Plant Washington

Prevention of Significant Deterioration Air Permit Application

Prepared for:

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Sierra Club Ex. 40

TABLE OF CONTENTS

Page

Sierra Club Ex. 40

Page

LIST OF TABLES

LIST OF FIGURES

LIST OF EXHIBITS

5.0 PSD AMBIENT AIR QUALITY ANALYSIS

The proposed project triggered a PSD review for PM_{10}, NO_x, CO, SO_2, VOC, Lead (Pb), Sulfuric Acid Mist (SAM) and Fluorides (as HF) as indicated in Section 3.0; therefore, an air quality modeling analysis was required for each pollutant (PSD modeling is not required for SAM, however, it is included in the air toxics analysis modeling evaluation in Section 7). Although the project triggers a PSD review for VOC, there are no modeling requirements for VOC emissions; therefore, a modeling analysis was not completed for this pollutant. Screening analyses indicated that the project will exceed the PSD Significant Impact Levels (SILs) for SO_2 while PM_{10}, NO_x, and CO concentrations will be below their corresponding levels. HF and Pb are below their significant monitoring level concentrations. Refined modeling was completed for SO_2. The results of the refined modeling analysis demonstrated that the project will not exceed either the National Ambient Air Quality Standards (NAAQS) or PSD Increment consumption levels for SO_2 and therefore will comply with the PSD air quality standards. The results of this analysis are summarized in the following sections. Electronic copies of the input and output files for the model runs are included on a disc in Exhibit D.

5.1 MODELING METHODOLOGY

The first step in air quality modeling is to run a screen model of all emission sources at the proposed facility. The screen model results for the PSD-triggered pollutants are used to determine whether the emission increases from the proposed facility will result in concentrations that exceed their respective SILs. Refined modeling will be required if significant levels are exceeded. Table 5-1 shows the SILs for PM_{10}, $PM_{2.5}$, NO_x, SO_2, and CO. Current USEPA guidelines call for $PM_{2.5}$ to be evaluated as a surrogate for PM_{10}. Currently there are no promulgated significant impact levels for $PM_{2.5}$, however, on September 21, 2007 the USEPA proposed significant impact levels for $PM_{2.5}$. This USEPA proposal includes three options for $PM_{2.5}$ SILs. As a worst case evaluation, the modeling results for $PM_{2.5}$ are being compared to the lowest of the three options. This modeling is not a requirement for the permit application under current guidelines; however, the results are being included in order to demonstrate that the plant will have an insignificant impact on $PM_{2.5}$ concentrations in the area. The screen results were also compared to the lowest of the proposed $PM_{2.5}$ significant monitoring concentrations to determine whether a review for preconstruction monitoring will be required.

Table 5-1 Significant Impact Levels and Significant Monitoring Concentrations

Pollutant	Averaging Period	Significant Ambient Impact Level ($\mu g/m^3$)	Significant Monitoring Concentrations ($\mu g/m^3$)
$PM_{2.5}$[1]	24-hour	1.20	-
	Annual	0.30	-
PM_{10}	24-hour	5	10
	Annual	1	-
SO_2	3-hour	25	-
	24-hour	5	13
	Annual	1	-
NO_x	Annual	1	14
CO	8-hour	500	575
	1-hour	2,000	-
Pb	Calendar Quarter	-	0.10
HF	24-hour	-	0.25

1. Lowest of the three proposed Significant Impact Levels.

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The concentrations used for comparison to significant levels calculated by the screen models were the highest concentrations predicted at any receptor for all averaging periods for each modeled pollutant. In screening and refined modeling, the maximum concentration predicted by the model was resolved to within the 100-meter receptor grid spacing to obtain a true maximum (if the initial maximum receptor was not already located in the 100-meter spacing portion). The USEPA AERMOD model was used for all pollutants for all averaging periods. The latest version of AERMOD (Version 07026) was downloaded from USEPA's Support Center for Regulatory Air Models (SCRAM) Web site for use in the modeling.

The latest USEPA's Building Profile Input Program for Prime (BPIP-PRIME model -version 04274) was used to calculate flow vectors based on 36 possible wind directions in order to allow for building downwash.

A Cartesian receptor grid was used for the model runs. Receptors were spaced 100 meters apart along the fence line/patrolled property line and out to a distance of 2 kilometers from the property boundary. Receptors were spaced at 500 meters apart from 2 kilometers to 10 kilometers out from the property boundary. Figure 5-1 shows the receptors used in the PSD screen modeling. Digital Elevation Model (DEM) data obtained from the U.S. Geological Survey was used to determine receptor heights using USEPA's AERMAP (Version 06341) computer program.

As part of the project, Power4Georgians will be closing the portion of Mayview road that goes through the plant property. A letter from the Washington County Board of Commissioners to the EPD director outlining this road closure is included in Exhibit C of the permit application. With the closure of this road, this portion of the plant property will not have public access and will not therefore be included in the modeling evaluation.

The proposed project will result in a potential VOC emission increase greater than 100 tons per year; therefore, the PSD air modeling guidelines require an evaluation to determine whether preconstruction monitoring is warranted. Preconstruction monitoring of ozone can be waived in the event that representative data for the area is available. The Georgia EPD operates ozone monitors at 24 locations across the state including two sites northeast of the site in Richmond and Columbia Counties and two sites West/ Southwest of the site in Bibb County. These monitors are considered representative of the ozone levels in the area. The maximum 1-hour and 8-hour ozone monitor values for 2006 from the monitors are 0.10 ppm and 0.09 ppm for the Richmond County monitor, 0.14 ppm and 0.09 ppm for the Columbia County monitor, and 0.10 and 0.09 ppm for the closest monitor in Bibb County (Georgia Forestry Commission monitor). The only impact that VOC emissions could have on air quality is the potential creation of ozone when combined with NO_x in ambient air in the presence of sunlight. Photochemical smog is not a problem in this area of the state.

The regulatory default option and rural environment were used in the models. The Auer Method, which determines the characteristics of a modeling area, was used to confirm that the land use surrounding the proposed site in Washington County is rural, as shown in Table 5-2. Figure 5-2, a topographic map of the area surrounding the proposed plant, denotes land use within 3 kilometers.

Table 5-2 Land Use Analysis - Auer Method

Type	Use and Structure	Vegetation	50% of Land Use? (Y/N)
I1	**Heavy Industrial** Major chemical, steel, and fabrication industries; generally 3- to 5-story buildings with flat roofs	Grass and tree growth extremely rare. Less than 5% vegetation.	**N**
I2	**Light-moderate Industrial** Rail yards, truck depots, warehouses, industrial parks, and minor fabrications; generally 1- to 3-story buildings with flat roofs	Very limited grass; trees almost totally absent. Less than 5% vegetation.	**N**
C1	**Commercial** Office and apartment buildings and hotels; 10 stories and flat roofs	Limited grass and trees. Less than 5% vegetation.	**N**
R2	**Compact Residential** Single and some multiple family dwellings with close spacing; generally 2 stories with pitched roofs; garages (via alley) and ash pits; no driveways	Limited lawn sizes and shade trees. Less than 30% vegetation.	**N**
R3	**Compact Residential** Old multi-family dwellings with close (2-meter) lateral separation; generally 2-story, flat-roof structures; garages (via alley) and ash pits; no driveways	Limited lawn sizes and old, established shade tress. Less than 35% vegetation.	**N**
	Conclusion – Urban or Rural?		**Rural Modeling Area**

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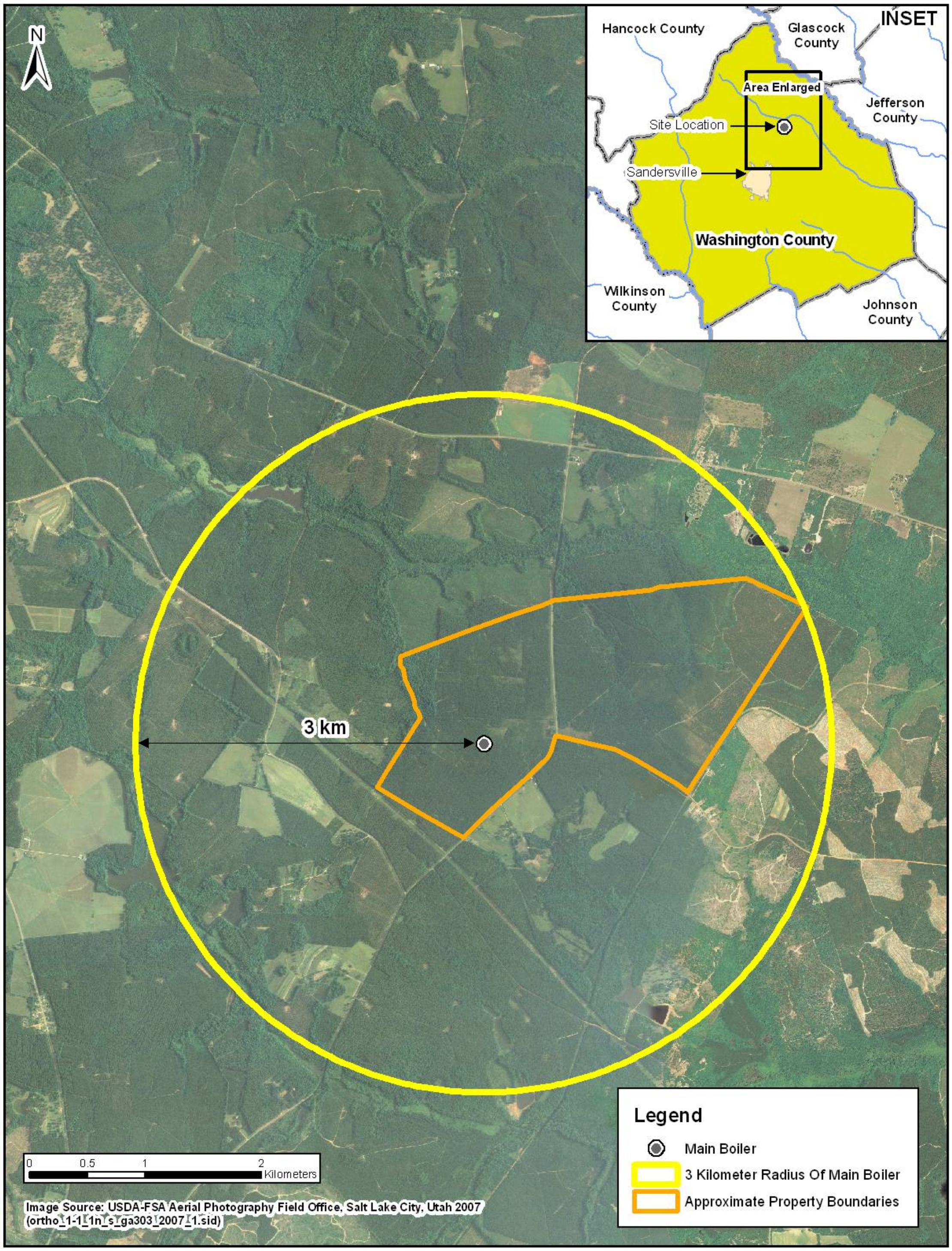
Each emission source was modeled at its maximum hourly emission rate for all modeled pollutants. Table 5-3 summarizes the emission rates and modeling parameters that were used for the on-site modeled emission sources in the screen model runs.

Sierra Club Ex. 40

Figure 5-1 Aerial Photograph Showing 3-Kilometer Radius around Proposed Site



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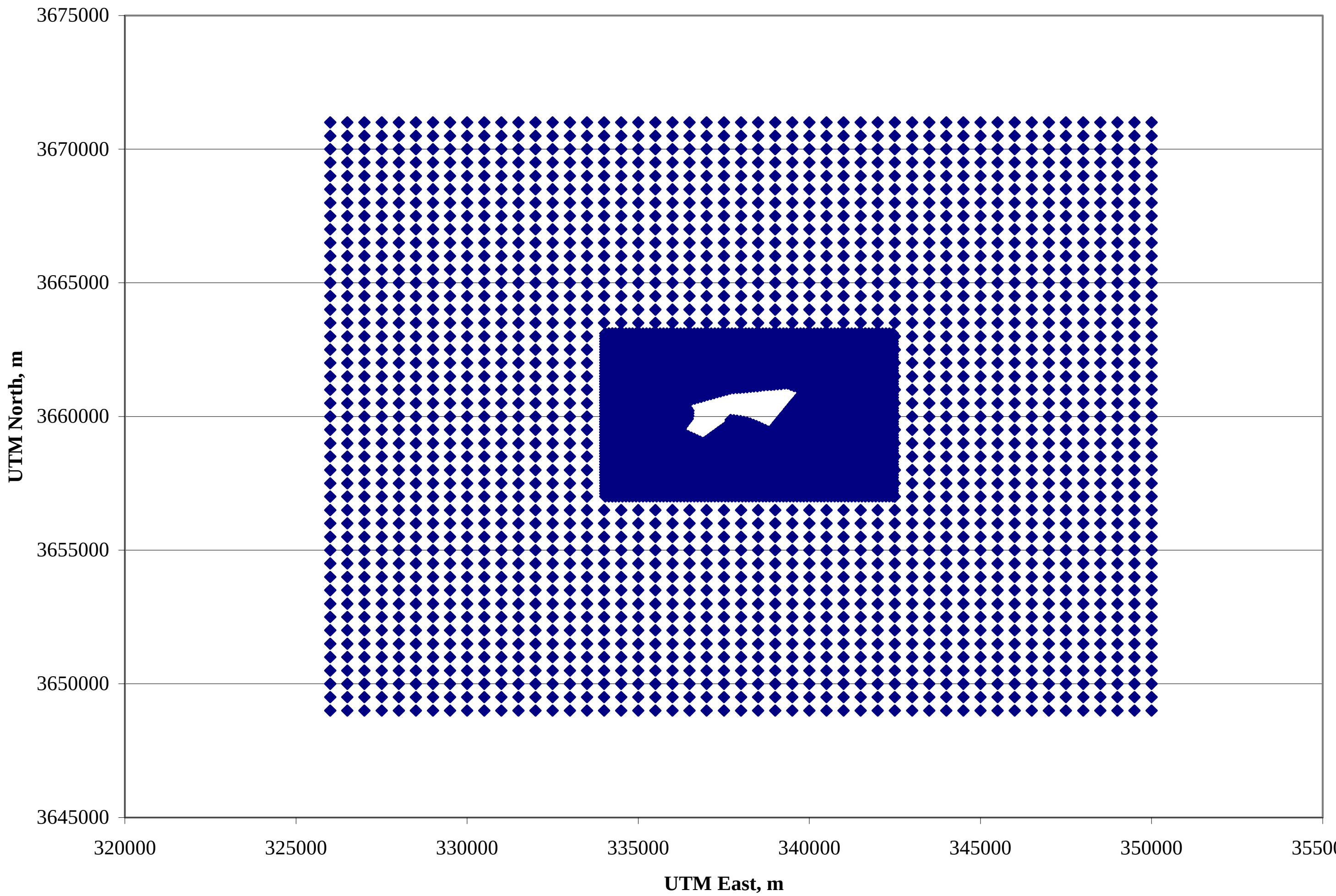
Checked by: SAK 1/17/08

Figure 5-2 Entire Modeling Receptor Set



Prepared by: LMG 1/17/08
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Table 5-3 Screen Modeling Source Emissions

	UTM Coordinates		$PM_{2.5}$ 24 Hour	$PM_{2.5}$ Annual	PM_{10} 24 Hour	PM_{10} Annual	SO_2 3 and 24 Hour	SO_2 Annual	NO_x	CO 1-Hour	CO 8-Hour	Pb	HF	H_2SO_4	Temperature	Height	Diameter	Velocity	Temperature
	East (m)	North (m)	g/s	g/s	g/s	g/s	g/s	g/s	g/s	g/s	g/s	g/s	g/s	g/s	°F	m	m	m/s	K
Coal-fired Boiler	337088.13	3659815.90	10.75	10.75	18.82	18.82	125.50	94.12	52.29	313.74	156.87	1.77E-02	0.31	5.23	140	137.16	9.14	18.55	333
Auxiliary Boiler	337338.40	3659776.00	7.26E-02	7.26E-02	0.60	0.60	1.51	1.51	3.02	2.54E-01	2.54E-01	2.72E-04	2.82E-04	1.81E-03	275	27.43	1.52	19.81	408
Cooling Tower No. 1	337021.84	3659703.97	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 2	337033.91	3659716.04	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 3	337033.91	3659691.90	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 4	337045.97	3659703.97	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 5	337045.97	3659679.83	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 6	337058.04	3659691.90	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 7	337058.04	3659667.76	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 8	337070.11	3659679.83	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 9	337070.11	3659655.69	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 10	337082.18	3659667.76	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 11	337082.18	3659643.62	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 12	337094.25	3659655.69	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 13	337094.25	3659631.55	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 14	337106.32	3659643.62	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 15	337106.32	3659619.48	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 16	337118.39	3659631.55	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 17	337118.39	3659607.41	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 18	337130.46	3659619.48	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 19	337130.46	3659595.34	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 20	337142.53	3659607.41	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 21	337142.53	3659583.27	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 22	337154.60	3659595.34	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 23	337154.60	3659571.20	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 24	337166.67	3659583.27	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 25	337166.67	3659559.13	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 26	337178.74	3659571.20	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 27	337178.74	3659547.06	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 28	337190.81	3659559.13	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 29	337190.81	3659534.99	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 30	337202.88	3659547.06	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 31	337202.88	3659522.92	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 32	337214.95	3659534.99	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 33	337214.95	3659510.86	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Cooling Tower No. 34	337227.02	3659522.92	2.78E-05	2.78E-05	6.35E-03	6.35E-03	-	-	-	-	-	-	-	-	68.00	15.24	12.19	6.07	293
Crusher House Dust Collector	337335.40	3660114.80	2.07E-02	2.07E-02	0.130	0.130	-	-	-	-	-	-	-	-	68.00	30.48	0.91	17.25	293
Tripper Decker	337350.40	3659853.00	1.56E-02	1.56E-02	9.72E-02	9.72E-02	-	-	-	-	-	-	-	-	68.00	59.13	0.79	17.45	293
Limestone Preparation Building	337101.10	3659891.40	7.29E-03	7.29E-03	2.70E-02	2.70E-02	-	-	-	-	-	-	-	-	-	18.29	54.81	0.001	293
Fly Ash Mechanical Exhausters (2)	337222.30	3659877.30	7.42E-03	7.42E-03	1.30E-02	1.30E-02	-	-	-	-	-	-	-	-	258	47.24	53.78	0.001	399
Fly Ash Silo	337222.30	3659890.40	4.63E-03	4.63E-03	8.10E-03	8.10E-03	-	-	-	-	-	-	-	-	177	47.24	54.81	0.001	354
Mercury Storage and Handling	337237.60	3659870.40	2.03E-03	2.03E-03	2.03E-03	2.03E-03	-	-	-	-	-	-	-	-	-	22.86	24.51	0.001	293
SO_3 Storage and Handling	337228.50	3659870.40	2.03E-03	2.03E-03	2.03E-03	2.03E-03	-	-	-	-	-	-	-	-	-	22.86	24.51	0.001	293
Soda Ash Storage and Handling	337293.70	3659690.70	1.01E-03	1.01E-03	1.01E-03	1.01E-03	-	-	-	-	-	-	-	-	-	22.86	24.51	0.001	293
Hydrated Lime Storage and Handling	337293.70	3659684.60	2.73E-04	2.73E-04	1.01E-03	1.01E-03	-	-	-	-	-	-	-	-	-	22.86	24.51	0.001	293
PRB Stackout	337317.75	3660421.69	1.30E-03	1.30E-03	8.10E-03	8.10E-03	-	-	-	-	-	-	-	-	68	33.53	30.02	0.001	293
Illinois No. 6 Stackout	337313.30	3660516.57	1.30E-03	1.30E-03	8.10E-03	8.10E-03	-	-	-	-	-	-	-	-	68	27.43	30.02	0.001	293
Limestone Stackout	337169.45	3660003.07	2.19E-03	2.19E-03	8.10E-03	8.10E-03	-	-	-	-	-	-	-	-	68	21.34	30.02	0.001	293

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Table 5-3 Screen Modeling Source Emissions (Continued)

							Area Source				Volume Source		
	UTM Coordinates		$PM_{2.5}$ 24 Hour	$PM_{2.5}$ Annual	PM_{10} 24 Hour	PM_{10} Annual	PM_{10} Emission Rate per Unit Area	$PM_{2.5}$ Emission Rate per Unit Area	Release Height	Vertices	Release Height	Initial Lateral Dimension	Initial Vertical Dimension
	East (m)	North (m)	g/s	g/s	g/s	g/s	g/m^2-s	g/m^2-s	m	-	m	m	m
Bottom Ash Storage and Handling System	337315.58	3659846.66	1.15E-04	1.15E-04	7.57E-04	7.57E-04	2.95E-06	4.46E-07	3.05	4	-	-	-
Solid Material Handling-Ash	337801.37	3660642.88	5.21E-03	5.21E-03	9.48E-03	9.48E-03	1.99E-08	1.09E-08	6.86	8	-	-	-
Solid Material Handling-Gypsum	338256.02	3659829.94	5.21E-03	5.21E-03	9.48E-03	9.48E-03	8.78E-09	4.82E-09	6.86	16			
Limestone Rail Unloading	337262.54	3660047.50	9.05E-06	9.05E-06	5.98E-05	5.98E-05	3.55E-07	5.38E-08	4.57	4	-	-	-
Coal Rail Unloading	337509.97	3660430.83	5.60E-05	5.60E-05	3.70E-04	3.70E-04	2.21E-06	3.35E-07	4.57	4	-	-	-
Limestone Storage and Handling	337169.45	3660003.07	2.24E-03	8.46E-05	1.58E-02	5.64E-04	-	-	-	-	2.90	26.79	1.35
Inactive PRB Coal Pile Storage and Handling	337143.92	3660318.92	5.20E-03	5.20E-03	5.89E-02	5.89E-02	-	-	-	-	15.28	63.80	7.11
Inactive Illinois No. 6 Coal Pile Storage and Handling	337143.92	3660554.71	5.20E-03	5.20E-03	5.89E-02	5.89E-02	-	-	-	-	11.70	53.16	5.44
Active PRB Coal Pile	337317.75	3660421.69	4.44E-03	2.63E-04	2.96E-02	1.74E-03	-	-	-	-	15.21	10.14	7.08
Active Illinois No. 6 Coal Pile	337313.30	3660516.57	4.44E-03	2.63E-04	2.96E-02	1.74E-03	-	-	-	-	15.21	10.14	7.08
Solid Material Handling Haul Road Node 1	337237.54	3659890.21	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 2	337266.14	3659897.90	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 3	337294.15	3659907.74	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 4	337324.63	3659907.74	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 5	337355.11	3659907.74	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 6	337385.59	3659907.74	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 7	337416.07	3659907.74	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 8	337446.45	3659908.93	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 9	337467.28	3659930.67	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 10	337486.88	3659954.02	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 11	337507.83	3659976.08	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 12	337533.39	3659992.54	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 13	337562.23	3660002.17	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 14	337592.55	3660004.53	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 15	337623.03	3660004.53	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 16	337653.51	3660004.53	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 17	337683.99	3660004.53	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 18	337714.47	3660004.53	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 19	337744.95	3660004.53	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 20	337775.43	3660004.53	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7
Solid Material Handling Haul Road Node 21	337805.82	3660006.54	1.12E-04	1.12E-04	7.48E-04	7.48E-04	-	-	-	-	2.44	4.48	1.7

Completed by: LMG 1/17/08
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5.2 FUGITIVE PARTICULATE MODELING

The modeling of fugitive PM_{10} and $PM_{2.5}$ emissions from the paved SMHF haul road followed the procedures outlined in the Georgia EPD "Guideline for assuring acceptable ambient concentration of PM_{10} in areas impacted by quarry operation producing crushed stones – October 15, 2004". Emissions from the paved SMHF haul road were estimated using the AP-42 equations outlined in the quarry modeling guidance. For emission estimation purposes the SMHF haul road was divided into segments and the amount of traffic through the Washington county power plant was estimated based on the amount of ash and gypsum generated from coal combustion. The AP-42 calculations utilize average truck weights, number of wheels on the trucks, silt content, and silt moisture content to calculate the lbs of PM_{10}/ $PM_{2.5}$ emissions per vehicle mile traveled. Estimates for the number of trucks trips and the length of the SMHF haul road were then used to calculate the total traveled distance. The total travel distance and PM emission factors were used to calculate emissions for each road segment. Sample calculations are included in Exhibit A of the permit application.

Once each road segment's PM_{10}/$PM_{2.5}$ emissions were calculated, each segment was divided into the appropriate volume sources as outlined in the quarry modeling guidance. The Site layout found in Exhibit B provides a map of the site, which locates all road segments included in the modeling analysis. The SMHF haul road was modeled as 10 foot x 40 foot volume sources. The effective height for all road dust volume sources were estimated at 8 feet in accordance with modeling guidance.

Emissions from the SMHF and the PRB and Illinois No. 6 Inactive Coal Piles were calculated based on emission factor equations obtained from AP-42 Table 11.9-1. The emission factor equations utilize silt and moisture contents to calculate PM_{10}/$PM_{2.5}$ emission rates, which were obtained from AP-42 Table 11.9-3. Once emissions were calculated, each source was modeled as an area poly source as outlined in Section 3.3.2.3 of the AERMOD User Guide (September 2004).

Drop point emissions from Coal Rail Unloading, Limestone Rail Unloading, and Bottom Ash Transfer were calculated using the drop point emission factor equation found in AP-42 Section 13.2.4.3. The equation utilizes the mean wind speed and moisture content of the material being handled to calculate an emission per unit ton of material handled factor. After computing emission rates, each drop point was modeled as an area poly source according to Section 3.3.2.3 of the AERMOD User Guide (September 2004).

Emissions from the Powder River Basin and Illinois No. 6 Active Piles were calculated using the Industrial Wind Erosion equations found in AP-42 (Section 13.2.5).

5.3 METEOROLOGICAL DATA

The Georgia EPD provided MACTEC with AERMET (version 06341) pre-processed meteorological data files based on surface data for the Macon Airport meteorological station and upper air data from the Centreville meteorological station for the 1987-1991 five year period. The development of the AERMET data set requires the assessment of surface characteristics of the surface meteorological station. These characteristics include albedo, bowen ratio, and surface roughness. Albedo is the fraction of total incident solar radiation reflected by the surface back to space without absorption, bowen ratio is an indicator of surface moisture, and surface roughness length is related to the height of obstacles in relation to wind flow. The AERMET data was processed using the surface characteristics assessed by Georgia EPD. A comparative analysis of surface characteristics surrounding the Plant Washington in Sandersville, Georgia and the surface meteorological station was conducted, according to the AERMOD Interim Guidance document.

The surface characteristics surrounding Plant Washington were compared to surface characteristics surrounding the surface meteorological station at the Macon Airport. Figure 5-3 is an aerial photo centered on the Macon airport surface meteorological data station and Figure 5-4 is an aerial photo of the Plant Washington. Each aerial photo was divided into the four sections: Section 1 from 350° to 80°, Section 2 from 80° to 140°, Section 3 from 140° to 220°, and Section 4 from 220° to 350°. These segments corresponded to the segments that were used in the AERMET processing. Table 5-4 shows a qualitative comparison between the surface characteristics at the proposed coal-fired power plant and the Macon Airport. Based on this comparative analysis, the Macon Airport justifiably represents the meteorological conditions at the proposed site.

Figure 5-3 Aerial View of Macon Surface Meteorological Station in Macon, Georgia

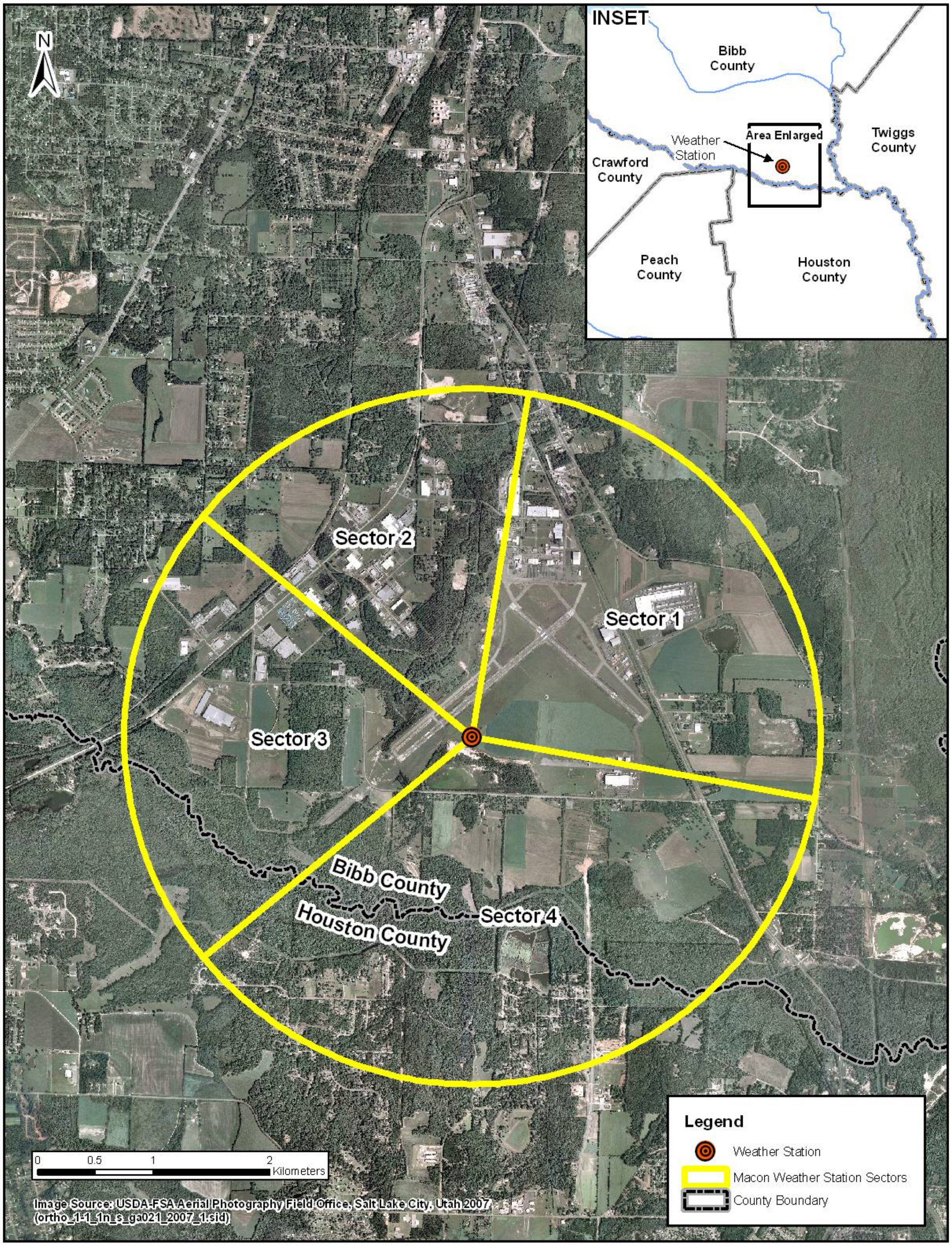

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Figure 5-4 Aerial View of Plant Washington in Sandersville, Georgia

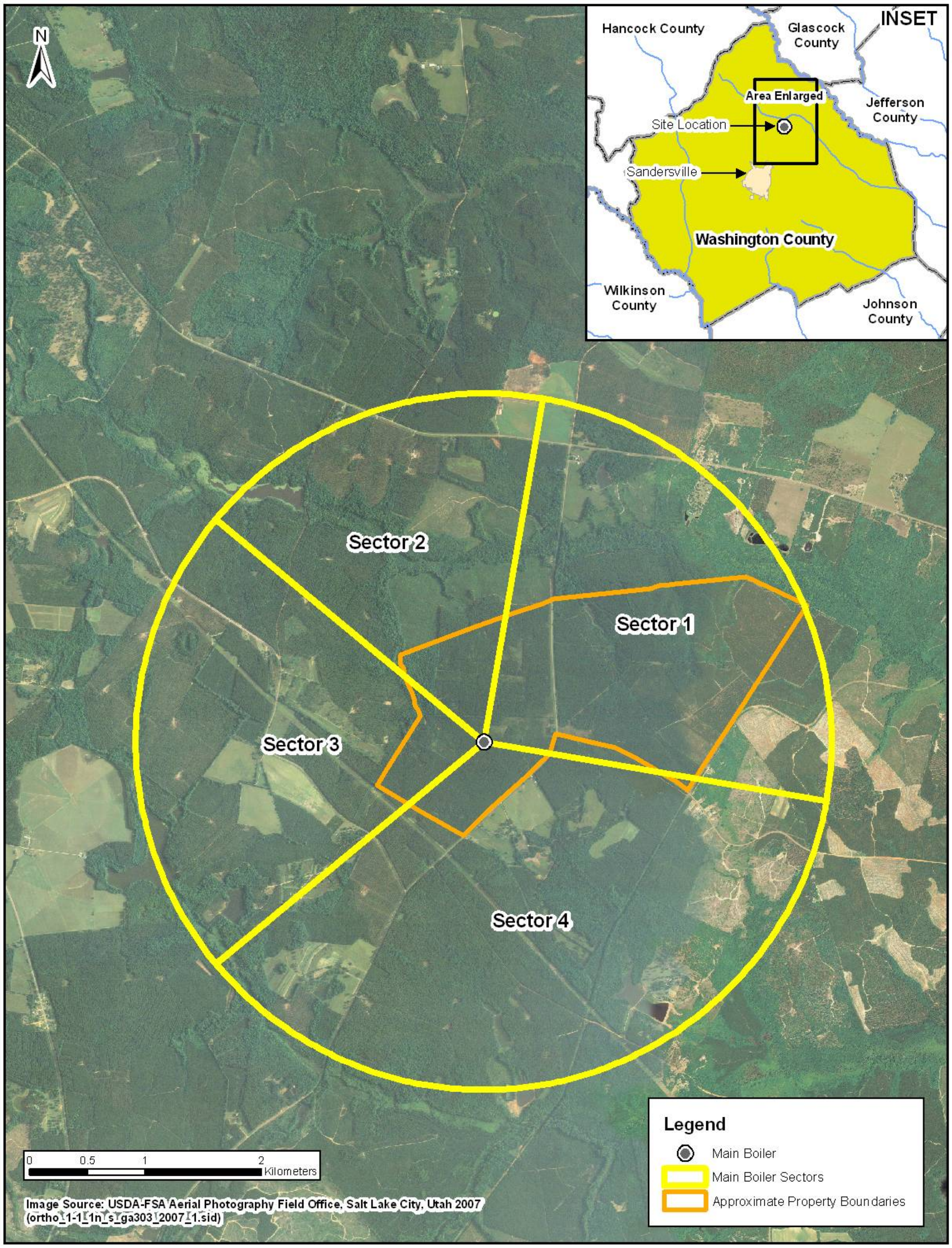

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Table 5-4 Qualitative Comparisons between the Surface Characteristics at Plant Washigton and the Macon Airport

Surface Characteristic	Macon Airport	Plant Washington
Albedo – Total incident radiation reflected back into space. 0.1 – Deciduous Forest 0.9 – White Snow	Green area except for a few buildings and roads 0.1 – 0.2	Green area except for a few buildings and roads 0.1 – 0.2
Bowen Ratio – Indication of surface moisture. 0.10 – Over water 10 – Over Desert	For Sectors 1 and 3 – Elevated surface with excellent surface run-off with little standing water ~2 For Sector 2 – Poor surface run-off due to depression and poor soil permeability due to red clay. < 1 For Sector 4 – Primarily vegetation with good surface run-off ~1	For Sectors 1 and 3 Excellent surface run-off with little standing water ~2 For Sector 2 – Poor infiltration due to concrete surface; therefore, a lot of standing water < 1 For Sector 4- Primarily vegetation with good surface run-off ~1
Surface Roughness Length – Height of obstacles in principal where horizontal wind velocity is zero. 0.001 m – Water >1 m - for Forest or Urban	For Sectors 1 and 4 trees and buildings are at an average height of 30 ft except for airport runway ~1 For Sectors 2 and 3 – areas are predominantly green fields <1	For Sectors 1 and 4 trees, are at an average height of 30 ft except for cultivated areas ~1 For Sectors 2 and 3 – areas are predominantly green fields and cultivated areas <1

Completed by: LMG 1/17/08
Checked by: SAK 1/17/08

5.4 PSD SCREEN MODELING RESULTS

The screen modeling for PM_{10}, $PM_{2.5}$, NO_x, CO, SO_2, VOC, Pb, and Fluorides (as HF) were used to determine whether the emission increases resulted in concentrations that exceed the SILs or the significant monitoring levels. Refined modeling is required and preconstruction monitoring must be evaluated if these significant levels are exceeded. Tables 5-5 through 5-8 show the results of the screen modeling for each pollutant, which are discussed in more detail below.

5.4.1 $PM_{2.5}$ Screen Model Results

The screen modeling results for $PM_{2.5}$, as presented in Table 5-5, do not exceed the lowest recently proposed SILs for the 24-hour and annual averaging periods (option 3 under the USEPA proposal). This modeling evaluation is not a regulatory requirement under the current air quality rules; however, the results are included to demonstrate that the project will not have a significant impact on $PM_{2.5}$ concentrations in the area around the proposed plant. The lowest of the proposed preconstruction monitoring level was also not exceeded.

Table 5-5 $PM_{2.5}$ Screening Results

24-hour Averaging Period			
Year of Model Run	**Maximum Concentration (µg/m^3)**	**Location of Receptors (UTM)**	
		X	**Y**
1987	1.00	338337	3658911
1988	1.01	338037	3659711
1989	1.10	338037	3659711
1990	0.97	337937	3659411
1991	0.97	338537	3659411
Significant Monitoring Level: 2.3 µg/m^3			
Significant Impact Level: 1.2 µg/m^3			
Annual Averaging Period			
Year of Model Run	**Maximum Concentration (µg/m^3)**	**Location of Receptors (UTM)**	
		X	**Y**
1987	0.15	337701.50	3659868.00
1988	0.16	337889.62	3659844.50
1989	0.19	338084.12	3659798.00
1990	0.15	338084.12	3659798.00
1991	0.15	337701.5	3659868.00
Significant Impact Level: 0.3 µg/m^3			

µg/m^3 = micrograms per cubic meter
km = Kilometer

Completed by: LMG 1/17/08
Checked by: SAK 1/17/08

5.4.2 PM_{10} Screen Model Results

The screen modeling results for PM_{10}, as presented in Table 5-6, do not exceed the SILs for the 24-hour and annual averaging periods; therefore, refined modeling is not required for the pollutant. The preconstruction monitoring level was also not exceeded.

Table 5-6 PM_{10} Screening Results

24-hour Averaging Period			
Year of Model Run	**Maximum Concentration (μg/m³)**	**Location of Receptors (UTM) X**	**Y**
1987	3.80	337214.66	3660874.25
1988	4.20	336838.34	3660738.75
1989	4.49	337214.66	3660874.25
1990	4.06	337026.09	3660807.50
1991	4.22	336931.34	3360774.00
Significant Impact Level: 5 μg/m			
Significant Monitoring Concentration: 10 μg/m³			

Annual Averaging Period			
Year of Model Run	**Maximum Concentration (μg/m³)**	**Location of Receptors (UTM) X**	**Y**
1987	0.60	337026.09	3660807.50
1988	0.67	336931.94	3660774.00
1989	0.73	336931.94	3660774.00
1990	0.67	337026.09	3660807.50
1991	0.55	337026.09	3660807.50
Significant Impact Level: 1 μg/m³			

μg/m³ = Micrograms per cubic meter
km = Kilometer

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Checked by: SAK 1/17/08

5.4.3 NO_x Screen Model Results

The NO_x screen model results, as presented in Table 5-7 do not exceed the NO_x SIL on an annual averaging period basis; therefore a refined modeling evaluation is not required. The modeled results also did not exceed the significant monitoring concentration.

Table 5-7 NOx Screening Results

NO_x Annual Screen Results			
Year	**Maximum Concentration**	**UTM Coordinate (m)**	
-	**$\mu g/m^3$**	**East**	**North**
1987	0.59	338137	3659011
1988	0.57	338137	3659211
1989	0.65	338237	3659611
1990	0.57	338137	3659111
1991	0.56	338137	3659111
PSD Significance Level: 1 $\mu g/m^3$			

Completed by: <u>LMG 1/17/08</u>
Checked by: <u>SAK 1/17/08</u>

5.4.4 CO Screen Model Results

As shown in Table 5-8, the modeled emissions do not exceed the CO SILs on a 1-hour or 8-hour averaging period. This result indicates that no further modeling is required. The significant monitoring concentration was also not exceeded; therefore, preconstruction monitoring is not required for CO.

Table 5-8 CO Screening Results

CO 1-Hour Screen Results			
	Maximum Concentration	UTM Coordinate (m)	
Year	μg/m^3	East	North
1987	124.2	337937	3661211
1988	127.2	335337	3662311
1989	113.3	338037	3662011
1990	105.1	337437	3662711
1991	97.1	337037	3662211
PSD Significance Level: 2,000 μg/m^3			
CO 8-Hour Screen Results			
	Maximum Concentration	UTM Coordinate (m)	
Year	μg/m^3	East	North
1987	27.6	336137	3659011
1988	32.2	338037	3659611
1989	35.5	338037	3659711
1990	32.5	337937	3659411
1991	30.1	337437	3658911
PSD Significance Level: 500 μg/m^3			

Completed by: LMG 1/17/08
Checked by: SAK 1/17/08

5.4.5 SO_2 Screen Model Results

The SO_2 screen model results, as presented in Table 5-9, exceed the SO_2 SILs for all averaging periods; therefore, a refined modeling analysis is required. The modeled results do not exceed the significant monitoring concentration.

Table 5-9 SO_2 Screening Results

Year of Model Run	Maximum Concentration (µg/m³)	Location of Receptors (UTM) X	Location of Receptors (UTM) Y	Area of Impact Radius (km)
3-hour Averaging Period				
1987	31.17	337737	3659111	1.85
1988	28.44	338037	3659711	1.33
1989	32.53	338037	3659711	1.47
1990	31.35	337837	3659311	1.47
1991	30.41	336537	3658911	1.45
Significant Impact Level: 25 µg/m³				Max.: 1.85
24-hour Averaging Period				
1987	11.23	338337	3658911	5.38
1988	10.66	338137	3659611	4.01
1989	11.08	338037	3659611	4.98
1990	10.63	337937	3659411	4.89
1991	10.88	338637	3659411	4.96
Significant Impact Level: 5 µg/m³				Max: 5.38
Significant Monitoring Concentration: 13 µg/m³				
Annual Averaging Period				
1987	1.06	338137	3659011	1.60
1988	1.03	338137	3659211	1.39
1989	1.17	338237	3659611	1.65
1990	1.02	338137	3659111	1.35
1991	1.01	338137	3659111	1.35
Significant Impact Level: 1 µg/m³				Max.: 1.65

km = Kilometer

Completed by: LMG 1/17/08
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5.4.6 Hydrogen Fluoride Screen Model Results

The HF screen model results, as presented in Table 5-10, did not exceed the HF significant monitoring concentration on a 24-hour averaging period basis.

Table 5-10 HF Screening Results

24-Hour Averaging Period			
Year of Model Run	**Maximum Concentration (μg/m³)**	**Location of Receptors (UTM)**	
		X	**Y**
1987	0.02775	338337	3658911
1988	0.02633	338137	3659611
1989	0.02737	338037	3659611
1990	0.02625	337937	3659411
1991	0.02688	338637	3659411
Significant Monitoring Concentration: 0.25 μg/m³			

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5.4.7 Lead Screen Model Results

The Pb screen model results, as presented in Table 5-11, did not exceed the Pb significant monitoring concentration on a quarterly averaging period basis.

Table 5-11 Pb Screening Results

Calendar Quarter Averaging Period[1]			
Year of Model Run	**Maximum Concentration (μg/m³)**	**Location of Receptors (UTM)**	
		X	**Y**
1987	0.00189	337937	3661211
1988	0.00194	335337	3662311
1989	0.00173	338037	3662011
1990	0.00160	337437	3662711
1991	0.00148	337037	3662211
Significant Monitoring Concentration: 0.10 μg/m³			

1. Multiplied the 1-hr average result by 0.27 to convert to Calendar Quarter Average per USEPA "A Screening Procedure for the impacts of Air Pollution Sources on Plants, Soils, and Animals" (EPA/2-81-078 December 1980)

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5.4.8 Alternative Modeling Evaluations

The primary goal of the above modeling evaluation was to demonstrate that the proposed plant will achieve compliance with all air quality standards during worst case operational conditions, which will occur during the majority of the time. Two additional operational modes (reduced load operation and startup operation) were evaluated for their potential impacts on air quality. The results from these evaluations are discussed in detail below.

5.4.8.1 Reduced Load Operational Evaluation

The proposed plant will at times operate at reduced loads (estimated at 40% production capacity) during the shoulder months (typically during spring and fall when power demands are below peak levels). The screen models were therefore rerun at this reduced operational load to evaluate the impact on air quality. The process (boiler/turbine) is less efficient at this reduced power production load. To produce 40% power the boiler will have to operate at approximately 50% fuel firing rate. This means that emissions and air flow rate from the main boiler stack will be at 50% of the previously modeled levels. The plant will continue to meet all its emission limits on a lb/MMBtu basis during this reduced loading period. Table 5-12 below summarizes the results of this modeling analysis. The results from this analysis found that the maximum impacts for all pollutants are below the significant impact levels, except for SO_2, for which a refined modeling analysis was completed.

Table 5-12 40% Load and Startup Model Modeling Results

Pollutant	Avg. Period	Significant Impact Level (µg/m^3)	40% Operational Load Mode (µg/m^3)	Startup Mode (µg/m^3)
$PM_{2.5}$	24-hr	1.20	0.91	1.18
$PM_{2.5}$	Annual	0.30	0.19	0.195
PM_{10}	24-hr	5	4.46	4.53
PM_{10}	Annual	1	0.72	0.73
SO_2	3-hr	25	25.68	32.98
SO_2	24-hr	5	8.76	12.79
SO_2	Annual	1	1.30	1.54
CO	8-hr	500	53.82	81.09
CO	1-hr	2,000	80.15	369.55
NOx	Annual	1	0.54	0.78

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5.4.8.2 Startup Modeling Results

In addition to the 40% load conditions a modeling evaluation was also completed for the startup/shutdown conditions. All pollution control equipment will be operated during the startup of the boiler except for the SCR system. The SCR is ineffective below a certain temperature (approx. 450 degrees F) and therefore would not reduce NO_x if operated. The injection of ammonia into the flue gas during cold conditions can result in the corrosion of the downstream pollution control equipment. For this reason, the SCR will not be operating at maximum capacity until the startup process is complete. The NO_x emissions during the startup will therefore have the potential to be greater than that at normal 100 percent load conditions for brief periods of time. CO emissions from the boiler will also be greater than their maximum 100 percent capacity levels for brief periods during the startup period as the unit achieves stable combustion.

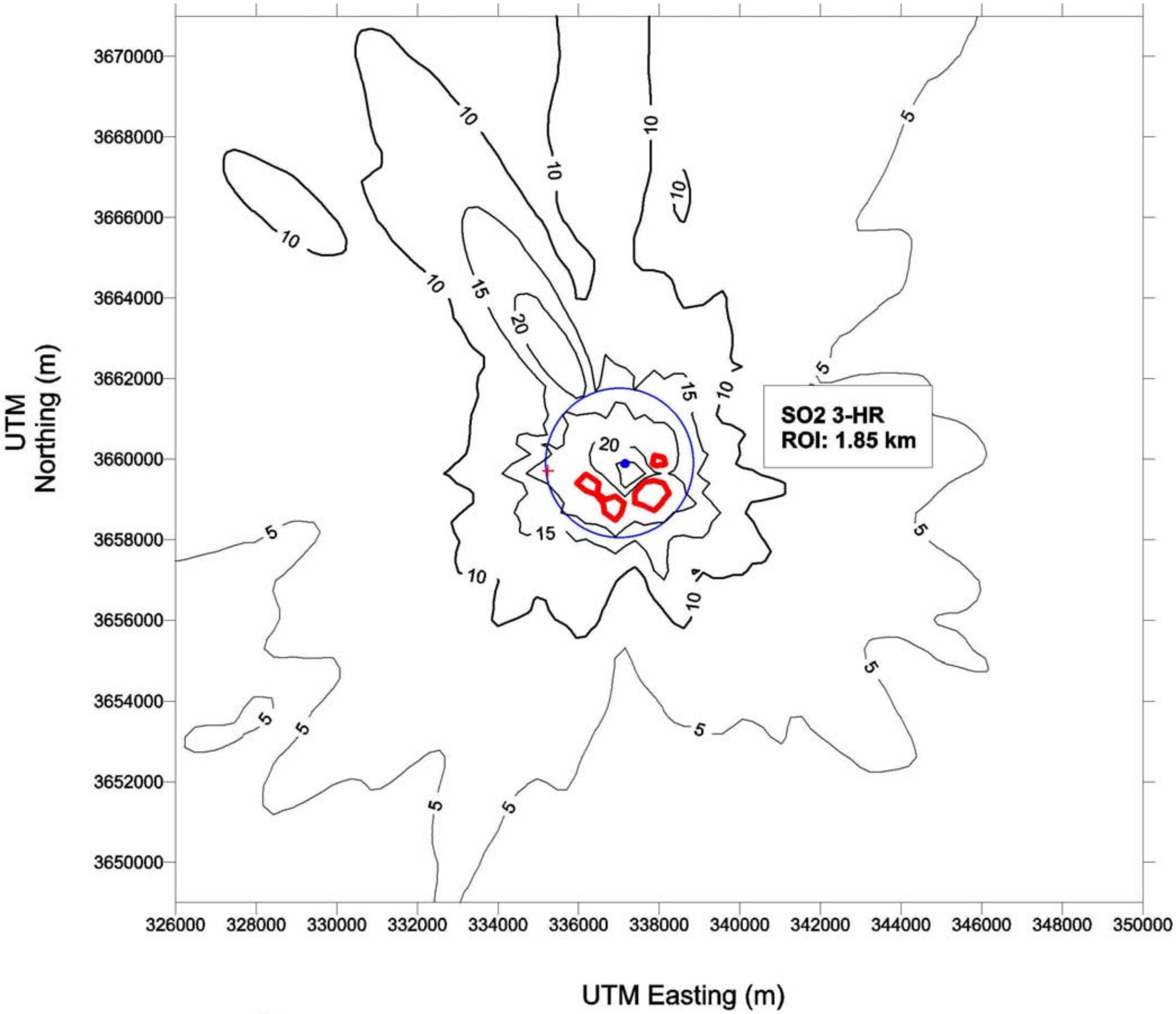
In addition the auxiliary boiler will be operated during both startup and shutdown of the main boiler. The primary purpose of the auxiliary boiler operation is to provide steam to the turbine during the startup and shutdown periods so as to prevent damage to the unit, which could be caused by large swings in steam loading to the turbine. The startup mode modeling included the operation of the auxiliary boiler at maximum firing rate 876 hr/yr (the maximum expected hours of operation) and includes 10 cold startups of the main boiler per year (an expected typical value for the boiler). The AERMOD model allows for the input of variable hourly emission rates for a given pollutant. A variable emission rate file was developed for all modeled pollutants from the main and auxiliary boilers with the above identified operational conditions.

5.5 SIGNIFICANT IMPACT AREA DETERMINATION AND DETERMINATION OF OFF-SITE EMISSIONS DATA FOR REFINED SO2 MODELING

The Area of Impact (AOI) was determined to be a circular area with the radius extending from the center of Plant Washington to the farthest point that exceeds the applicable SIL as predicted by the screen model. Refined modeling is required for all receptors within the AOI. Five years of meteorological data were used to determine the worst-case AOI for SO_2 and each averaging period. Figures 5-5 through 5-7 show the analysis output for each pollutant's averaging period for the corresponding worst-case years (largest AOI).

USEPA guidance states that 50 kilometers must be added to the impact radius to complete the off-site emission source retrieval. A list of sources emitting SO_2 within 56 kilometers of the proposed site was requested from GA EPD to determine the off-site sources that would required to be included in the modeling. GA EPD provided spreadsheets that identified all sources within the SIA, along with their corresponding emission rates and stack parameters. These spreadsheets also identified the sources' status as "PSD increment consuming," or "PSD increment expander" for increment-modeling purposes. The PSD-increment-consuming sources were modeled as positive emission rates and the PSD-expanding sources were modeled as negative emission rates for the PSD increment models. For the purposes of completing the NAAQS modeling, the Georgia EPD provided the 2005 emission inventory database. All sources of SO_2 emissions in the database that are within 56 km of the proposed site were included in the modeling evaluation. The stack parameters from the database were used in the modeling analysis. The emission rates were, however, based on a review of each plant's Title V permit applications and Title V permits. This data review was completed to determine the allowable SO_2 emissions rate for each source being modeled. All NAAQS models included the increment consumers. Exhibit C provides the modeled data for all off site sources included in the refined SO_2 modeling.

Figure 5-5 Significant Impact Area: 1987 SO_2 Screening Results, 3-hour



Key:

+ Farthest receptor above the 3-hr average significant impact level (25 µg/m3).

SO2 Concentration Contours

Main Stack

25 µg/m3 SO2 Concentration Contour

ROI: Radius Of Impact, the distance from the center of the facility to the furthest point exceeding the significant impact level.

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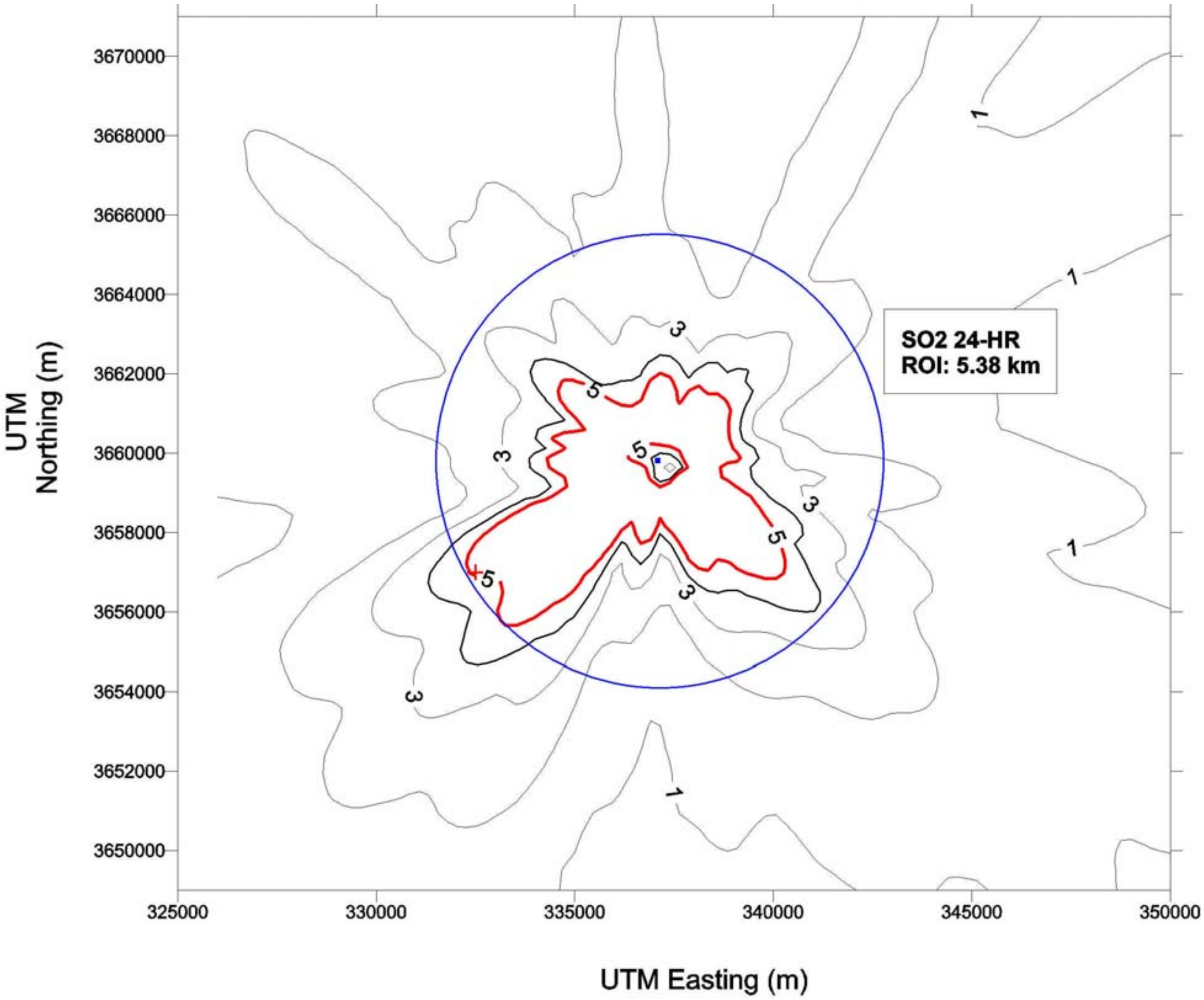
Figure 5-6 Significant Impact Analysis: 1987 SO_2 Screening Results, 24-hour



Key:

\+ Farthest receptor above the 24-hr average significant impact level (5 µg/m3).

SO2 Concentration Contours
Main Stack
5 µg/m3 SO2 Concentration Contour

ROI: Radius Of Impact, the distance from the center of the facility to the furthest point exceeding the significant impact level.

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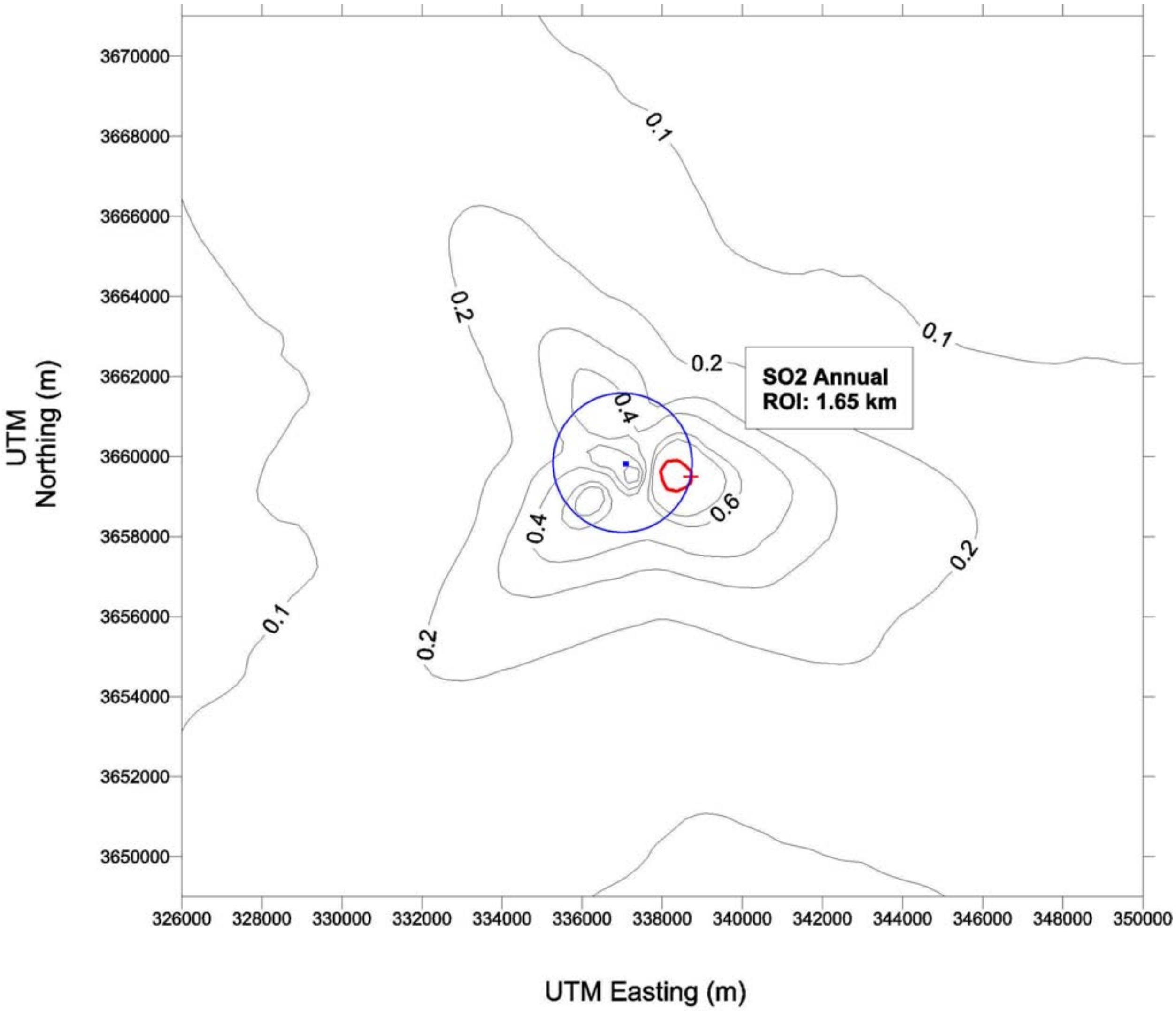
Figure 5-7 Significant Impact Area: 1989 SO_2 Screening Results, Annual



Key:

+ Farthest receptor above the annual average significant impact level (1 µg/m3).

SO2 Concentration Contours

Main Stack

1 µg/m3 SO2 Concentration Contour

ROI: Radius Of Impact, the distance from the center of the facility to the furthest point exceeding the significant impact level.

Completed by: LMG 1/17/08
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5.6 REFINED MODELING ANALYSIS

Refined modeling was required for SO_2 based on the screen model results; therefore, modeling was performed to demonstrate compliance with the PSD increment and NAAQS standards, which are listed in Table 5-13. A background ambient concentration was obtained to determine compliance with the NAAQS standards for SO_2. This background concentration must be added to the NAAQS modeling results before a comparison to the standards can be made. The same meteorological data and receptor data used for the screen modeling was used for the refined modeling.

Table 5-13 Background, MAAQS, and PSD Increment Standards

Pollutant	Averaging Period	Background Concentration ($\mu g/m^3$)[1]	NAAQS ($\mu g/m^3$)	PSD Increment Standard ($\mu g/m^3$)
SO_2	3-hour	187	1,300	512
	24-hour	41	365	91
	Annual	8	80	20

$\mu g/m^3$ = micrograms per cubic meter

1. As provided by Georgia EPD

Completed by: LMG 1/17/08
Checked by: SAK 1/17/08

5.7 NATIONAL AMBIENT AIR QUALITY STANDARD MODELING RESULTS

The high-second-high NAAQS concentration was used for the SO_2 24-hour and 3-hour averaging periods. The high-second-high concentration is the highest of the second high results from each of the five years of modeled meteorological data. The highest-second-high concentration will be the output for all receptors, and these data will be used for comparison to the standard. For the annual standards, each year of meteorological data was modeled and the highest value from all five models was compared to the annual standard. The NAAQS modeling included all proposed emission sources at their maximum hourly emission rates, as well as the off-site sources that are within the AOI. The refined SO_2 modeling (NAAQS and PSD Increment) included only those receptors that were within the largest calculated SIA for SO_2.

Table 5-14 presents the results for SO_2 and demonstrates compliance with the 3-hr, 24-hr, and annual standards. If the maximum result from all five years of models for each averaging period was located at a receptor which was not in the 100 meter spacing area, four additional receptors at 100 meter spacing were added around the maximum in order to ensure that the real maximum had been identified. The maximum result from all five of these receptors (the original plus the four additional receptors) is reported in the table.

Table 5-14 SO_2 NAAQS Modeling Summary

SO_2 3-Hour Screen Results			
Year	**Maximum Concentration**	**UTM Coordinate (m)**	
-	**μg/m^3**	**East**	**North**
1987	71.0	333000	3663500
1988	88.3	334000	3655000
1989	93.6	334000	3655000
1990	73.1	338137	3659611
1991	74.4	332000	3662500
Maximum Concentration: 93.6 μg/m^3			
Background Concentration: 187 μg/m^3			
Combined Concentration: 280.6 μg/m^3			
NAAQS Level: 1,300 μg/m^3			
SO_2 24-Hour Screen Results			
Year	**Maximum Concentration**	**UTM Coordinate (m)**	
-	**μg/m^3**	**East**	**North**
1987	22.6	337837	3659111
1988	26.4	334500	3664500
1989	24.4	338137	3659711
1990	25.9	338137	3659111
1991	22.8	338237	3659311
Maximum Concentration: 26.4 μg/m^3			
Background Concentration: 41 μg/m^3			
Combined Concentration: 67.4 μg/m^3			
NAAQS Level: 365 μg/m^3			
SO_2 Annual Screen Results			
Year	**Maximum Concentration**	**UTM Coordinate (m)**	
-	**μg/m^3**	**East**	**North**
1987	4.0	338037	3659011
1988	4.6	336037	3659111
1989	5.1	338137	3659611
1990	4.1	336137	3659111
1991	4.2	336137	365911
Maximum Concentration: 5.1 μg/m^3			
Background Concentration: 8 μg/m^3			
Combined Concentration: 13.1 μg/m^3			
NAAQS Level: 80 μg/m^3			

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Checked by: SAK 1/17/08

5.8 PSD INCREMENT MODELING RESULTS

PSD increment modeling was completed in addition to NAAQS modeling. One goal of the PSD increment modeling is to determine the increase in ground-level concentrations of SO_2 since its established baseline date (1975). Another goal is to determine whether the increases exceed the allowable PSD increments for the corresponding pollutants. The proposed power plant is a green-field facility; therefore, all emission sources are new and consume PSD increment.

The PSD increment model also includes off-site emission sources, which are increment consumers or expanders. As discussed previously, the Georgia sources were identified as consumers or expanders in the spreadsheets provided by GA EPD. The consumers were modeled as positive sources, while the expanders were modeled as negative sources. The receptor grid and meteorological data used for the NAAQS modeling were used for the PSD increment consumption modeling. The refined SO_2 modeling (NAAQS and PSD Increment) included only those receptors that were within the largest calculated SIA for SO_2.

Table 5-15 compares the highest modeling results for the annual averaging period and the highest second high for the 3-hour and 24-hour to the PSD SO_2 increment standards. Compliance with all standards is demonstrated.

Table 5-15 SO_2 PSD Increment Modeling Summary

PSD INCREMENT			
SO_2 3-Hour Screen Results			
County	**Maximum Concentration**	**UTM Coordinate (m)**	
-	**$\mu g/m^3$**	**East**	**North**
1987	27.88	336937	3658811
1988	28.26	338137	3659711
1989	32.51	337937	3659711
1990	30.26	338037	3659511
1991	28.64	337437	3658811
PSD Increment Level: 32.51 $\mu g/m^3$			
SO_2 3-hour PSD Increment Standard: 512 $\mu g/m^3$			
SO_2 24-Hour Screen Results			
Year	**Maximum Concentration**	**UTM Coordinate (m)**	
-	**$\mu g/m^3$**	**East**	**North**
1987	9.95	338337	3658811
1988	10.71	338237	3659611
1989	11.17	338137	3659611
1990	10.41	338137	3659411
1991	10.23	337837	3659111
PSD Increment Level: 11.17 $\mu g/m^3$			
SO_2 24-hour PSD Increment Standard: 91 $\mu g/m^3$			
SO_2 Annual Screen Results			
Year	**Maximum Concentration**	**UTM Coordinate (m)**	
-	**$\mu g/m^3$**	**East**	**North**
1987	1.34	338137	3659011
1988	1.27	338137	3659211
1989	1.41	338237	3659611
1990	1.25	338137	3659111
1991	1.25	338137	3659111
PSD Increment Level: 1.41 $\mu g/m^3$			
SO_2 Annual PSD Increment Standard: 20 $\mu g/m^3$			

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