The AERMOD modeling system is composed of three modular components: AERMAP, the terrain preprocessor; AERMET, the meteorological preprocessor; and AERMOD, the dispersion module. AERMAP is used to extract terrain elevations for selected model objects – emission sources, buildings and receptor points – and to generate the receptor hill heights that are used by AERMOD to drive advanced terrain processing algorithms. National Elevation Database (NED) data available from the USGS are utilized to interpolate surveyed elevations onto user-specified model objects in the absence of more accurate site-specific elevation data.

AERMET generates separate surface file and vertical profile file to pass meteorological observations and turbulence parameters to AERMOD. For this assessment, AERMET meteorological data was downloaded from EPD's website.[12]

The following section describes the modeling protocol and source parameters used in the refined dispersion modeling assessment for the facility.

5.1.2 Stack Parameters

Table 5-2 and Table 5-3 provide a summary of the location and stack parameters used in the dispersion model. Table 5-4 and Table 5-5 provide a summary of modeled emission rates. For purposes of the modeling assessment, emissions are evaluated at each chip storage silo by taking the total emissions for the dry chip storage process and dividing by the number of silos at the Adel facility.

Table 5-2. Stack Parameters Modeled – Point Source

Stack	Description	UTM Easting m	UTM Northing m	Stack Height m	Stack Temp K	Stack Velocity m/s	Stack Diameter m
S1	RTO/Dryer	270361.15	3441367.68	15.24	394.26	18.29	2.22
S2	RCO/GHM/DHM/PM/PC	270281.14	3441349.78	15.24	394.26	14.76	2.22
S8	Pellet Storage Silo	270371.10	3441204.40	21.34	Ambient	1.52	1.40

Table 5-3. Stack Parameters Modeled – Area Source

Source	Description	UTM Easting m	UTM Northing m	Surface Area m^2	Elevation m	Release Height m	Radius m	Vertices --	Initial Vertical Dimension m
S3	Chip Storage Silo No. 1	270376.60	3441345.40	50.27	66.86	12.00	4.00	20.00	--
S4	Chip Storage Silo No. 2	270294.80	3441316.40	50.27	66.86	12.00	4.00	20.00	--
S5	Chip Storage Silo No. 3	270109.00	3441431.20	50.27	66.86	12.00	4.00	20.00	--
S6	Chip Storage Silo No. 4	270306.30	3441434.30	50.27	66.86	12.00	4.00	20.00	--
S7	Chip Storage Silo No. 5	270307.40	3441396.50	50.27	66.86	12.00	4.00	20.00	--

[12] https://epd.georgia.gov/air-protection-branch-technical-guidance-0/air-quality-modeling/georgia-aermet-meteorological-data