-1

COOPER NUCLEAR STATION
WATER - GROUND (PCI/LITER)

STATION NUMBER 7D

DATE COLLECTED	6/27/2019	9/24/2019
GAMMA SPECTRUM ANALYSIS:	(a)	(a)
BE-7		
K-40		
MN-54		
CO-58		
FE-59		
CO-60		
ZN-65		
ZR-95		
RU-103		
RU-106		
I-131		
CS-134		
CS-137		
BA-140		
LA-140		
CE-141		
CE-144		
RA-226		
TH-228		
H-3	< 3.E+02	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

B-1

COOPER NUCLEAR STATION
WATER - GROUND (PCI/LITER)

STATION NUMBER 7S

DATE COLLECTED	6/27/2019	9/24/2019
GAMMA SPECTRUM ANALYSIS:	(a)	(a)
BE-7		
K-40		
MN-54		
CO-58		
FE-59		
CO-60		
ZN-65		
ZR-95		
RU-103		
RU-106		
I-131		
CS-134		
CS-137		
BA-140		
LA-140		
CE-141		
CE-144		
RA-226		
TH-228		
H-3	< 3.E+02	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

B-1

COOPER NUCLEAR STATION
WATER - GROUND (PCI/LITER)

STATION NUMBER 8

DATE COLLECTED	3/26/2019	11/25/2019
GAMMA SPECTRUM ANALYSIS:	(a)	(a)
BE-7		
K-40		
MN-54		
CO-58		
FE-59		
CO-60		
ZN-65		
ZR-95		
RU-103		
RU-106		
I-131		
CS-134		
CS-137		
BA-140		
LA-140		
CE-141		
CE-144		
RA-226		
TH-228		
H-3	< 3.E+02	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

B-1

COOPER NUCLEAR STATION
WATER - GROUND (PCI/LITER)

STATION NUMBER 9

DATE COLLECTED	6/27/2019	11/25/2019
GAMMA SPECTRUM ANALYSIS:	(a)	(a)
BE-7		
K-40		
MN-54		
CO-58		
FE-59		
CO-60		
ZN-65		
ZR-95		
RU-103		
RU-106		
I-131		
CS-134		
CS-137		
BA-140		
LA-140		
CE-141		
CE-144		
RA-226		
TH-228		
H-3	< 3.E+02	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

B-1

COOPER NUCLEAR STATION

WATER - GROUND (PCI/LITER)

STATION NUMBER 10D

DATE COLLECTED	3/27/2019	6/27/2019	9/24/2019	11/25/2019
GAMMA SPECTRUM ANALYSIS:		(a)	(a)	(a)
BE-7	< 2.E+01			
K-40	< 2.E+01			
MN-54	< 2.E+00			
CO-58	< 2.E+00			
FE-59	< 5.E+00			
CO-60	< 2.E+00			
ZN-65	< 4.E+00			
ZR-95	< 4.E+00			
RU-103	< 3.E+00			
RU-106	< 2.E+01			
I-131	< 3.E+01			
CS-134	< 2.E+00			
CS-137	< 2.E+00			
BA-140	< 4.E+01			
LA-140	< 1.E+01			
CE-141	< 5.E+00			
CE-144	< 1.E+01			
RA-226	< 4.E+01			
TH-228	< 3.E+00			
H-3	4.65E+02 ± 2.36E+02	< 3.E+02	< 3.E+02	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

B-1

COOPER NUCLEAR STATION

WATER - GROUND (PCI/LITER)

STATION NUMBER 11

DATE COLLECTED	3/27/2019	6/27/2019	9/24/2019	11/25/2019
GAMMA SPECTRUM ANALYSIS:	(a)	(a)		(a)
BE-7			< 3.E+01	
K-40			< 2.E+01	
MN-54			< 2.E+00	
CO-58			< 3.E+00	
FE-59			< 8.E+00	
CO-60			< 2.E+00	
ZN-65			< 4.E+00	
ZR-95			< 5.E+00	
RU-103			< 5.E+00	
RU-106			< 2.E+01	
I-131			< 2.E+02	
CS-134			< 2.E+00	
CS-137			< 2.E+00	
BA-140			< 1.E+02	
LA-140			< 4.E+01	
CE-141			< 9.E+00	
CE-144			< 1.E+01	
RA-226			< 4.E+01	
TH-228			< 3.E+00	
H-3	< 3.E+02	< 3.E+02	3.78E+02 ± 2.06E+02	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

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COOPER NUCLEAR STATION

WATER - GROUND (PCI/LITER)

STATION NUMBER 13

DATE COLLECTED	3/26/2019	6/27/2019	9/24/2019	11/25/2019
GAMMA SPECTRUM ANALYSIS:	(a)	(a)		
BE-7			< 3.E+01	< 6.E+01
K-40			< 2.E+01	< 1.E+01
MN-54			< 2.E+00	< 2.E+00
CO-58			< 3.E+00	< 5.E+00
FE-59			< 7.E+00	< 2.E+01
CO-60			< 2.E+00	< 2.E+00
ZN-65			< 4.E+00	< 4.E+00
ZR-95			< 5.E+00	< 1.E+01
RU-103			< 4.E+00	< 1.E+01
RU-106			< 2.E+01	< 2.E+01
I-131			< 2.E+02	< 9.E+04
CS-134			< 2.E+00	< 2.E+00
CS-137			< 2.E+00	< 2.E+00
BA-140			< 1.E+02	< 5.E+03
LA-140			< 4.E+01	< 2.E+03
CE-141			< 9.E+00	< 4.E+01
CE-144			< 1.E+01	< 2.E+01
RA-226			< 4.E+01	< 4.E+01
TH-228			< 3.E+00	< 4.E+00
H-3	< 3.E+02	< 3.E+02	7.90E+02 ± 2.35E+02	2.22E+03 ± 3.08E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

B-1

COOPER NUCLEAR STATION
WATER - GROUND (PCI/LITER)

STATION NUMBER 14

DATE COLLECTED	3/26/2019	11/25/2019
GAMMA SPECTRUM ANALYSIS:	(a)	(a)
BE-7		
K-40		
MN-54		
CO-58		
FE-59		
CO-60		
ZN-65		
ZR-95		
RU-103		
RU-106		
I-131		
CS-134		
CS-137		
BA-140		
LA-140		
CE-141		
CE-144		
RA-226		
TH-228		
H-3	< 3.E+02	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

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COOPER NUCLEAR STATION
WATER - GROUND (PCI/LITER)

STATION NUMBER 15

DATE COLLECTED	3/26/2019
GAMMA SPECTRUM ANALYSIS:	(a)
BE-7	
K-40	
MN-54	
CO-58	
FE-59	
CO-60	
ZN-65	
ZR-95	
RU-103	
RU-106	
I-131	
CS-134	
CS-137	
BA-140	
LA-140	
CE-141	
CE-144	
RA-226	
TH-228	
H-3	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

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COOPER NUCLEAR STATION
WATER - GROUND (PCI/LITER)

STATION NUMBER 16

DATE COLLECTED	3/26/2019	11/25/2019
GAMMA SPECTRUM ANALYSIS:	(a)	(a)
BE-7		
K-40		
MN-54		
CO-58		
FE-59		
CO-60		
ZN-65		
ZR-95		
RU-103		
RU-106		
I-131		
CS-134		
CS-137		
BA-140		
LA-140		
CE-141		
CE-144		
RA-226		
TH-228		
H-3	< 3.E+02	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

B-1

COOPER NUCLEAR STATION
WATER - GROUND (PCI/LITER)

STATION NUMBER 17

DATE COLLECTED	3/27/2019	11/25/2019
GAMMA SPECTRUM ANALYSIS:	(a)	(a)
BE-7		
K-40		
MN-54		
CO-58		
FE-59		
CO-60		
ZN-65		
ZR-95		
RU-103		
RU-106		
I-131		
CS-134		
CS-137		
BA-140		
LA-140		
CE-141		
CE-144		
RA-226		
TH-228		
H-3	< 3.E+02	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.

B-1

COOPER NUCLEAR STATION
WATER - GROUND (PCI/LITER)

STATION NUMBER 18

DATE COLLECTED	3/27/2019	11/25/2019
GAMMA SPECTRUM ANALYSIS:	(a)	(a)
BE-7		
K-40		
MN-54		
CO-58		
FE-59		
CO-60		
ZN-65		
ZR-95		
RU-103		
RU-106		
I-131		
CS-134		
CS-137		
BA-140		
LA-140		
CE-141		
CE-144		
RA-226		
TH-228		
H-3	< 3.E+02	< 3.E+02

(a) Gamma analysis not performed. Refer to section IV.A for additional information.