September 20, 2024

VIA EMAIL

Tommy Alexander
California Environmental Quality Act Project Manager
California Public Utilities Commission Energy Division
505 Van Ness Avenue
San Francisco, California 94201

RE: Supplemental Response to the California Public Utilities Commission's (CPUC's) Data Request 1 for the LS Power Grid California, LLC (LSPGC) Manning 500/230 kV Substation Project (Application 24-06-017)

Dear Mr. Alexander,

Only July 24, 2024, the CPUC's Energy Division requested additional information to inform the environmental review of LSPGC's Manning 500/230 kV Substation Project (Application 24-06-017). On August 7, 2024, LSPGC provided a response that included initial information to address Data Request 1. This supplemental response addresses the remaining information request (e.g., the Health Risk Assessment) and concludes our response to Data Request 1.

Should you have any questions or need any additional information, please do not hesitate to contact me at (925) 808-0291.

Sincerely,

Dustin Joseph

Dustin Joseph
Director of Environmental Permitting

Enclosures:

Manning 500/230 kV Substation Project – County of Fresno, CA – Health Risk Assessment Screening Letter

cc: Clayton Eversen (LSPGC)
James Schuchard (LSPGC)
Margaret Bratcher (LSPGC)
Doug Mulvey (LSPGC)
David Wilson (LSPGC)
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September 17, 2024

LS Power Grid California
Dustin Joseph
16150 Main Circle Drive, Suite 310
Chesterfield, MO 63017

RE: Manning 500/230 kV Substation Project - County of Fresno, CA - Health Risk Screening Letter

The purpose of this Air Quality Heath Risk screening letter is to identify potential health risks from toxic air contaminants (TACs) which would be expected during construction of the Manning 500/230 Kilovolt (kV) Substation Project (Project). The Project seeks to construct an approximately 11-acre 500/230 kV substation (Manning Substation) with an additional disturbance of up to 29 acres for grading disturbance, installation of transmission lines roads and ancillary facilities. Equipment will be stored along the transmission line alignment proposed in this Project. TACs during operations would not be expected since, after the substation is operational, minimal site visits to the substation would be required.

Compliance with San Joaquin Valley Air Pollution Control District (SJVAPCD) health risk thresholds were evaluated per Guidance for Assessing and Mitigating Air Quality Impacts. These are broken out into Carcinogens and Non-Carcinogens (Acute and Chronic). A project cannot increase the cancer risk to greater than 20 for the Maximally Exposed Individual (MEI). For both Acute and Chronic Non-Carcinogens, a project cannot increase the Hazard Index to greater than 1 for the MEI (SJVAPCD, 2015).

Based on the construction area for the Manning Substation, a residential receptor is located approximately 0.5 miles away from the proposed primary substation construction activities. Figure 1 on the following page shows the relative location and distance of the nearest residential receptor from the substation construction area.

Given the linear nature of transmission line work, sensitive receptors near the Project would not experience a noticeable increase in emissions due to construction of the transmission lines, unlike fixed construction areas which have longer exposure times and present a worst-case scenario for project-related human health impacts. Inhalation cancer risks are typically associated with stationary sources emitting over long periods, as noted by the California Office

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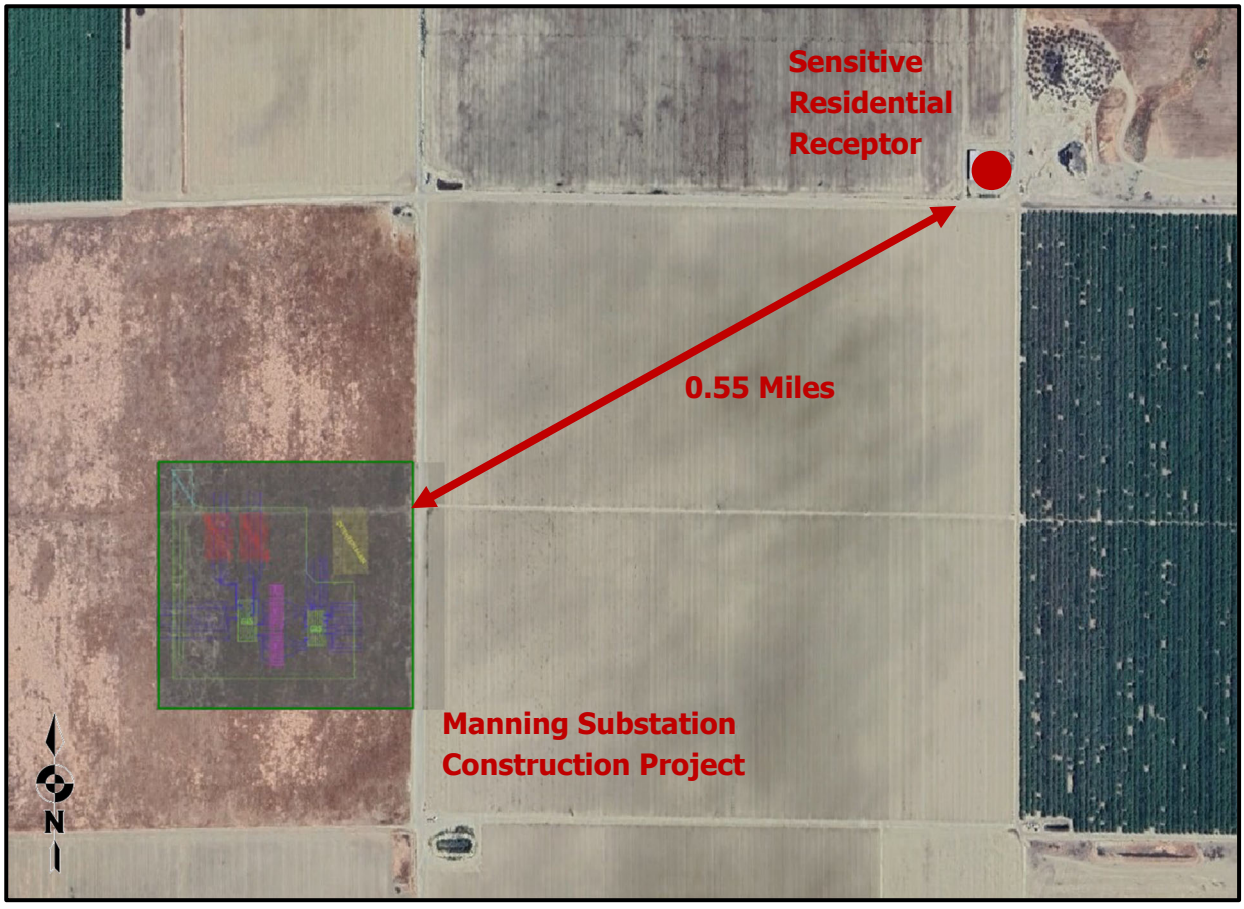
of Environmental Health Hazard Assessment (OEHHA), making short-term air quality impacts from transmission line work less concerning in comparison to those from fixed construction sites (OEHHA, 2001). Given this, health risks from the transmission lines would be less than significant and are not analyzed further herein. In addition, the project would have a number of staging areas which will be utilized to store construction materials and equipment. These areas would not generate high levels of DPM since equipment operated onsite would not be under any significant load like on an active construction area and would not generate significant levels of TACs to create health risk impacts. Given this equipment used or transported to the staging areas would have a less than significant health risk impact.

Figure 1: Project Layout and Distance to the nearest Sensitive Receptor



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Project Construction Emissions

The primary health risks from TACs related to construction at the Manning Substation would be from diesel particulate matter (DPM) emitted from construction equipment emitted over roughly 479 active construction days or 518-calendar days. DPM emissions from this work were provided in Table 17 of Attachment 5.3-A to the PEA (denoted as L-02, L-03, L-04 and L-39). Also, it should be noted that transmission line work will extend from the southeast corner of the Project and traverse east from the project site. These activities will involve quick transitory movements with equipment operating in a linear fashion over short durations relative to any specific location including any residential receptors along the alignment. Construction activities at the Manning Substation, along with the equipment list as analyzed with the Air Quality analysis, are shown in Table 1 below.

Table 1: Manning Substation Construction Activities.

Equipment Identification	Estimated Start	Estimated Completion	Quantity	HP
Site Development (INDEX L-02 – 76 Construction Days)	5/1/2026	8/1/2026		
Truck - Water 4 K			2	300
Loader - 4-5 Yd			2	230
Truck - Dump 10-12 Yd			2	415
Motor Grader			2	250
Scraper			2	410
Vibratory Roller			1	157
Pickup - 1/2 Ton			4	395
Generator – 25 Kw			1	36
Forklift - 15,000 lb.			1	130
Pickup - 1 Ton			4	410
Semi Truck			1	500
844 Loader			1	417
Below Grade Construction (INDEX L-03 – 127 Construction Days)	6/1/2026	10/31/2026		
Truck - Water 4 K			2	300
Excavator			2	108
Forklift - 15 K Reach			1	130
Backhoe - 2X4			2	68
Pickup - 1/2 Ton			4	395
Pickup - 1 Ton			4	410

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Equipment Identification	Estimated Start	Estimated Completion	Quantity	HP
Excavator - Mini			1	70
Generator – 25 Kw			1	36
Truck - Concrete			4	425
Loader - 4-5 Yd			2	230
Pressure Digger - Lo-Drill (Tracked)			1	275
Truck - Dump 10-12 Yd			3	415
Trencher			2	75
Skid steer loader			2	74
Wire Trailer/ Tensioner			1	175
Wire Puller			1	175
Above Grade Construction (Phase 1) (INDEX L-04– 224 Construction Days)	11/1/2026	7/31/2027		
Wire Trailer/ Tensioner			1	175
Wire Puller			1	175
Pickup - 1/2 Ton			4	395
Pickup - 1 Ton			4	410
Welding Truck			2	395
Generator – 25 Kw			2	36
Crane - 35 Ton (Manlift)			2	250
Forklift - 10 K Reach			2	130
Forklift -15,000 lb.			1	130
Loader - 4-5 Yd			2	74
120' Manlift			2	74
Crane - 200 Ton			1	275
Above Grade Construction (Phase 2) (Index L-39 – 52 Construction Days)	8/1/2027	10/1/2027		
Pickup - 1/2 Ton			4	395
Pickup - 1 Ton			1	410
Generator – 25 Kw			2	36
120' Manlift			2	74

Based on review of construction modeling identified in Attachment 5.3-A to the PEA, the total diesel particulate emissions during the construction activities (L-02, L-03, L-04 and L-39) would cumulatively generate 0.217 tons of diesel particulates 2.5 microns or smaller ($PM_{2.5}$) which is the primary TAC considered in this analysis. In addition, per the PEA, these emissions assume the requirement to include at least 75 percent of Tier 4 diesel construction equipment.

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Construction Emissions Calculations

The AERMOD dispersion model was used to determine the concentration of $PM_{2.5}$ from the diesel exhaust generated during construction at the nearby residential receptor. The AERMOD files for the Project are provided in ***Attachment A*** to this Letter.

Exposure is evaluated by calculating the dose in milligrams per kilogram body weight per day (mg/kg/d). For residential exposure, the breathing rates are determined for specific age groups, so inhalation dose (Dose-air) is calculated for each of these age groups, 3rd trimester, 0<2, 2<9, and 2<16 and 16-70 years. The following algorithms calculate this dose for exposure through the inhalation pathways. The worst-case cancer risk dose calculation is defined in Equation 1 below (OEHHA, February 2015).

Equation 1 $$Dose_{air} = C_{air} * (BR/BW) * A * EF * (1x10^{-6})$$

$Dose_{air}$	=	Dose through inhalation (mg/kg/d)
C_{air}	=	Concentration in air (µg/m3) Annual average DPM concentration in µg/m3 - AERMOD predicts annual averages.
BR/BW	=	Daily breathing rate normalized to body weight (L/kg BW-day). See Table I.2 for the daily breathing rate for each age range.
A	=	Inhalation absorption factor (assumed to be 1)
EF	=	Exposure frequency (unitless, days/365 days)
1x10-6	=	Milligrams to micrograms conversion (10^{-3} mg/ µg), cubic meters to liters conversion (10^{-3} m^3/l)

Cancer risk is calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor, the frequency of time spent at home and the exposure duration divided by averaging time, to yield the excess cancer risk. As described below, the excess cancer risk is calculated separately for each age grouping and then summed to yield cancer risk for any given location. The worst-case cancer risk calculation is defined in Equation 2 below (OEHHA, February 2015):

Equation 2 $$RISK_{inh\text{-}res} = DOSE_{air} \times CPF \times ASF \times ED/AT \times FAH$$

$RISK_{inh\text{-}res}$	=	Residential inhalation cancer risk
$DOSE_{air}$	=	Daily inhalation dose (mg/kg-day)
CPF	=	Inhalation cancer potency factor (mg/kg-day^{-1})
ASF	=	Age sensitivity factor for a specified age group (unitless)
ED	=	Exposure duration (in years) for a specified age group
AT	=	Averaging time for lifetime cancer risk (years)
FAH	=	Fraction of time spent at home (unitless)

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The OEHHA recommends that an exposure duration (residency time) during construction activities be over the construction period which for this project is 518 calendar days. This duration should be used to estimate individual cancer risk for the Maximally Exposed Individual Resident (MEIR). Health risk calculations are shown in ***Attachment B*** to this Letter.

Non-Cancer risks or risks defined as chronic or acute are also known with respect to DPM and are determined by the hazard index. To calculate hazard index, DPM concentration is divided by its chronic Reference Exposure Levels (REL). Where the total equals or exceeds one, a health hazard is presumed to exist. RELs are published by the OEHHA (OEHHA, February 2015). Diesel Exhaust has a REL of 5 µg/m^3 and targets the respiratory system.

Heath Risk Calculations

Over the construction duration, the project would emit 0.217 tons over 518-day elapsed period which works out to an average of 0.00439 grams of $PM_{2.5}$ exhaust per second (g/s). Based on the site configuration, the average emission rate over the grading area is 3.74x10^{-8} grams/second per meter squared (g/s-m^2), which was calculated as follows:

$$\frac{0.00439\,\frac{grams}{second}}{29\ acres * 4{,}046\,\frac{meters^2}{acre}} = 3.74 * 10^{-8}\ \frac{\frac{grams}{meters^2}}{second}$$

Utilizing the AERMOD dispersion model, the worst-case annual concentration of DPM from Project construction is estimated at 0.00136 µg/m^3. Utilizing Equation 2 above, the inhalation cancer risk for the closest residential receptor was found to be less than one in one million exposed which is less than the allowable 20 per one million exposed. Given this, a less than significant cancer risk is expected.

Finally, there are known acute and chronic health risks associated with diesel exhaust which are considered non-cancer risks. Since the Project construction emissions are 0.00136 µg/m^3, the non-cancer risks would also be less than significant since 0.00136 µg/m^3 divided by the REL of 5 µg/m^3 yields a Health Hazard Index less than one. Therefore, no acute or chronic health risks are expected, and all health risks are considered less than significant.

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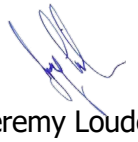
If you should have any questions regarding this assessment, please do not hesitate to contact (760) 473-1253.

Sincerely,
Ldn Consulting, Inc.



Jeremy Louden

Attachments:

A: AERMOD Files

B: Cancer Risk Calculations

References:

OEHHA. (2001). *Health Effects of Diesel Exhaust.* Retrieved from https://oehha.ca.gov/media/downloads/calenviroscreen/indicators/diesel4-02.pdf

OEHHA. (February 2015). *Air Toxics Hot Spots Program - Risk Assessment Guidelines - Guidance Manual for Preparation of Health Risk Assessments.* OEHHA.

SJVAPCD. (2015). *Air Quality Thresholds of Significance – Toxic Air Contaminants.* Retrieved from http://www.valleyair.org/transportation/0714-GAMAQI-TACs-Thresholds-of-Significance.pdf

1   AERMOD PRIME - (DATED 23132)

                   AERMODPrMSPx VERSION
            (C) COPYRIGHT 1998-2022, Trinity Consultants

 Run Began on 8/19/2024 at 5:57:11

** BREEZE AERMOD
** Trinity Consultants
** VERSION 12.0

CO STARTING
CO TITLEONE Manning Substation Construction DPM
CO MODELOPT DFAULT CONC NODRYDPLT NOWETDPLT
CO RUNORNOT RUN
CO AVERTIME ANNUAL
CO POLLUTID PM10
CO FINISHED

SO STARTING
SO ELEVUNIT METERS
SO LOCATION PU28B001 AREA   713919.9 4053047.9 0
** SRCDESCR Construction Site
SO SRCPARAM PU28B001 3.75E-08 3 336.3 327.8 0 1
SO SRCGROUP ALL
SO FINISHED

RE STARTING
RE ELEVUNIT METERS
RE DISCCART 715028.3 4053748 0 0
** SENSITIV
** RCPDESCR D1
RE FINISHED

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ME UAIRDATA 23230 2017
ME PROFBASE 0 METERS
ME FINISHED

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OU FILEFORM FIX
OU PLOTFILE ANNUAL ALL ALL`ANNUAL.plt 10000
OU FINISHED

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** AMPZONE -1
** AMPHEMISPHERE

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** DATUM WGE
** UNITS METER
** ZONE 11
** HEMISPHERE N
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** ORIGINLAT 0
** PARALLEL1 0
** PARALLEL2 0
** AZIMUTH 0
** SCALEFACT 0
** FALSEEAST 0
** FALSENORTH 0

** POSTFMT UNFORM
** TEMPLATE UserDefined
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** AERMAPEXE AERMAP_EPA_18081_64.EXE

  *** Message Summary For AERMOD Model Setup ***

  --------- Summary of Total Messages --------

 A Total of   0 Fatal Error Message(s)
 A Total of   2 Warning Message(s)
 A Total of   0 Informational Message(s)

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   ******** FATAL ERROR MESSAGES ********
            ***  NONE  ***


   ********   WARNING MESSAGES   ********
 ME W186      43       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used           0.50
 ME W187      43       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

 *** AERMOD - VERSION 23132  ***   ***  Manning Substation Construction DPM                                ***        08/19/24
 *** AERMET - VERSION  18081 ***   ***                                                                    ***        05:57:11
                                                                                                                     PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*

                                        ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 ** Model Options Selected:
      * Model Uses Regulatory DEFAULT Options
      * Model Is Setup For Calculation of Average CONCentration Values.
      * NO GAS DEPOSITION Data Provided.
      * NO PARTICLE DEPOSITION Data Provided.
      * Model Uses NO DRY DEPLETION. DDPLETE  =  F
      * Model Uses NO WET DEPLETION. WETDPLT  =  F
      * Stack-tip Downwash.
      * Model Accounts for ELEVated Terrain Effects.
      * Use Calms Processing Routine.
      * Use Missing Data Processing Routine.
      * No Exponential Decay.
      * Model Uses RURAL Dispersion Only.
      * ADJ_U*   - Use ADJ_U* option for SBL in AERMET
      * CCVR_Sub - Meteorological data includes CCVR substitutions
      * TEMP_Sub - Meteorological data includes TEMP substitutions
      * Model Assumes No FLAGPOLE Receptor Heights.
      * The User Specified a Pollutant Type of: PM10

 **Model Calculates ANNUAL Averages Only

 **This Run Includes:      1 Source(s);       1 Source Group(s); and       1 Receptor(s)

               with:      0 POINT(s), including
                          0 POINTCAP(s) and      0 POINTHOR(s)
                and:      0 VOLUME source(s)
                and:      1 AREA type source(s)
                and:      0 LINE source(s)
                and:      0 RLINE/RLINEXT source(s)
                and:      0 OPENPIT source(s)
                and:      0 BUOYANT LINE source(s) with a total of     0 line(s)
                and:      0 SWPOINT source(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  18081

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     0.00 ;  Decay Coef. =    0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Input Runstream File:          aermod.inp
 **Output Print File:             aermod.out

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 *** AERMET - VERSION  18081 ***   ***                                                                    ***        05:57:11
                                                                                                                     PAGE   2
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  NODRYDPLT  NOWETDPLT  RURAL  ADJ_U*


                                              *** AREA SOURCE DATA ***

               NUMBER EMISSION RATE  COORD (SW CORNER)  BASE     RELEASE  X-DIM     Y-DIM    ORIENT.    INIT.   URBAN  EMISSION RATE  AIRCRAFT
   SOURCE       PART.  (GRAMS/SEC       X         Y      ELEV.    HEIGHT  OF AREA   OF AREA   OF AREA     SZ     SOURCE  SCALAR VARY
    ID          CATS.   /METER**2)   (METERS) (METERS) (METERS) (METERS) (METERS)  (METERS)    (DEG.)  (METERS)              BY
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 *** AERMOD - VERSION 23132  ***   ***  Manning Substation Construction DPM                                ***        08/19/24
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*** AERMET - VERSION 18081 ***   ***   ***   05:57:11
PAGE   3

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
ALL	PU28B001 ,

*** AERMOD - VERSION 23132 ***   *** Manning Substation Construction DPM   ***   08/19/24
*** AERMET - VERSION 18081 ***   ***   ***   05:57:11
PAGE   4

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
(1=YES; 0=NO)

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NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54,   3.09,   5.14,   8.23, 10.80,

*** AERMOD - VERSION 23132 ***   *** Manning Substation Construction DPM   ***   08/19/24
*** AERMET - VERSION 18081 ***   ***   ***   05:57:11
PAGE   5

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

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Profile format: FREE
Surface station no.:   93193   Upper air station no.:   23230
Name: UNKNOWN   Name: UNKNOWN
Year: 2017   Year: 2017

First 24 hours of scalar data

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17	01	01	1	01	-17.1	0.179	-9.000	-9.000	-999.	182.	35.4	0.07	1.00	1.00	2.36	171.	10.0	279.2	2.0
17	01	01	1	02	-8.5	0.123	-9.000	-9.000	-999.	105.	19.7	0.06	1.00	1.00	1.76	128.	10.0	279.2	2.0
17	01	01	1	03	-16.3	0.173	-9.000	-9.000	-999.	172.	32.8	0.06	1.00	1.00	2.40	124.	10.0	278.8	2.0
17	01	01	1	04	-20.3	0.201	-9.000	-9.000	-999.	217.	44.6	0.07	1.00	1.00	2.64	108.	10.0	278.8	2.0
17	01	01	1	05	-25.3	0.251	-9.000	-9.000	-999.	301.	69.2	0.06	1.00	1.00	3.42	128.	10.0	278.8	2.0
17	01	01	1	06	-25.4	0.252	-9.000	-9.000	-999.	304.	70.1	0.06	1.00	1.00	3.44	134.	10.0	278.8	2.0
17	01	01	1	07	-24.4	0.242	-9.000	-9.000	-999.	285.	64.2	0.06	1.00	1.00	3.30	141.	10.0	277.5	2.0
17	01	01	1	08	-17.9	0.190	-9.000	-9.000	-999.	199.	39.7	0.06	1.00	0.65	2.62	135.	10.0	277.5	2.0
17	01	01	1	09	14.0	0.191	0.589	0.005	520.	200.	-44.2	0.06	1.00	0.36	2.23	127.	10.0	278.8	2.0
17	01	01	1	10	50.8	0.261	1.066	0.018	854.	320.	-31.4	0.06	1.00	0.26	2.98	130.	10.0	279.9	2.0
17	01	01	1	11	77.8	0.331	1.330	0.020	1083.	458.	-41.8	0.06	1.00	0.22	3.86	128.	10.0	281.4	2.0
17	01	01	1	12	91.7	0.283	1.407	0.019	1087.	362.	-22.0	0.06	1.00	0.21	3.13	131.	10.0	281.4	2.0
17	01	01	1	13	92.5	0.206	1.413	0.019	1091.	226.	-8.4	0.07	1.00	0.21	1.93	100.	10.0	282.5	2.0
17	01	01	1	14	79.7	0.214	1.346	0.018	1095.	238.	-11.0	0.07	1.00	0.22	2.08	101.	10.0	283.1	2.0
17	01	01	1	15	54.0	0.331	1.183	0.018	1097.	458.	-60.2	0.08	1.00	0.26	3.68	85.	10.0	283.1	2.0
17	01	01	1	16	14.0	0.292	0.755	0.018	1098.	379.	-158.4	0.08	1.00	0.35	3.39	89.	10.0	282.5	2.0
17	01	01	1	17	-16.5	0.191	-9.000	-9.000	-999.	205.	40.1	0.07	1.00	0.62	2.50	94.	10.0	282.5	2.0
17	01	01	1	18	-14.0	0.162	-9.000	-9.000	-999.	156.	28.8	0.07	1.00	1.00	2.15	91.	10.0	282.0	2.0
17	01	01	1	19	-14.0	0.162	-9.000	-9.000	-999.	156.	28.8	0.07	1.00	1.00	2.15	119.	10.0	281.4	2.0
17	01	01	1	20	-10.6	0.139	-9.000	-9.000	-999.	124.	22.5	0.06	1.00	1.00	1.96	131.	10.0	281.4	2.0
17	01	01	1	21	-7.2	0.120	-9.000	-9.000	-999.	99.	21.2	0.21	1.00	1.00	1.25	207.	10.0	281.4	2.0
17	01	01	1	22	-8.9	0.130	-9.000	-9.000	-999.	113.	22.4	0.13	1.00	1.00	1.55	340.	10.0	282.0	2.0
17	01	01	1	23	-5.6	0.099	-9.000	-9.000	-999.	75.	15.7	0.06	1.00	1.00	1.43	133.	10.0	280.4	2.0
17	01	01	1	24	-8.7	0.129	-9.000	-9.000	-999.	111.	21.9	0.12	1.00	1.00	1.57	317.	10.0	280.9	2.0

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
17	01	01	01	10.0	1	171.	2.36	279.3	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

*** AERMOD - VERSION 23132 ***   *** Manning Substation Construction DPM   ***   08/19/24
*** AERMET - VERSION 18081 ***   ***   ***   05:57:11
PAGE   6

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 1 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): PU28B001 ,

*** SENSITIVE DISCRETE RECEPTOR POINTS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
715028.30	4053748.00	0.00136			

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 1 YEARS ***

** CONC OF PM10 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.00136 AT (715028.30, 4053748.00, 0.00, 0.00, 0.00)	SR	
	2ND HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)		
	3RD HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)		
	4TH HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)		
	5TH HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)		
	6TH HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)		
	7TH HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)		
	8TH HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)		
	9TH HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)		
	10TH HIGHEST VALUE IS	0.00000 AT (0.00, 0.00, 0.00, 0.00, 0.00)		

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

*** MODELOPTs: RegDFAULT CONC ELEV NODRYDPLT NOWETDPLT RURAL ADJ_U*

*** Message Summary : AERMOD Model Execution ***

--------- Summary of Total Messages --------

A Total of 0 Fatal Error Message(s)
A Total of 2 Warning Message(s)
A Total of 173 Informational Message(s)

A Total of 8760 Hours Were Processed

A Total of 33 Calm Hours Identified

A Total of 140 Missing Hours Identified (1.60 Percent)

******** FATAL ERROR MESSAGES ********
*** NONE ***

******** WARNING MESSAGES ********
ME W186 43 MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used 0.50
ME W187 43 MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

****
*** AERMOD Finishes Successfully ***
****

Air Quality Health Risk Calculations (Worst-Case)
Manning Substation (Controlled)

From CalEE Annual Output	Emission per day (Ton/Total Construction Duration)	**0.2174799**
	Construction Start	**5/1/2026**
	Construction Complete	**10/1/2027**
	Days	**518**
	Construction Emission per day (lb/day)	**0.839690734**
Used as an input to AERSCREEN	Annualized Emission Rate (Grams/Second)	**0.004402545**
	Project Site Size (Acres)	**29**
	Project Site Size (meters^2)	**117358.8362**
	AERMOD input (Grams/Second-meters^2)	**3.75135E-08**
	Concentration From AERMOD (Ug/M^3)	**1.36E-03**

From AERSCREEN Hourly * 0.1 to convert to annual

	Days	Days to years				
Duration	518	1.419178082				
Age (Years)	3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From F15	0.00136	0.00136	0.00136	0.00136	0.00136	0.00136
Breathing Rate per agegroup BR/BW (Page 5-25)	361	1090	861	745	335	290
A (Default is 1)	1	1	1	1	1	1
Exposure Frequency = EF (days/365days)	0.96	0.96	0.96	0.96	0.96	0.96
10^-6 Microgram to Milligram / liters to m3	0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh	0.00000047	0.00000142	0.00000112	0.00000097	0.00000044	0.00000038
Construction Days	518	1.419178082				
potency factor for Diesel	1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor	10	10	3	3	1	1
ED	0.25	1.419178082	1.419178082	1.419178082	1.419178082	1.419178082
AT	70	70	70	70	70	70
FAH	1	1	1	1	0.73	0.73
Risk for Each Age Group	1.85162E-08	3.17372E-07	7.52084E-08	6.50758E-08	7.12048E-09	6.164E-09
Risk per million Exposed	0.018516206	0.317371687	0.075208355	0.065075754	0.007120481	0.006163999
Cancer Risk Per Million Duration	0.34					

Air Quality Health Risk Calculations (Worst-Case)
Mainsail Horizons AL - T3W/DPF

From CalEE Annual Output	Emission per day (Ton/Total Construction Duration)	**0.0077**
	Construction Start	**1/1/2025**
	Construction Complete	**11/18/2025**
	Days	**321**
	Construction Emission per day (lb/day)	**0.047975078**
	Annual Duration (Days)	**365**
Used as an input to AERSCREEN	Annualized Emission Rate (Grams/Second)	**0.000251536**
	Project Site Size (Acres)	**12.4**
	Project Site Size (meters^2)	**50181.01964**
	Length of Smalles Side (meters)	**224.0112043**
	Concentration Hourly From AERSCREEN (Ug/M^3)	**5.01E-09**
From AERSCREEN Hourly * 0.08 to convert to annual	Concentration Annual (Ug/M^3)	**0.07452**

		Days	Days to years				
Duration		518	1.419178082				
Age (Years)		3rd Trimester (0.25)	0-2	2-9	2-16	16-30	16-70
Cair (annual) - From F15		0.07452	0.07452	0.07452	0.07452	0.07452	0.07452
Breathing Rate per agegroup BR/BW (Page 5-25)		361	1090	861	745	335	290
A (Default is 1)		1	1	1	1	1	1
Exposure Frequency = EF (days/365days)		0.96	0.96	0.96	0.96	0.96	0.96
10^-6 Microgram to Milligram / liters to m3		0.000001	0.000001	0.000001	0.000001	0.000001	0.000001
Dose-inh		0.00002583	0.00007798	0.00006160	0.00005330	0.00002397	0.00002075
Construction Days		518	1.419178082				
potency factor for Diesel		1.1	1.1	1.1	1.1	1.1	1.1
Age Sensitivity Factor		10	10	3	3	1	1
ED		0.25	1.419178082	1.419178082	1.419178082	1.419178082	1.419178082
AT		70	70	70	70	70	70
FAH		0.85	0.85	0.72	0.72	0.73	0.73
Risk for Each Age Group		8.62392E-07	1.47816E-05	2.9671E-06	2.56735E-06	3.9016E-07	3.37751E-07
Risk per million Exposed		0.862392281	14.7815863	2.967102314	2.567353338	0.390160489	0.337750871
		15.64397858					
Cancer Risk Per Million 9-years		18.61					
Cancer Risk Per Million 30-years		18.60					
Cancer Risk Per Million 70-years		**18.55**					