Derenzo and Associates, Inc.
Environmental Consultants

August 10, 2006

Mr. Syed Arif, P.E.
Bureau of Air Regulation
Division of Air Resource Management
Department of Environmental Protection
STATE OF FLORIDA
2600 Blair Stone Road, MS 5505
Tallahassee, FL 32399-2400

Subject: Seminole Energy, L.L.C.
DEP File No. 1170084-005-AC (PSD-FL-376)
Response to July 13, 2006 request for information

Dear Mr. Arif:

Derenzo and Associates, Inc. (Derenzo and Associates), on behalf of Seminole Energy, L.L.C (Seminole Energy), is submitting to the Florida Department of Environmental Protection, Division of Air Resource Management (FDEP-DARM) information that was requested by the regulatory agency (USEPA Region 4) on July 13, 2006.

Attachment A provides for reference the July 13, FDEP-DARM communication.

Item 1 – CAT 3520 PM_{10} Emissions

The CAT 3520C gas IC engine PM_{10} emission limit specified for the Bio Energy Texas LFG fueled electricity generation facility is 0.148 g/bhp-hr, which is based on E rated emission factors presented in Table 2.4-5 of *Compilation of Air Pollutant Emission Factors Volume I: Stationary Point and Area Sources, Fifth Edition* (USEPA AP-42).

Seminole Energy has submitted permit application data to the FDEP-DARM for its proposed electricity generation facility that indicate and justify that BACT for PM_{10} emitted from LFG fueled engines (CAT 3520C) is 0.24 g/bhp-hr. This value is supported by data on LFG fueled IC engines that are presented in the USEPA RBL Clearinghouse for LFG fueled IC engines (i.e., permitted PM_{10} emissions rates that range from 0.04 to 0.34 g/bhp-hr).

Information previously submitted to the FDEP-DARM states that:

Operational experience obtained by Caterpillar, Inc. and users of its LFG fueled IC engines (Landfill Energy Systems the parent company of Seminole Energy) *indicates that PM-10 emissions for LFG fueled IC engines are dependent on engine operating hours. While PM-10 emissions from the operation of new LFG fueled IC engines have been initially tested to be* *very low (i.e., <0.06 g/bhp-hr) subsequent measurements on the same equipment that are representative of increased engine operating hours indicate the presence of higher emission levels. The increased PM-10 emissions (from new engine operating conditions) has been attributed to particulate contributions from crankcase lubrication oil aerosols, which is the result of normal wear on piston rings and seals (i.e., not additional particulate contributions from the source of the LFG fuel).*

Landfill Energy Systems representatives recorded in 2001 and 2002 the average daily crankcase oil consumption for CAT 3616 gas IC engines operated on LFG. These data indicate that the average amount of oil consumed per day during each of the recorded months ranged from a low of approximately 2 gallons to a high of approximately 18 gallons.

The PM_{10} emission limit for these CAT 3616 gas IC engines (which have a 4,230 bhp-hr rating compared to 2,227 bhp-hr for the CAT 3520) was initially set at a value of approximately 0.06 g/bhp-hr. This value was obtained from the results of initial compliance tests performed on new identical engines operated at another landfill (and thought to be appropriate based on available engine operating information).

Particulate (PM_{10}) emission tests that were performed on these CAT 3616 engines during the 2000 to 2002 operating period indicate that the results of the initial 2000 compliance tests (that reflect new engine operations) varied from results of subsequent compliance tests (over the three year period) by a maximum value of approximate 300 % (300% difference in the highest single engine three test average observed in 2000 compared to the same measurements in 2001 and 2002). The highest PM_{10} emission rate that was measured during the three year period was 0.1721 g/bhp-hr (which serves as the basis of the requested 0.24 g/bhp-hr limit, 0.1721 g/bhp-hr with a 40% upper limit uncertainty factor).

Caterpillar does not provide particulate emission guarantees for the CAT 3616 gas IC engine (which was introduced to the LFG energy development market in the mid 1990s or the CAT 3520C gas IC engine (which was introduced in 2005, ordering allowed in early 2005 for delivery in late 2005). Therefore, actual LFG fueled engine operational and emission compliance experience serve as the best source of information (as presented in the preceding text) to establish appropriate particulate emission limits that can be achieved over all fuel quality and engine operating conditions.

The fact that the Bio Energy Texas LFG fueled electricity generation facility has been permitted with a PM_{10} emission limit of 0.148 g/bhp-hr and may have demonstrated compliance with this limit during an initial single compliance test does not imply (or guarantee) that the limit can be achieved over all fuel quality and engine operating conditions. The engine may have been successfully operated to initially demonstrate compliance with the specified particulate emission limit; however, no data are available to demonstrate that the 0.148 g/bhp-hr limit can be maintained over the 20 year operating life of the equipment.

The information presented in the preceding text summarizes the data that have been assembled by Seminole Energy and serve as a basis for the use of a 0.24 g/bhp-hr PM_{10} emission limit instead of the 0.148 g/bhp-hr limit.

Item 2 – CAT 3520 HCl Emissions

Landfill Energy Systems has been issued a PSD permit for new CAT 3520 gas IC engines that will be operated in the State of New Jersey (Ocean County Landfill). This permit approval utilized the results of site specific landfill gas composition test results (multiple tests), which were supplemented with USEPA AP-42 data, and resulted in a HCl engine emission factor of 3.64 pounds per million cubic feet of gas burned (lb./MMcf).

Landfill Energy Systems performed compliance tests (in March 2006) on landfill gas that is used to fuel engines operated in the State of Michigan (Pine Tree Acres landfill). These analytical measurements resulted in a HCl engine emission factor of 2.68 lb./MMcf.

No landfill gas composition data are available from the Osceola Road Solid Waste Management Facility. Therefore, the USEPA AP-42 default data were used to calculate a lb./MMscf HCl emission factor for the proposed engine operations, which results in a HCl engine emission factor of 11.95 lb./MMcf.

Based on variables in gas composition characteristics (primarily individual chemical concentrations) that exist between landfills (and geographic regions of the country), it is not possible to provide a correlation (that ensures and maintains ongoing compliance) between HCl emission factors based on actual site measurements and that which might exist at the Osceola Road Solid Waste Management Facility. Therefore, Seminole Energy has requested that its engine operations be limited to HCl emissions that are less than 10 TPY.

Trail Ridge Energy, a sister company of Seminole Energy, provided information to the FDEP-DARM on April 10, 2006 that indicates compliance with a 10 TPY HCl facility emission limit can be demonstrated annually through the collection and analysis of samples of the landfill gas used to fuel the IC engines. The HCl emission factor developed from the LFG analyzes (pounds of HCl per million cubic feet LFG fuel combustion) times the annual totalized measurement of treated gas (fuel) flow to the facility (million cubic feet of gas) will result in the actual amount of HCl emitted by the IC engine operations.

Attachment B provides the New Jersey and Michigan landfill gas HCl analyses.

Item 3 – CAT 3520 SO_2 Emissions

Landfill Energy Systems has been issued a PSD permit for new CAT 3520 gas IC engines that will be operated in the State of New Jersey (Ocean County Landfill). This permit approval utilized the results of site specific landfill gas composition test results (multiple tests that include a maximum 180 ppmv H_2S concentration), which were supplemented with USEPA AP-42 data, and resulted in a SO_2 engine emission factor of 32.19 lb./MMcf.

No landfill gas (sulfur) composition data are available from the Osceola Road Solid Waste Management Facility.

The USEPA AP-42 default data (which includes a 35.5 ppmv H_2S concentration) result in a lb./MMscf SO_2 emission factor for the proposed engine operations of 8.46 lb./MMcf.

The USEPA AP-42 default data and a 164.2 ppmv H_2S concentration (which is based on an average value calculated from multiple sets of test data) were used to calculate a lb./MMscf HCl emission factor for the proposed engine operations, which results in a SO_2 engine emission factor of 27.5 lb./MMcf.

Seminole Energy plans to demonstrate compliance with short and long term SO_2 emission limits through the collection and analysis (semi annually) of samples of the landfill gas used to fuel the IC engines. The SO_2 emission factor developed from the landfill gas analyzes (pounds of SO_2 per million cubic feet LFG fuel combustion) times the short and long term (annual) totalized measurement of treated gas (fuel) flow to the facility (million cubic feet of gas) will result in the actual amount of SO_2 emitted by the IC engine operations.

Attachment C provides the New Jersey landfill and AP-42 sulfur content analyses and SO_2 emission factor calculations.

Seminole Energy appreciates the consideration of the FDEP-DARM of the information that is presented in this document.

Please contact us if you have questions or require additional information.

Sincerely,

DERENZO AND ASSOCIATES, INC.

David R. Derenzo
Services Director

c: Bill Owen, Landfill Energy Systems
Scott Salisbury, Landfill Energy Systems
D. Nelson
J. Koylow, CD
B. Worley, EPA
G. Bunyak, NPS

ATTACHMENT A

July 13, 2006 FDEP-DARM Communication

Department of Environmental Protection

RECEIVED JUL 20 2006

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

July 13, 2006

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Scott Salisbury
Seminole Energy, L.L.C.
29261 Wall Street
Wixom, Michigan 48393

Re: DEP File No. 1170084-005-AC (PSD-FL-376)
Seminole Energy – Installation of six (6) reciprocating internal combustion engines

Dear Mr. Salisbury:

Enclosed are comments submitted by the Environmental Protection Agency (EPA), Region 4, in regards to the completeness issues for this project. Please submit the information as requested by EPA to the Department's Bureau of Air Regulation. We are still awaiting comments from U.S. Fish and Wildlife Service, which will be forwarded to you if we receive them.

The Department will resume processing this application after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. A new certification statement by the authorized representative or responsible official must accompany any material changes to the application. Rule 62-4.055(1), F.A.C. now requires applicants to respond to requests for information within 90 days.

If you have any questions regarding this matter, please call Mr. Syed Arif, P.E. at 850/921-9528 or Mr. James Purvis of EPA at 404/562-9139.

Sincerely,

Syed Arif

Syed Arif, P.E.
Bureau of Air Regulation

/sa

Enclosure

cc: G. Worley, EPA Region 4
J. Bunyak, NPS
L. Kozlov, DEP-CD
J. Pope, P.E., Clayton Group Services, Inc.

Arif, Syed

From: Purvis.James@epamail.epa.gov
Sent: Wednesday, July 12, 2006 12:08 PM
To: Arif, Syed
Cc: Little.James@epamail.epa.gov; Forney.Kathleen@epamail.epa.gov; Worley.Gregg@epamail.epa.gov
Subject: Seminole Electric LFG project

- Can the source owner provide data supporting the claim that the source can not meet a lower particulate emission rate such as the one taken and operated successfully at Bio Energy Texas utilizing the same ICs?

- The source owner has used AP-42 emission factors to estimate PTE of HCl from the project and found that potential to be 10.9 TPY HCl.
However, the source owner states its parent company, Landfill Energy Systems has historical or test data available that shows the use of AP-42 factors largely overestimates actual expected emissions. Does the source owner have available supporting data that could correlate emissions from these mentioned facilities and the site for the proposed project? Please explain the approach taken. If use of AP-42 factors is preferred by the source, an operating restriction to limit emissions to 10 TPY HCl is necessary to ensure enforcibility of this condition.

- The source has used AP-42 emission factors to estimate sulfur content of LFG onsite but references findings from parent company sulfur content analysis being available. Can the source owner perform sulfur analysis of LFG onsite? Can the source owner explain how it anticipates showing compliance?

James D Purvis
Environmental Engineer
EPA Region IV
Air, Pesticides & Toxics Management Division - Air Permitting Section

ATTACHMENT B

New Jersey and Michigan Landfill Gas HCl Analyses

Combined List of Potential LFG Constituents
Ocean County Landfill Measurements and AP-42 Default Concentrations

LFG Constituent	Concentration[1] (ppmv)	Origin
1,1,1-trichloroethane	0.1	7/21/04 measurement
1,1,2,2-tetrachloroethane	1.11	AP-42
1,1-dichloroethane	0.25	7/21/04 measurement
1,1-dichloroethene	0.2	AP-42
1,2,4-trimethylbenzene	2.2	9/14/04 measurement
1,2-dichloroethane	0.41	AP-42
1,2-dichloropropane	0.18	AP-42
1,3,5-trimethylbenzene	0.92	9/14/04 measurement
1,4-dichlorobenzene	0.82	9/14/04 measurement
2,2,4-trimethylepentane	1.0	9/14/04 measurement
2-propanol (isopropyl alcohol)	1.0	7/21/04 measurement
4-ethyltoluene	1.1	7/21/04 measurement
Acetone	1.07	7/24/03 measurement
Acrylonitrile	6.33	AP-42
Benzene	0.94	9/14/04 measurement
Bromodichloromethane	3.13	AP-42
Butane	5.03	AP-42
Carbon disulfide	0.136	7/24/03 measurement
Carbon monoxide	141.0	AP-42
Carbon tetrachloride	0.004	AP-42
Carbonyl sulfide	0.49	AP-42
Chlorobenzene	0.3	9/14/04 measurement
Chlorodifluoromethane	1.3	AP-42
Chloroethane (ethyl chloride)	0.338	7/24/03 measurement
Chloroform (trichloromethane)	0.03	AP-42
Chloromethane (methyl chloride)	0.26	7/21/04 measurement
cis-1,2 Dichloroethene	0.4	9/14/04 measurement
Cyclohexane	3.2	9/14/04 measurement
Dichlorobenzene	0.21	AP-42
Dichlorodifluoromethane	1.6	9/14/04 measurement
Dichlorofluoromethane	2.62	AP-42
Dichloromethane (methylene chloride)	0.56	9/14/04 measurement
Ethane	889	AP-42
Ethanol	11.0	7/21/04 measurement
Ethyl Acetate	1.8	9/14/04 measurement
Ethylene dibromide	0.001	AP-42
Ethyl mercaptan	2.28	AP-42
Ethylbenzene	6.3	9/14/04 measurement
Fluorotrichloromethane (Freon 11)	0.3	9/14/04 measurement
Freon 113	0.055	7/21/04 measurement
Freon 114	0.12	7/21/04 measurement

Notes

1 Highest site measurement (Appendix D-1) or where no site measurement data exist AP-42 default concentration, which is provided at the end of this Appendix

Appendix D-1 is not provided in this communication

Combined List of Potential LFG Constituents
Ocean County Landfill Measurements and AP-42 Default Concentrations

LFG Constituent	Concentration[1] (ppmv)	Origin
Heptane	3.7	9/14/04 measurement
Hexane	3.4	9/14/04 measurement
Hydrogen sulfide	180	7/24/03 measurements
Mercury	0.000292	AP-42
Methyl Ethyl Ketone (MEK)	1.9	9/14/04 measurement
Methyl Isobutyl Ketone (MIBK)	0.3	9/14/04 measurement
Methyl mercaptan	2.49	AP-42
Methyl tert-butyl ether (MTBE)	1.4	9/14/04 measurement
Pentane	3.29	AP-42
Perchloroethylene (tetrachloroethylene)	0.43	9/14/04 measurement
Propane	11.1	AP-42
Propylbenzene	0.26	7/21/04 measurement
Propylene	9.6	9/14/04 measurement
Styrene	0.45	9/14/04 measurement
t-1,2-dichloroethene	2.84	AP-42
Toluene	12.0	9/14/04 measurement
Tretrahydrofuran	4.0	9/14/04 measurement
Trichloroethylene (trichloroethene)	0.2	7/21/04 measurement
Trimethylbenzenes	1.25	7/21/04 measurement
Vinyl chloride	1.5	9/14/04 measurement
Xylene (m)	7.0	9/14/04 measurement
Xylene (o)	2.7	9/14/04 measurement
Xylene (o,m,p)	7.3	7/21/04 measurement
Xylene (p)	2.3	9/14/04 measurement
Xylene (p,m)	0.918	7/24/03 measurement

Notes

1 Highest site measurement (Appendix D-1) or where no site measurement data exist AP-42 default concentration, which is provided at the end of this Appendix

Appendix D-1 is not provided in this communication

LFG Combustion Hydrogen Chloride Emission Factor (Ocean County Landfill)

Influent Chlorine Compounds	Landfill Gas Concentration[1] (ppm)	Molecular Formula	No. Chlorine Atoms	HCl Emission Factor (lb./MMcf)
1,1,1-trichloroethane	0.1	$C_2H_3Cl_3$	3	0.03 [a,c]
1,1,2,2-tetra chloroethane	1.11	$C_2H_2Cl_4$	4	0.42 [b]
1,1-dichloroethane	0.25	$C_2H_4Cl_2$	2	0.05 [c]
1,1-dichloroethene	0.2	$C_2H_2Cl_2$	2	0.04 [b]
1,2-dichloroethane	0.41	$C_2H_4Cl_2$	2	0.08 [b]
1,2-dichloropropane	0.18	$C_3H_6Cl_2$	2	0.03 [b]
1,4-dichlorobenzene	0.82	$C_6H_4Cl_2$	2	0.15 [c]
Bromodichloromethane	3.13	$CBrCl_2$	2	0.59 [b]
Carbon tetrachloride	0.004	CCl_4	4	0.00 [b]
Chlorobenzene	0.3	C_6H_5Cl	1	0.03 [c]
Chlorodifluoromethane	1.3	CHFCl	1	0.12 [b]
Chloroethane	0.338	C_2H_5Cl	1	0.03 [c]
Chloroform	0.03	$CHCl_3$	3	0.01 [b]
Chloromethane	0.26	CH_3Cl	1	0.02 [c]
Dichlorobenzene	0.21	$C_6H_4Cl_2$	2	0.04 [b]
c-1,2-dichloroethene	0.4	$C_2H_2Cl_2$	2	0.08 [c]
Dichlorodifluoromethane	1.6	CF_2Cl_2	2	0.30 [c]
Dichlorofluoromethane	2.62	$CHFCl_2$	2	0.49 [b]
Dichloromethane	0.56	CH_2Cl_2	2	0.11 [c]
Fluorotrichloromethane	0.3	$CFCl_3$	3	0.08 [c]
Freon 113	0.055	$C_2F_3Cl_3$	3	0.02 [c]
Freon 114	0.12	$C_2F_4Cl_2$	2	0.02 [c]
Perchloroethylene	0.43	C_2Cl_4	4	0.16 [c]
Trichloroethylene	0.2	C_2HCl_3	3	0.06 [c]
t-1,2-dichloroethane	2.84	$C_2H_2Cl_2$	2	0.54 [b]
Vinyl chloride	1.5	C_2HCl	1	0.14 [c]
Total hydrogen chloride emission factor (lb./MMcf)				**3.64**

Notes

1. From the data presented in Table F-5. (which is the preceding table in this attachement)

a. Assumes complete conversion of chloride to HCl, calculation for 1,1,1-trichloroethane (TCE):
(0.1 ft^3 TCE/MMcf LFG) (3 mol HCl/mol TCE) (36.46 lb. HCl/mol) / (387 ft^3/mol)
= 0.03 lb. HCl/MMcf LFG

b. Based on AP-42 default concentrations, which are provided at the end of this Appendix.

c. Based on results of measured (Appendix D) LFG concentrations. Appendix D is not provided is this communication)

Table 1
Calculation of HCl Emission Factor
Based on Influent Landfill Gas Chlorinated Compounds
to the
Internal Combustion Engines
at the
Sumpter Energy Associates, Inc., Pine Tree Acres Landfill, Inc. Facility
Lenox, Michigan

Test Date(s): March 7, 2006
Derenzo Project No.: 0601013

Influent Chlorinated Compounds	CAS Number	Limit of Detection (ppbv)	Concentration (ppbv)	Concentration (ppm)	Molecular Formula	No. Chlorine Atoms	Resulting HCl emission factor (lb/MMscf)[a]
1,1,1-trichloroethane	71-55-6	8.3	44	0.04	$C_2H_3Cl_3$	3	0.012
1,1,2-trichloroethane	79-00-5	8.3	ND	0.01	$C_2H_3Cl_3$	3	0.002
1,1,2,2-tetrachloroethane	79-34-5	8.3	ND	0.01	$C_2H_2Cl_4$	4	0.003
1,1-dichloroethane	75-34-3	8.3	210	0.21	$C_2H_4Cl_2$	2	0.040
1,1-dichloroethene	75-35-4	8.3	37	0.04	$C_2H_2Cl_2$	2	0.007
1,2-dichlorobenzene	95-50-1	8.3	7	0.01	$C_6H_4Cl_2$	2	0.001
1,2-dichloroethane	107-06-2	8.3	66	0.07	$C_2H_4Cl_2$	2	0.012
cis-1,2-dichloroethene	156-59-2	8.3	1,450	1.45	$C_2H_2Cl_2$	2	0.274
trans-1,2-dichloroethene	156-60-5	8.3	43	0.04	$C_2H_2Cl_2$	2	0.008
1,2-dichloropropane	78-87-5	8.3	ND	0.01	$C_3H_6Cl_2$	2	0.002
1,2,4-trichlorobenzene	120-82-1	33.5	ND	0.03	$C_6H_3Cl_3$	3	0.010
1,3-dichlorobenzene	541-73-1	8.3	ND	0.01	$C_6H_4Cl_2$	2	0.002
cis-1,3-dichloropropene	10061-01-5	8.3	ND	0.01	$C_3H_4Cl_2$	2	0.002
trans-1,3-dichloropropene	10061-02-6	8.3	ND	0.01	$C_3H_4Cl_2$	2	0.002
1,4-dichlorobenzene	106-46-7	8.3	395	0.40	$C_6H_4Cl_2$	2	0.075
Bromodichloromethane	75-27-4	8.3	ND	0.01	$CHBrCl_2$	2	0.002
Carbon tetrachloride	56-23-5	8.3	ND	0.01	CCl_4	4	0.003
Chlorobenzene	108-90-7	8.3	77	0.08	C_6H_5Cl	1	0.007
Chlorodifluoromethane	75-45-6	33.5	1,500	1.50	$CHClF_2$	1	0.142
Chloroethane	75-00-3	8.3	180	0.18	C_2H_5Cl	1	0.017
Chloroform	67-66-3	8.3	ND	0.01	$CHCl_3$	3	0.002
Chloromethane	74-87-3	33.5	62	0.06	CH_3Cl	1	0.006
alpha Chlorotoluene	100-44-7	8.3	ND	0.01	C_7H_7Cl	1	0.001
Dibromochloromethane	124-48-1	8.3	ND	0.01	$CHBr_2Cl$	1	0.001
Dichlorofluoromethane	75-43-4	33.5	650	0.65	$CHCl_2F$	2	0.123
Freon 11	75-69-4	8.3	190	0.19	CCl_3F	3	0.054
Freon 12	75-71-8	8.3	1,400	1.40	CCl_2F_2	2	0.265
Freon 113	76-13-1	8.3	21	0.02	$C_2Cl_3F_3$	3	0.006
Freon 114	76-14-2	8.3	100	0.10	$C_2Cl_2F_4$	2	0.019
Hexachlorobutadiene	87-68-3	33.5	ND	0.03	C_4Cl_6	6	0.019
Methylene Chloride	75-09-2	8.3	2,550	2.55	CH_2Cl_2	2	0.483
Tetrachloroethene	127-18-4	8.3	1,550	1.55	C_2Cl_4	4	0.587
Trichloroethene	79-01-6	8.3	955	0.96	C_2HCl_3	3	0.271
Vinyl chloride	75-01-4	8.3	2,300	2.30	C_2H_3Cl	1	0.218
Total HCl emission factor (lb/MMscf)							2.68
Total HCl emission rate (lb/hr)							0.34 [b]

Sample Calculations:

a. HCl Concentration from 1,1,1 trichloroethane (TCE):
(0.044 ft^3 TCE/MMscf LFG) * (3 mol HCl/mol TCE) * (36.460 lb. HCl/mol) / (385.3 ft^3 HCl/mol) = 0.01 lb. HCl / MMscf LFG

b. HCl emission rate (lb/hr):
(2.68 lb HCl / MMscf LFG) / (1,000,000 scf / MMscf) (2100 scf/min, avg. inlet LFG flow to engines during sampling) * (60 min/hr) = 0.34 lb HCl / hr

Note: Allowable facility wide hydrogen chloride emissions = 0.70 lb/hr

ATTACHMENT C

New Jersey Landfill
and
AP-42 Sulfur Content Analyses
and
SO_2 Emission Factor Calculations

Sulfur Dioxide Emission Factor for LFG Combustion (Ocean County Landfill)

LFG Influent Sulfur Compound	Measured Concentrations (ppmv)	EPA AP-42 Concentrations (ppmv)	Utilized Concentrations (ppmv)	Molecular Formula	No. Sulfur Atoms	Sulfur Content as H_2S (ppmv)	Resulting SO_2 Emission Rate (lb./MMcf)
Hydrogen sulfide	180.0 [A]	35.50 [B]	180.0 [A]	H_2S	1	180.0 [C]	29.93 [D]
Carbon disulfide	0.136 [A]	0.58 [B]	0.136 [A]	CS_2	2	0.3	0.09
Carbonyl sulfide	ND [A]	0.49 [B]	0.49 [B]	CSO	1	0.5	0.08
Dimethyl sulfide	ND [A]	7.82 [B]	7.82 [B]	C_2H_6S	1	7.8	1.30
Ethyl mercaptan	ND [A]	2.28 [B]	2.28 [B]	C_2H_6S	1	2.3	0.38
Methyl mercaptan	ND [A]	2.49 [B]	2.49 [B]	CH_4S	1	2.5	0.41
Total						**193.4**	**32.19** [E]

Notes

A. Results from measurements performed on samples of the Ocean County Landfill gas (Appendix D). Appendix D is not provided in this communication

B. Default concentration for LFG constituents from USEPA Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I: Stationary Point and Area Sources (AP-42), Table 2.4-1, which is provided at the end of this Appendix

C. Determined by multiplying concentration by number of sulfur atoms in the molecule.

D. Sample calculation: SO_2 generation from hydrogen sulfide (H_2S):

(180.0 scf H_2S/MMcf LFG) (1 scf SO_2/scf H_2S) (64.06 lb.SO_2/mol) / (385.3 ft^3/mol)

= 29.93 lb SO_2/MMcf LFG

E. Calculation of SO_2 emission factor from sulfur content, as H_2S:

(193.4 scf H_2S/MMcf LFG) (1 scf SO_2/scf H_2S) (64.06 lb.SO_2/mol) / (385.3 ft^3/mol)

= 32.1 lb SO_2/MMcf LFG

Sulfur Dioxide Emission Factor for LFG Combustion (AP-42 Default Data)

LFG Influent Sulfur Compound	Measured Concentrations (ppmv)	EPA AP-42 Concentrations (ppmv)	Utilized Concentrations (ppmv)	Molecular Formula	No. Sulfur Atoms	Sulfur Content as H_2S (ppmv)	Resulting SO_2 Emission Rate (lb./MMcf)
Hydrogen sulfide	180.0 [A]	35.50 [B]	35.50 [B]	H_2S	1	35.5 [C]	5.90 [D]
Carbon disulfide	0.136 [A]	0.58 [B]	0.58 [B]	CS_2	2	1.2	0.39
Carbonyl sulfide	ND [A]	0.49 [B]	0.49 [B]	CSO	1	0.5	0.08
Dimethyl sulfide	ND [A]	7.82 [B]	7.82 [B]	C_2H_6S	1	7.8	1.30
Ethyl mercaptan	ND [A]	2.28 [B]	2.28 [B]	C_2H_6S	1	2.3	0.38
Methyl mercaptan	ND [A]	2.49 [B]	2.49 [B]	CH_4S	1	2.5	0.41
Total						**49.7**	**8.46** [E]

Notes

A. Results from measurements performed on samples of the Ocean County Landfill gas (Appendix D).

B. Default concentration for LFG constituents from USEPA Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I: Stationary Point and Area Sources (AP-42), Table 2.4-1, which is provided at the end of this Appendix

C. Determined by multiplying concentration by number of sulfur atoms in the molecule.

D. Sample calculation: SO_2 generation from hydrogen sulfide (H_2S):

(35.5 scf H_2S/MMcf LFG) (1 scf SO_2/scf H_2S) (64.06 lb.SO_2/mol) / (385.3 ft^3/mol)

= 5.90 lb SO_2/MMcf LFG

E. Calculation of SO_2 emission factor from sulfur content, as H_2S:

(49.7 scf H_2S/MMcf LFG) (1 scf SO_2/scf H_2S) (64.06 lb.SO_2/mol) / (385.3 ft^3/mol)

= 8.5 lb SO_2/MMcf LFG

8/31/06

APPENDIX I

AIR QUALITY MODELING PROTOCOL
AND
AMBIENT AIR IMPACT RESULTS
FOR
SEMINOLE ENERGY, L.L.C.

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APPENDICES

AIR QUALITY MODELING PROTOCOL AND AMBIENT AIR IMPACT RESULTS FOR SEMINOLE ENERGY, L.L.C.

1.0 INTRODUCTION TO AIR QUALITY IMPACT ANALYSES

Seminole Energy, L.L.C. (Seminole Energy) plans to construct and operate an electricity generation facility that will result in the beneficial use, after treatment, of landfill gas (LFG) that is collected from the Seminole County Landfill, Inc. Osceola Road Solid Waste Facility (Seminole Landfill). The proposed electricity generation facility will be located on a leased site within the boundaries of the Seminole Landfill in Geneva, Seminole County, Florida.

Seminole Landfill owns and operates an active LFG collection system that directs the LFG to two (2) open utility flares for the destruction of methane and hydrocarbons in the LFG. Seminole Energy will treat the recovered LFG and produce electricity using gas that would otherwise be combusted in the flaring system. The proposed facility is presented in this protocol as a new emission source; however, it is important to note that emissions from the proposed facility will replace air pollutant emissions that would otherwise be released by the flaring system (i.e., the reduction in LFG flaring is a secondary benefit of this project).

1.1 Class II Area Impacts

The proposed Seminole Energy LFG-fueled electricity generation facility will be a major source of CO relative to federal Prevention of Significant Deterioration (PSD) regulations. Therefore, air quality impact analyses are required for all regulated criteria pollutants (CO, NO_X, SO_2, PM_{10}, except ozone) that have the potential to be emitted by the proposed facility in order to demonstrate that these emissions will not cause or significantly contribute to a violation of National Ambient Air Quality Standards (NAAQS).

This protocol presents technical information and procedures that were used for performing air pollutant dispersion modeling analyses to predict maximum ambient air impacts that are produced by the modified stationary source (proposed electricity generation facility and existing flare emissions) and appropriate background sources.

The calculated ambient air impact results are compared to Class II Area PSD increment concentrations and NAAQS to demonstrate that the proposed project emissions are acceptable relative to federal PSD and NAAQS program requirements.

Section 3.0 of this protocol presents technical information and procedures that were used to perform the Class II Area impact analyses.

1.2 Class I Areas

The Seminole Landfill in Geneva, Florida is located over 100 kilometers from all national wilderness areas; therefore, Federal Class I criteria pollutant and visibility impact analyses are not required to be preformed for the proposed LFG fueled internal combustion engine electricity generation facility.

Table I-1.1 presents the distances from the proposed Seminole Energy facility to the closest three (3) Class I Wilderness Areas.

Table I-1.1 *National Wilderness Areas and their approximate distances from the proposed Seminole Energy Facility*

State	Wilderness Area	Representative UTM coordinates (km) East	North	Distance (km)
FL	Seminole Energy Facility	3,185	491	-
FL	Chassahowitzka Wilderness Area	3,174	344	150
GA	Okefenokee National Wilderness Area	3,385	383	230
GA	Wolf Island National Wilderness Area	3,465	471	280

2.0 SITE CHARACTERISTICS AND FACILITY INFORMATION

Seminole Landfill owns approximately 32.47 square kilometers (km^2) of land 25 miles northeast of Orlando, to the west of US Highway 95. The landfill (portion of the property currently and previously used for waste disposal) occupies approximately 0.97 km^2 of land located in the west central area of the Seminole Landfill property. The proposed electricity generation facility will be located at the southern border of the landfill.

The LFG fueled internal combustion (IC) engines will be housed in a single building (with dimensions of 62.7 feet by 108.7 feet) constructed in a leased area (within the landfill property) near the existing LFG collection system header. A gas transmission line (fuel supply pipe) will be connected to the header of the existing LFG collection system and a dedicated gas blower/compressor will be used to draw methane-rich gas (fuel) from the existing LFG collection system to the proposed gas treatment system and electricity generation facility.

A single meter (flow totalizer) will be installed and operated at the Seminole Energy electricity generation facility to measure the total amount of LFG fuel that is supplied to power the six (6) IC engines (i.e., individual engine fuel use meters will not be installed).

Seminole Landfill currently owns and operates two (2) utility flares to control landfill gas emissions. The open utility flares have maximum capacities of 3,000 and 2,145 cubic feet per minute (scfm) of landfill gas (i.e., total LFG control capacity of 5,145 scfm). After the installation of the proposed engine facility the flares will serve as back-up control devices and only be used when an excess amount of gas exists (e.g., if an engine is taken off-line for maintenance or if the landfill gas production rate exceeds the amount that can be used in the engines). Initially, the flares will only be used as a backup emission control device (producing electricity from combustion of the LFG in the IC engines is the preferred use for the gas). Throughout the lifetime of the electricity generation project, it is anticipated that the maximum amount of LFG recovered from the landfill will equal 5000 scfm based on a curve of recoverable gas produced per year for the next 20 years at the Seminole Landfill. The proposed electricity generation facility will use at full capacity 3500 scfm, resulting in the requirement to flare up to 1500 scfm (slightly less than 30% of the total flaring capacity).

2.1 Land Use

The general classification of the land surrounding the proposed facility is rural.

The population density of the area within a radius of 3 km from the proposed source was determined using a county population density map from the 2000 U.S. Census Bureau. The density map indicates that the area surrounding the facility has a population density between 0 and 165 persons per square mile. Because the area surrounding the proposed Seminole Energy facility has a population density significantly less than 1000 persons per square mile (and no significant development has occurred since the 2000 census), the land use of that area can be considered rural. The Census Bureau lists urban areas as having at least 1000 persons per square mile. The facility location is not in an industrial area that would significantly impact the population density analysis (in heavy industrial areas the non-resident population may be much larger than those indicated by standard population density plots).

2.2 Topography

The topography of the land that surrounds the Seminole Landfill is relatively flat. The base elevation of the proposed Seminole Energy electricity generation facility is approximately 7.68 meters (25.2 ft.) above sea level and the minimum stack heights of the proposed IC engine exhaust stacks is 20 feet (as measured from local grade), which results in an exhaust stack release elevation of 45.2 feet above sea level. Based on review of topography plots of the surrounding area there is no terrain within 3 km that has elevations greater than 45.2 feet above sea level.

Appendix I-1 provides a site plan of the proposed electricity generation facility building and surrounding topography.

2.3 Exhaust Stack Parameters

2.3.1 IC Engines

The proposed Seminole Energy electricity generation facility will use IC engines that are fueled with treated LFG and designed to operate at base load (100% capacity) conditions. Each of the proposed IC engines is expected to exhaust effluent gas at a rate of 12,050 actual cubic feet per minute (acfm) at 900°F through an 18-inch diameter stack. These engines will operate continuously with the exception of planned maintenance shutdowns or automatic engine shutdowns (instantaneous, automatic engine shutdowns if monitored operating parameters are outside of preset ranges). The amount of time required for an engine start-up is minimal. Since the engines are operated at base load conditions and the durations of engine shutdown and startup times are minimal, no air quality impact concentrations analyses were performed for these specific events (i.e., the engines will not be operated for any appreciable amount of time at loads other than 100%).

Each of the six IC engine exhaust stacks were entered into the computer dispersion model as individual point sources.

2.3.2 Open Utility Flares

Seminole Landfill currently owns and operates a 2,145 scfm utility flare (Phase 1 Flare) and a 3,000 scfm utility flare (Phase 2 Flare) to control LFG emissions. Following startup of the proposed electricity generation facility the utility flares will be used to control excess emissions of LFG (i.e., during times where the amount of LFG produced exceeds the amount that can be controlled in the IC engines). The flares are designed to achieve a 98% destruction of total hydrocarbons when the LFG has a methane content between 40-60%. The LFG at Seminole Landfill is estimated to have a methane content of 55%. The Phase 1 Flare has an actual release height of 8.53 m, the Phase 2 Flare has an actual release height of 11.58 m. An equivalent release height and diameter were calculated for the flares based on the actual release height and design heat release using the following equations from the TSCREEN users manual:

Phase 1 Utility Flare

$H_{equiv} = H_{actual} + 0.00128(Q_c^{0.478})$; and
$D_{equiv} = 1.754*10^{-4} * \text{sqrt}(Q_c)$

Where: H_{equiv} = Equivalent stack height
H_{actual} = Actual stack height (8.53m)
D_{equiv} = Equivalent stack diameter (m); and
Q_c = Flared gas heat release ($70.785*10^6$ Btu/hr)

Phase 2 Utility Flare

$H_{equiv} = H_{actual} + 0.00128(Q_c^{0.478})$; and
$D_{equiv} = 1.754*10^{-4} * \text{sqrt}(Q_c)$

Where: H_{equiv} = Equivalent stack height
H_{actual} = Actual stack height (11.58m)
D_{equiv} = Equivalent stack diameter (m); and
Q_c = Flared gas heat release ($99.000 *10^6$ Btu/hr)

The equations above account for the flared gas plume rise based on an effective buoyancy flux parameter. Using a gas heat release rate equivalent to the combustion of 3,000 and 2,145 scfm of gas at 550 Btu/scf results in equivalent flare heights of 15.77 m and 20.07 m and equivalent diameters of 1.470 m and 1.754 m for flares 1 and 2, respectively.

The flares were entered into the computer dispersion model as individual point sources using the calculated equivalent height, diameter and default values for temperature (1000 degrees Celsius) and velocity (20 meters per second).

Preliminary modeling was performed to determine the flare with the maximum off-site impacts. The results of this modeling indicate that the Phase 1 Flare release parameters and location (relative to the facility boundary) result in maximum off-site ambient air impacts. Therefore, the modified source modeling (impacts associated with simultaneous operation of the proposed electricity generation facility and flares) was performed based on the worst-case scenario that all flared LFG (1500 cfm) is directed to the Phase 1 Flare. In practice, this flare will most likely not receive all the flared LFG.

Table I-2.1 presents exhaust stack parameters for the six (6) identical IC engines and utility flares that were used in the air quality impact analyses.

Appendix I-2 provides a plot plan of the proposed electricity generation facility building, IC engine exhaust stacks and flares on a UTM coordinate system.

2.4 GEP Stack Height Analysis and Influencing Structures

The proposed IC engines will be installed within a 62.7 ft. (width) by 108.7 ft. (length) building that has a roof height of 15 ft. The individual exhaust stacks will be located on the roof of the building and set approximately 20 feet from the western edge of the building. The stacks will extend above the roof at least 5 feet (i.e., overall engine exhaust release height of 20 ft. as measured from grade of the land that surrounds the building) and exhaust vertically. The proposed electricity generation facility will have a maximum projected crosswind width of 125.5 feet (i.e., the diagonal of the rectangular building).

In general, air pollutant dispersion models consider the influence of building structures on exhaust stack plumes (i.e., downwash conditions) when the exhaust stack has a height that is less than its Good Engineering Practice (GEP) stack height. The GEP stack height for the proposed engine exhaust stacks is 37.5 ft. (11.43 meters) determined with the following equation:

$$H_{GEP} = H_b + 1.5L$$

where:
- H_{GEP} = formula GEP stack height (ft.)
- H_b = height of adjacent building (15 ft.)
- L = lesser of height or maximum projected width of adjacent building (15 ft)

Other nearby structures have the potential to influence the plume rise of the engine exhaust stacks if the distance between the stacks and the nearby structure is less than five times the L dimension (lesser of the building height or maximum projected width) of the structure. There are no other nearby structures located within the 5L radius.

There are no other structures located near the proposed electricity generation facility that have the potential to increase the calculated GEP stack height (i.e., the dimensions of the proposed facility control the GEP stack height determination). The release height of the proposed identical engine exhaust stacks is less than the GEP stack height (based on the dimensions of the structure in which the engines will be installed); therefore, emissions from the proposed electricity generation facility exhaust stacks have the potential to be influenced by aerodynamic downwash created by the building that houses the equipment. The influence of stack downwash on emission impacts was included in the dispersion modeling analyses.

The UTM coordinate locations and heights of the influencing structure (i.e., the building that houses the proposed engines) and proposed engine exhaust stacks were input to the USEPA Building Profile Input Program, Plume Rise Enhancement version (BPIP-PRIME). This computer program calculates projected building widths and heights for the influencing structure as a function of wind direction for use in the building downwash algorithms of the dispersion model that is used for the significant impact analysis (which is described in the following section of this document).

Appendix I-3 provides a compact disc that contains the BPIP input files (.PIP and .GPW files) and output building parameter files (.TAB, .SUM and .SO files) that were used in the modeling analysis.

Table I-2.1 *Exhaust stack parameters for the proposed LFG combustion devices; open utility flares and Seminole Energy facility*

Source ID	Location (UTM) East (m)	North (m)	Base Elev. (m)	Stack Height (m)	(ft)	Stack Diameter (m)	(ft)	Temp. (K)	Exit Velocity (m/s)
SICE01	491,240	3,184,521	7.67	6.09	20.0	0.457	1.5	755	34.64
SICE02	491,235	3,184,521	7.67	6.09	20.0	0.457	1.5	755	34.64
SICE03	491,230	3,184,521	7.67	6.09	20.0	0.457	1.5	755	34.64
SICE04	491,225	3,184,521	7.67	6.09	20.0	0.457	1.5	755	34.64
SICE05	491,220	3,184,521	7.67	6.09	20.0	0.457	1.5	755	34.64
SICE06	491,215	3,184,521	7.67	6.09	20.0	0.457	1.5	755	34.64
FLARE1†	491,949	3,184,550	6.04	15.77	51.74	1.470	4.82	1273	20.00
FLARE2†	491,049	3,185,200	4.86	20.07	65.86	1.745	5.72	1273	20.00

† Data presented for height and diameter are equivalent values calculated for open flares, using equations from the TSCREEN users manual. Exit temperature and velocity are default values for open flares.

3.0 CLASS II AREA SIGNIFICANT IMPACT ANALYSIS

3.1 Purpose

A new source that has potential criteria air pollutant emissions in excess of PSD major source thresholds is required to perform analyses to determine whether its regulated air pollutant emissions will significantly impact the ambient air in designated Class II areas. In NAAQS attainment areas, a demonstration that indicates the maximum predicted ambient air pollutant impacts (concentrations) caused by the emissions of a proposed source are less than the applicable PSD significant impact levels is equivalent to a demonstration of compliance with Federal and State ambient air standards.

Table I-3.1 presents PSD significant impact levels established for Class II areas.

Air pollutant emissions from major sources that result in predicted ambient air impacts that exceed the significant impact levels are required to perform additional modeling to consider the cumulative impact caused by background emission sources and regional air pollutant background concentrations to demonstrate compliance with PSD increment consumption requirements and applicable federal ambient air quality standards (NAAQS).

For the purposes of the Class II modeling demonstration the criteria pollutant emissions from the operation of the IC engines at 100% capacity, and the larger utility flare operating at a capacity of 50% (1500 scfm of the 3000 scfm maximum for the Phase 1 Flare) were considered in order to provide the most conservative (i.e., maximum) estimate of ambient air impacts. Based on results from LFG generation models the estimated LFG generation rate will not support simultaneous operation of the engines and flare at the modeled capacities except for one year within the next twenty when the landfill gas curve is at its maximum. (i.e., there is not enough landfill gas that will be produced any other year to support operation of the engine facility and flare at the modeled capacities).

3.2 Criteria Pollutant Emission Rates

Table I-3.2 presents criteria pollutant emission rates for the proposed electricity generation facility that were used in the modeling analysis. These emission rates are the same as those presented in Table 3 of the permit application document. The maximum SO_2 and NO_2 impacts produced by the proposed electricity generation facility were based on the total conversion of SO_X compounds to SO_2, and 75% conversion of NO_X compounds to NO_2.

Table I-3.3 presents criteria pollutant emission rates for the Phase 1 Flare that was used in the modeling analysis. The emission rates are based on the LFG throughput specified in the previous section and pollutant emission factors currently used by the facility for annual reporting.

3.3 Refined Modeling

The radius of significant impact was calculated for each criteria pollutant released from the proposed facility. The radius of significant impact, which is pollutant and impact averaging time specific, is the minimum distance from the proposed emission source at which all of the calculated impacts (in any direction) are equal to or less than the corresponding significant impact level.

Screening modeling is often performed for an initial determination of maximum impacts and the radius of significant impact. However, the screening model (e.g., SCREEN3) only calculates impacts associated with a single representative emission source. Due to the differences between the IC engine and flare exhaust parameters, no screening modeling was performed for this project (the SIA was performed using a refined model).

3.3.1 Model Selection

The AERMOD (American Meteorological Society/Environmental Protection Agency Regulatory Model) air pollutant dispersion model (version No. 04300) was used to calculate ground-level pollutant concentrations resulting from the proposed electricity generation facility and flare air pollutant emission rates and exhaust configuration. AERMOD is the most recent Gaussian steady-state plume dispersion model released by USEPA for use in assessing ambient air impacts associated with air pollutant releases and was adopted by the USEPA as the preferred general purpose dispersion model (Federal Register Notice November 9, 2005). The USEPA *Guideline on Air Quality Models* (40 CFR Part 51, Appendix W) specifies that impacts calculated with most steady-state Gaussian plume models are applicable at distances up to 50 km from the origin of the emission source.

The use of the AERMOD model was determined appropriate because it:

- Can be used to model concentrations at both simple and complex terrain receptors.
- Uses the plume rise enhancement (PRIME) building downwash algorithm, which has been shown to be superior to the downwash algorithm in previously released Gaussian steady-state plume dispersion models.

The following sections present input data and processing options that were used for the AERMOD air pollutant dispersion modeling. The AERMOD input files were prepared by entering appropriate data (applicable to the specific emission process) and model operating parameters into a Windows-based graphical user interface (GUI) developed by BEE-Line Software (BEEST for Windows, current version 9.50).

3.3.2 Model Options

The AERMOD dispersion model was executed with regulatory default options, which include the use of stack-tip downwash and incorporate the effects of elevated terrain (if applicable). In regulatory default mode, no calculations are performed for deposition or plume depletion.

Based on information presented in Section 2.1 of this protocol, the land use for the area surrounding the proposed electricity generation facility is predominantly classified as rural (as opposed to urban). Therefore, no options for urban dispersion were used to calculate air quality impact concentrations produced by the modeled emission sources.

3.3.3 Meteorological Data

Meteorological data (hourly surface measurements and upper-air soundings) for the five-year period 1999 through 2003 with site characteristics (surface roughness, albedo and Bowen Ratio) were provided by the Florida DEP for this project. The surface and upper air data were originally obtained from the Orlando and Tampa Bay areas. The data were preprocessed by the Florida DEP using the AERMET meteorological preprocessor program to produce two types of data files for each meteorological year that are used by AERMOD; surface scalar parameters (*filename*.sss) and vertical profiles (*filename*.pfc). A profile base elevation of 28.65 meters (94 feet) was used with the meteorological data for the execution of AERMOD.

The AERMET data files used for this project are provided on the compact disc in Appendix I-3.

3.3.4 Receptor Network

Ground-level pollutant impact concentrations are required to be calculated for all nearby areas that are considered to be ambient air (i.e., areas in which public access is not precluded or restricted by the stationary source). Preliminary modeling results (using AERMOD) indicate that some of the criteria pollutants exceed PSD Class II significance levels exterior to property owned by the Seminole Landfill. The receptor network (locations at which air pollutant impact concentrations are calculated) used in the AERMOD modeling analyses was developed by creating a grid of receptors on a Cartesian coordinate system having a spacing of 100 meters to determine off-site impacts up to 1.6 km from the facility to ensure that all maximum impacts were within the boundary of the receptor grid. Receptors were placed at the Seminole Landfill facility boundary and extended 1.6 km in all directions from the proposed facility.

No flagpole receptors were identified in the area surrounding the proposed facility location.

Figure I-3.1 presents a depiction of the receptor network that was used to perform the refined modeling analysis.

3.3.5 Terrain Data

As presented in Section 2.2 of this protocol and the site plan in Appendix I-1, complex terrain will not be considered as part of the refined modeling analysis, as there are no offsite receptors at elevations that exceed the stack height. The terrain in the region surrounding the Seminole Landfill property is at elevations lower than the stack release elevation of the proposed facility; therefore, the terrain was classified as simple.

USGS 30-meter (7.5 minute) ASCII Digital Elevation Models (DEM) files were obtained for the geographical area surrounding the facility. The DEM data were based on the North American Datum of 1927 (NAD27). USEPA's AERMAP computer program was used to extract data from the DEM files and calculate source base elevations and receptor elevations using the default algorithm (inverse distance squared of the nearest four terrain nodes).

The DEM data files and AERMAP output files that were used in the model are provided on the compact disc in Appendix I-3.

3.3.6 Pollutant Impact Averaging Times

Maximum ambient air pollutant impact concentrations produced by the proposed emission sources were determined for the specified five-year meteorological period. These results were compared to the PSD significant impact levels, and if applicable, to establish the radius of significant impact (i.e., the geographic areas that surround the proposed emission facility that are determined to have maximum impacts that are greater than the significance values). The highest calculated impact for each pollutant and averaging period for the five-year meteorological data set was used for the SIA and radius of impact determination.

The impact concentration(s) calculated for:

- SO_2 were based on maximum 3-hr, 24-hr and annual average impacts.
- PM_{10} were based on maximum 24-hr and annual impacts.
- CO were based on the maximum 1-hr and 8-hr average impacts.
- NO_2 was based on the maximum annual average impact.

Highest 2nd high impacts for short-term pollutant averaging periods that are used for PSD and NAAQS demonstrations were not considered for determinations of the SIA and radius of significant impact.

3.4 Refined Modeling SIA Results

Appendix I-4 provides AERMOD output summary files and a plot depicting the maximum radius of impact.

These results indicate that emissions from the combined operation of the utility flare and proposed electricity generation facility result in maximum impact concentrations that exceed the Class II significant impact levels for PM_{10} (annual and 24-hr), NO_X annual and SO_2 (annual, 24-hr and 3-hr). The impacts do not exceed the significant impact level for CO (1-hr and 8-hr).

Table I-3.5 presents the proposed Seminole Energy facility and utility flare emission rates used in the modeling demonstration, and the predicted impacts from the proposed facility, flare and combined impact.

The maximum radius of impact for any pollutant is 0.9 km. Therefore, the proposed receptor grid (which considers receptors out to a distance of 1.6 km from the facility) adequately encompasses the significant impact area. The calculated significant impact area will be used to determine the number of sources that need to be included in the multisource modeling analysis (described in Section 4.0 of this document).

Table I-3.1 Significant Impact Levels for Class II Areas (µg/m³)

Pollutant	Annual	24-Hr	8-Hr	3-Hr	1-Hr
Nitrogen Dioxide (NO_2)	1.0	--	--	--	--
Carbon Monoxide (CO)	--	--	500	--	2000
Sulfur Dioxide (SO_2)	1.0	5.0	--	25.0	--
Particulates (PM_{10}/TSP)	1.0	5.0	--	--	--

Table I-3.2 Criteria pollutant emission rates for the proposed Seminole Energy facility used in the air quality analysis

Pollutant	LFG-Fired ICE Emission Factors		Single ICE[3] Emissions (lb/hr)	Facility Emission Rate for Six (6) ICE (lb/hr)	(TpY)	(g/s)
Nitrogen Dioxide (NO_x)[1]	0.60	g/bhp-hr	2.95	17.72	77.6	1.67
Carbon Monoxide (CO)	2.75	g/bhp-hr	13.54	81.23	355.8	10.24
Sulfur Dioxide (SO_2)	32.2	lb/MMcf	0.96	5.76	25.23	0.73
Particulates[2]	0.24	g/bhp-hr	1.18	7.09	31.05	0.89

1. Emission factor of 0.60 g/bhp-hr is for total oxides of nitrogen (NO_x), USEPA guidance specifies that 75% of NO_x can be considered NO_2, which is reflected only in the (g/s) emission rate.
2. Particulate emission rate for TSP, PM_{10} and $PM_{2.5}$.
3. Based on operation of a single engine at base load (100% capacity) conditions; engine output of 2233 hp and maximum theoretical fuel consumption of 35,075 scfh LFG .

Table I-3.3 Criteria pollutant emission rates for the Seminole Landfill utility flare used in the air quality analysis (Phase 1 Flare)

Pollutant	LFG Utility Flare Emission Factors	Utility Flare Emission Rate[2] (lb/hr)	(TpY)	(g/s)
Nitrogen Dioxide (NO_x) [1,3]	0.06 lb/MMBtu	2.23	9.76	0.281
Carbon Monoxide (CO) [3]	0.20 lb/MMBtu	9.90	43.36	1.247
Sulfur Dioxide (SO_2) [4]	7.94 lb/MMscf LFG	0.714	3.13	0.090
Particulates [5]	17.0 lb/MMdscf CH_4	0.842	3.67	0.106

1. USEPA guidance specifies that 75% of NO_x can be considered NO_2, which is reflected in the emission rate.
2. Based on continuous operation at 1500 scfm LFG and heat value of 550 Btu/scfm (49.5 MMBtu/hr)
3. Manufacturer guaranteed emission rate
4. Based on default sulfur content of 46.9 ppmv
5. Default PM emission rate AP-42 section 2.4

Table I-3.4 Air impact results compared to PSD Class II Significant Impact Levels

Pollutant	Averaging Time	Flare Emission Rate (g/s)	Potential Energy Facility Emission Rate (g/s)	Maximum Predicted Flare Impact (μg/m³)	Maximum Predicted Energy Facility Impact (μg/m³)	Combined Energy and Flare Impact (μg/m³)	Class II Significant Impact Levels (μg/m³)
NO_2	Annual	0.281	1.67	0.04	2.79	2.81	1.0
CO	8-hr	1.247	10.24	5.51	281	281	500
	1-hr	1.247	10.24	14.1	421	421	2000
SO_2	Annual	0.090	0.726	0.01	1.21	1.22	1.0
	24-hr	0.090	0.726	0.33	13.7	13.7	5.0
	3-hr	0.090	0.726	0.63	26.8	26.8	25.0
PM_{10}	Annual	0.106	0.892	0.02	1.49	1.50	1.0
	24-hr	0.106	0.892	0.38	16.8	16.9	5.0

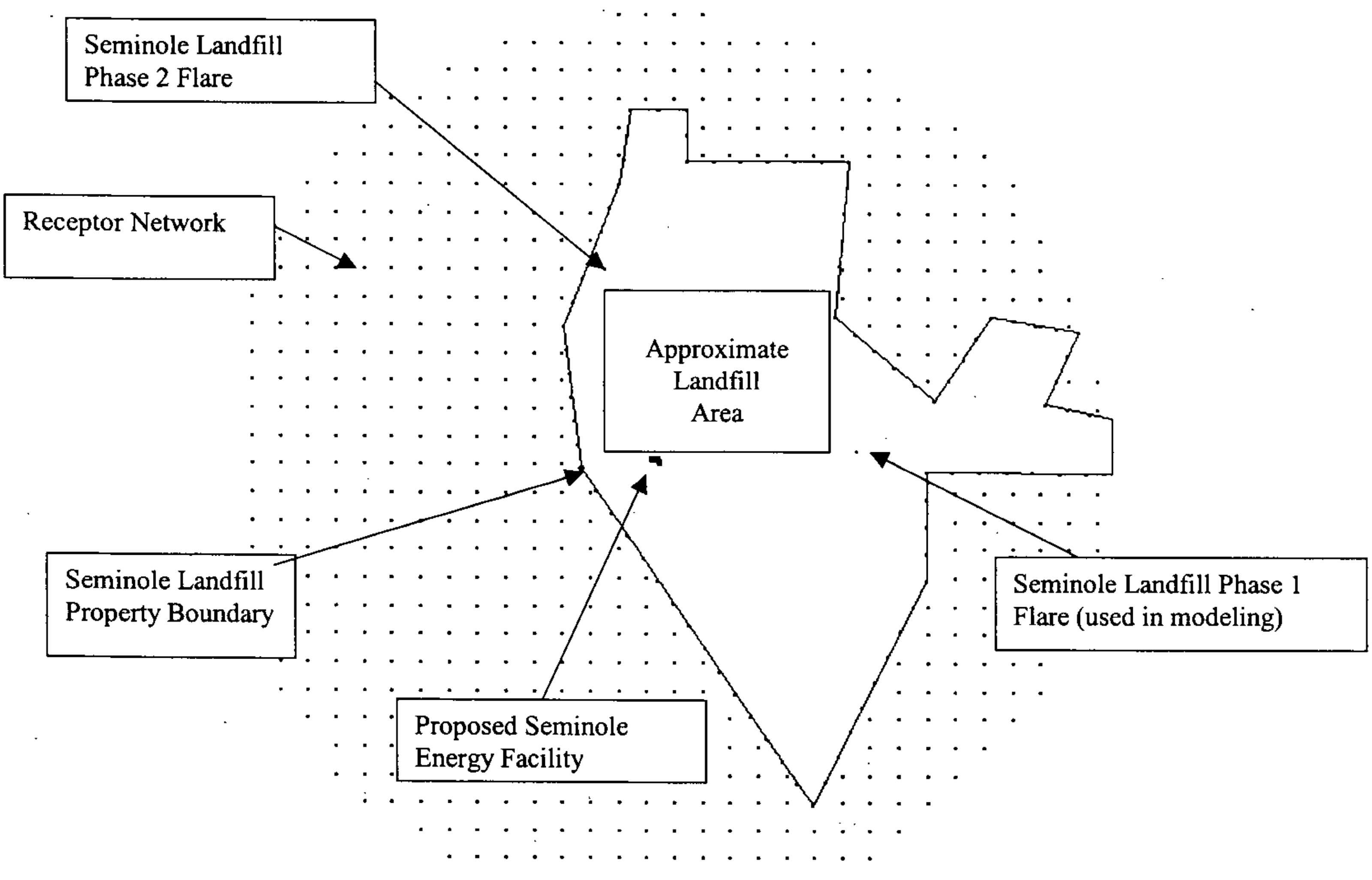


Figure I-3.1 Receptor network used in refined modeling analysis

4.0 BACKGROUND DATA AND MULTISOURCE MODELING

4.1 Background Sources

Major PSD sources with air pollutant emissions that produce ambient air quality impact concentrations that exceed the Class II significant concentrations are required to perform a multi-source air quality impact modeling demonstration (i.e., PSD increment consumption analysis and NAAQS compliance demonstration). A multisource modeling demonstration is required for all pollutants with a maximum impact that exceeds the PSD significant impact concentration and must consider all major sources that:

1. Are located within the significant impact area (sources located at a distance from the proposed facility that is less than the radius of significant impact); and

2. Have the potential to significantly impact the SIA of the proposed facility (generally considers major sources within 50 to 75 km from the SIA).

An inventory of background emission sources required to be considered in the multisource PSD increment and NAAQS modeling analysis (major sources located within 75 km of the significant impact area) was provided by the Florida DEP. The inventory provided by the department specified the emission units that consume PSD increment (those emission units that were installed subsequent to the applicable PSD baseline date).

Appendix I-5 provides the inventory of permitted air pollutant emission rates and exhaust stack parameters for the background sources provided by the Florida DEP for consideration in the multisource PSD increment and NAAQS modeling analysis.

Many of the sources in the original background sources inventory were screened out (i.e., excluded from the refined modeling demonstration) using the '20D' criteria. This method, recommended by the Florida DEP, excludes from the modeling analysis any source that has emissions (in TPY) less than 20 times the distance (in km) between the background source and the SIA.

4.2 Background Air Quality (Monitoring Data)

For the NAAQS demonstration, representative background pollutant concentrations were added to the predicted air pollutant impacts determined by the multisource modeling analysis. Available air monitoring data were retrieved from the USEPA AIRS website. The three most recent years of complete data from the nearest monitoring station were reviewed (2003-2005) to establish representative background air pollutant concentrations.

Table I-4.1 presents representative maximum background concentrations for each criteria pollutant that were used in the NAAQS demonstration.

4.3 Criteria Pollutant Emission Rates and Averaging Periods

The emission impact concentrations for the refined multisource air quality analysis were determined with the operating parameters and emission rates for the six individual engine exhaust stacks, the utility flare selected for modeling and appropriate background sources.

The results for the SIA (presented in Section 3.0) are based on the highest calculated impact for each averaging period for any of the five years modeled. For the PSD increment and NAAQS refined modeling analyses, the combined impact of the proposed facility and appropriate background sources was based on the:

- Highest second-high (i.e., highest of the second highest concentration predicted for any of the five meteorological years used) SO_2 impact for the PSD and NAAQS 3-hr, and 24-hr averaging periods.

- Highest SO_2 impact for the PSD and NAAQS annual averaging period.

- Highest PM_{10} impact for the PSD 24-hr averaging period.

- Highest second-high PM_{10} impact for the NAAQS 24-hr averaging period.

- Highest PM_{10} impact for PSD and NAAQS annual averaging period.

- Highest NO_2 impact for the PSD and NAAQS annual averaging period.

Compliance with the annual standard for all pollutants (NO_2, SO_2, PM_{10}) was based on the highest predicted annual impact for any of the five modeled years.

4.4 PSD and NAAQS Results

Table I-4.2 presents results of the PSD increment consumption analysis.

Table I-4.3 presents results of the state and federal ambient air quality standards analysis.

The highest NO_2 annual average ambient air impact produced by the modeled emission sources is 6 $\mu g/m^3$, which is less than the allowable PSD increment of 25 $\mu g/m^3$. This calculated impact results in a cumulative ambient air concentration, including background of 27 $\mu g/m^3$, less than the NAAQS of 100 μg/m^3 (i.e., there are no calculated impacts beyond the Landfill facility property that exceed the NO_2 NAAQS).

The highest SO_2 3-hour ambient air impact produced by the modeled emission sources is 113 μg/m^3, which is less than the allowable PSD increment of 512 μg/m^3. This calculated impact results in a cumulative ambient air concentration, including background of 37.3 μg/m^3, less than the NAAQS of 1300 μg/m^3. The highest SO_2 24-hour ambient air impact produced by the modeled emission sources is 29.1 μg/m^3, which is less than the allowable PSD increment of 91 μg/m^3. This calculated impact results in a cumulative ambient air concentration, including background of 15.9 μg/m^3, less than the Florida ambient air quality standard of 260 μg/m^3. The highest SO_2 annual average ambient air impact produced by the modeled emission sources is 6.57 μg/m^3, which is less than the allowable PSD increment of 20 μg/m^3. This calculated impact results in a cumulative ambient air concentration, including background of 9.23 μg/m^3, less than the Florida ambient air quality standard of 60 μg/m^3. These calculated impacts result in cumulative ambient air concentrations, including backgrounds, less than the respective NAAQS and Florida ambient air quality standards (i.e., there are no calculated impacts beyond the Landfill facility property that exceed the standards).

The highest PM_{10} annual average ambient air impact produced by the modeled emission sources is 1.65 μg/m^3, which is less than the allowable PSD increment of 17 μg/m^3. This calculated impact results in a cumulative ambient air concentration, including background of 19 μg/m^3, less than the NAAQS of 50 μg/m^3. The highest PM_{10} 24-hour ambient air impact produced by the modeled emission sources is 16.9 μg/m^3, which is less than the allowable PSD increment of 30 μg/m^3. The 2nd highest PM_{10} 24-hour impact results in a cumulative ambient air concentration, including background of 72.9 μg/m^3, less than the NAAQS of 150 μg/m^3. These calculated impacts result in cumulative ambient air concentrations, including backgrounds, less than the respective NAAQS ambient air quality standards (i.e., there are no calculated impacts beyond the Landfill facility property that exceed the standards).

Appendix I-6 provides AERMOD output summary files and graphical plots for the PSD increment and NAAQS refined modeling analyses.

Table I-4.1 Monitoring data that will be used to establish background air quality for the NAAQS demonstration

Pollutant[1]	Averaging Time	Concentration[2] (ppm)	(µg/m³)	Monitoring Site	County[3]	Year(s)
NO_2	Annual	0.011	21	Morris Blvd. Winter Park	Orange	2003
SO_2	Annual	0.001	2.66	Morris Blvd. Winter Park	Orange	2003
	24-hour	0.006	15.9	Morris Blvd. Winter Park	Orange	2004
	3-hour	0.014	37.3	Morris Blvd. Winter Park	Orange	2004
PM_{10}	Annual	--	19	County Homes Road at US 17-92	Seminole	2004
	24-hour	--	60	County Homes Road at US 17-92	Seminole	2004

1. For NO_2, SO_2 and CO the monitoring data provided in the USEPA AIRS database are presented in ppm and were converted to µg/m³ using an ideal gas relationship (0.02405 m³/g-mol) and the molecular weights for NO_2 (46), SO_2 (64) and CO (28).

2. Maximum concentrations given from the 3 most recent years of data (2003, 2004 and 2005).

3. Orange County monitoring data were used for pollutant concentrations that are not measured by the Seminole County monitoring station.

Table I-4.2 Results of PSD increment consumption analysis

Pollutant	Averaging Period	Met. Year	Maximum Impact PSD Increment Consuming Sources[1] (μg/m^3)	Allowable PSD Class II Increment (μg/m^3)
NO_2	Annual	2001	6.03	25
SO_2	3-hr (2nd high)	2001	113	512
SO_2	24-hr (2nd high)	2000	29.1	91
SO_2	Annual	2000	6.57	20
PM_{10}	24-hr (1st high)	2003	16.9	30
PM_{10}	Annual	2001	1.65	17

1. Includes the proposed Seminole Energy facility, existing LFG combustion sources at the Seminole County Landfill and appropriate PSD increment-consuming sources identified by the Florida DEP.

Table I-4.3 Results of Florida and Federal ambient air quality standards analysis

Pollutant	Averaging Period	Met. Year	Maximum Multisource Impact (µg/m³)	Representative Background Concentration[1] (µg/m³)	Max Combined Ambient Air Concentration (µg/m³)	Florida Standards[2] (µg/m³)	NAAQS (µg/m³)
NO_2	Annual	2001	6.03	21	27.0		100
SO_2	3-hr (2nd high)	2001	113	37.3	150	1300	1300
SO_2	24-hr (2nd high)	2001	29.1	15.9	45.0	260	365
SO_2	Annual	2000	6.57	2.66	9.23	60	80
PM_{10}	24-hr (2nd high)	2001	12.9	60	72.9		150
PM_{10}	Annual	2001	1.65	19	20.7		50

1. Background monitoring data provided in the USEPA AIRS database and presented in Table I-4.1.

2. Florida Ambient Air Quality Standards provided in Rule 62-204.240(a)(b)(c).

5.0 SPECIAL MODELING CONSIDERATIONS

5.1 Particle Deposition

Based on the design and operation of the proposed IC engines and the treatment (dewatering, compression and filtration) of LFG received from the landfill prior to its use as a fuel and combustion, the amount of particulates emitted from the combustion process are expected to be relatively small. Therefore, compliance with the particulate matter ambient air quality standards can be achieved without considering particle deposition (i.e., the removal of particulates from the exhaust plume over the distance of maximum ground-level impacts due to deposition are expected to be minimal).

5.2 Fugitive Emissions

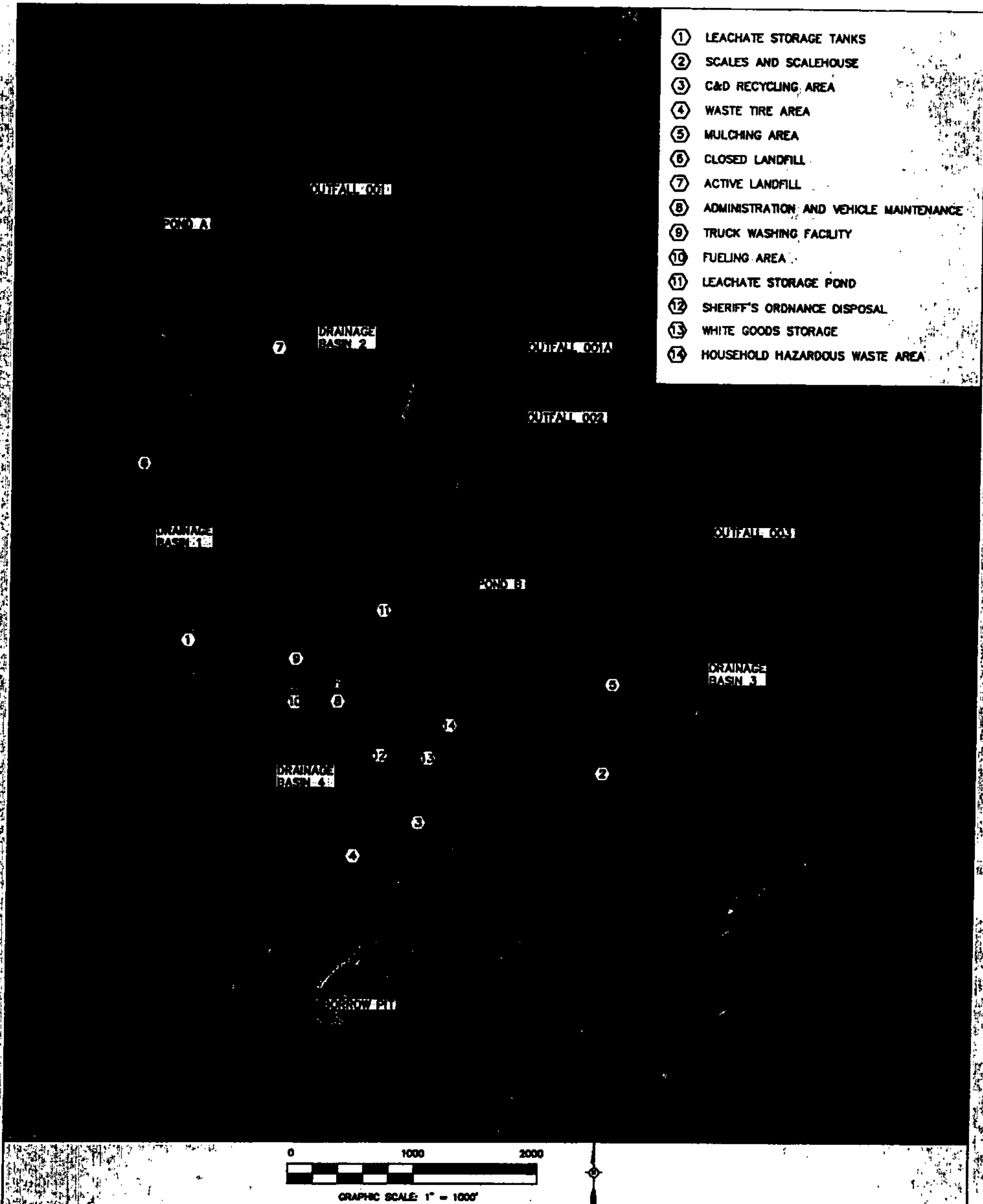
The proposed Seminole Energy electricity generation facility will utilize LFG that is supplied by the Seminole Landfill gas collection and control system. The proposed Seminole Energy electricity generation facility will not be a source of fugitive emissions.

5.3 Start-Up / Shutdown / Low Load Scenarios

The proposed electricity generation facility will use LFG-fueled IC engines that are designed to operate as base load (100% capacity) conditions. These engines will operate continuously with the exception for planned maintenance shutdowns or automatic engine shutdowns (instantaneous, automatic engine shutdowns if monitored operating parameters are outside of preset ranges). The amount of time required for an engine start-up is minimal. Since the engines are operated at base load conditions and the durations of engine shutdown and startup times are minimal, no air quality impact concentrations analyses will be performed for these specific events.

APPENDIX I-1

LANDFILL AND SEMINOLE ENERGY SITE PLANS
AND
TOPOGRAPHICAL PLOT



S2Li

531 Versailles Drive
Suite 202
Maitland, FL 32751-4588
Phone: (407) 475-8183
Fax: (407) 475-8166
Certification of Authorization #7831

SITE PLAN

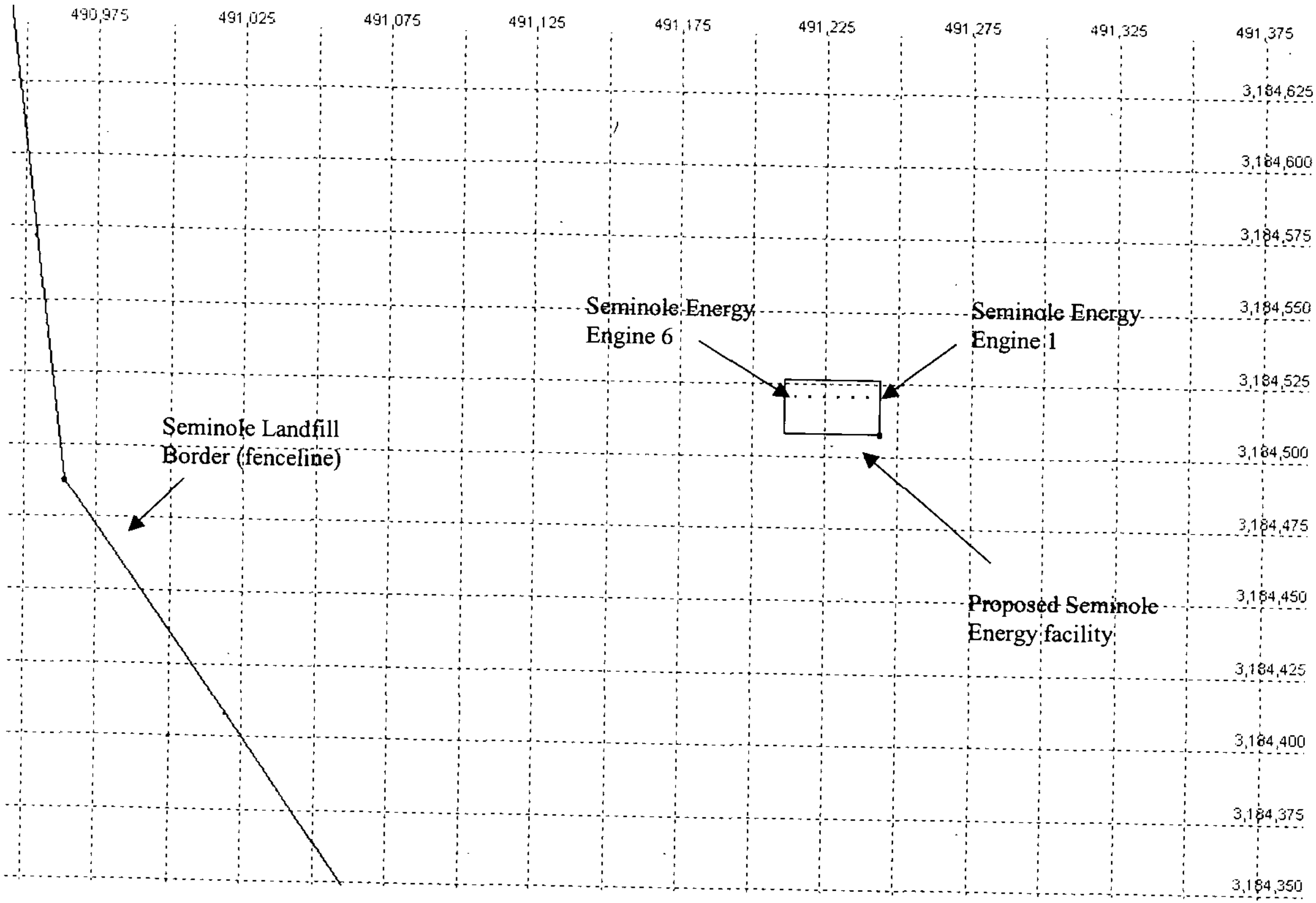
OSCEOLA ROAD SOLID WASTE MANAGEMENT FACILITY
SEMINOLE COUNTY, FLORIDA

FIGURE 2

APPENDIX I-2

COORDINATES FOR PROPOSED FACILITY AND STACKS

Derenzo and Associates, Inc.



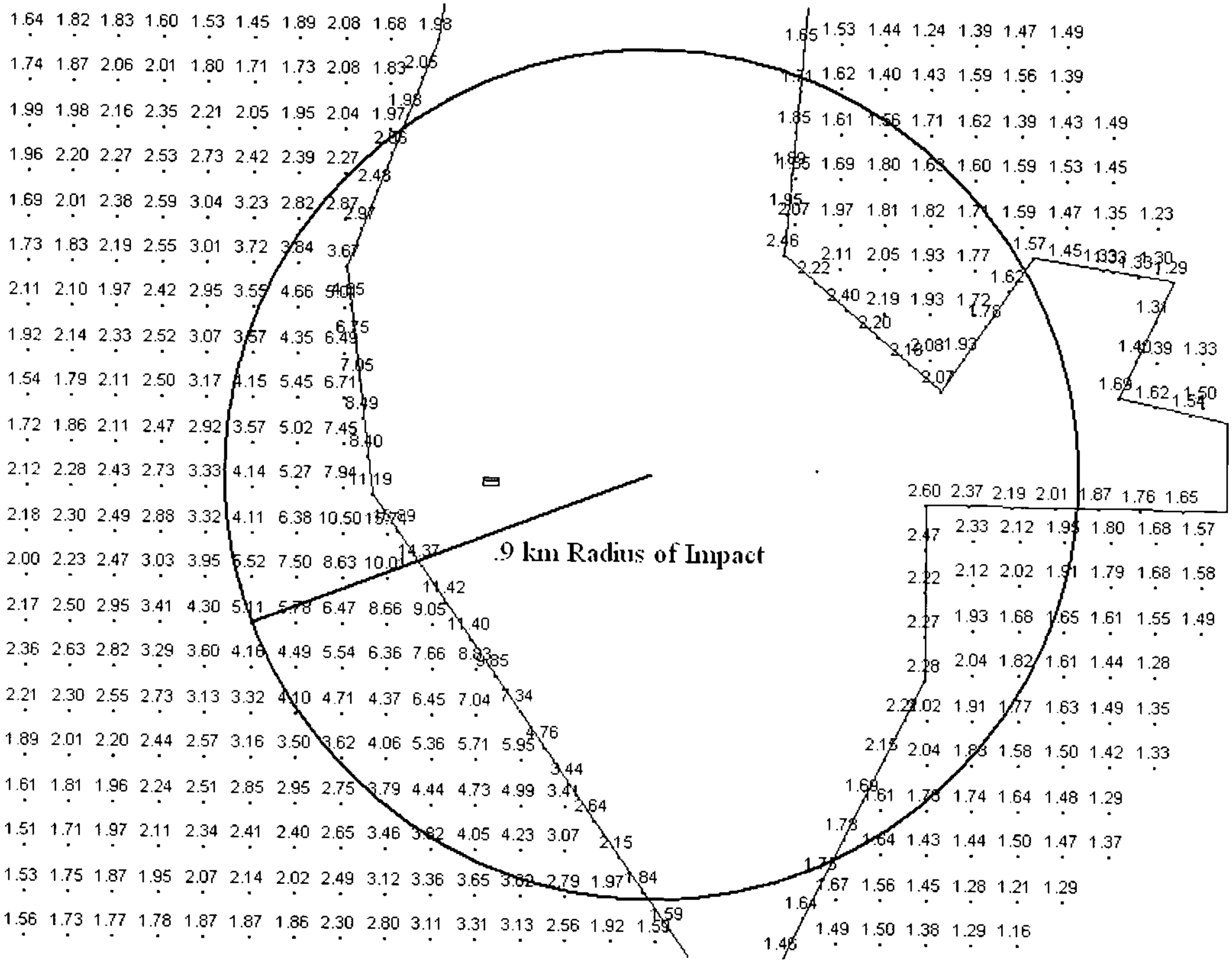
Seminole Energy Proposed Facility and Stacks

APPENDIX I-3

MODELING INPUT FILES

APPENDIX I-4

RESULTS OF CLASS II SIGNIFICANT IMPACT ANALYSIS



Seminole Energy Radius of Impact

Appendix I-4

AERMOD Modeling Results (NO_X Annual Significant Impact Analysis)

Model	File	Pollutant	Average	Group	Rank	Conc.	East(X)	North(Y)	Elev	Met File
AERMOD	Seminole03_01_NOX.USF	NOX	ANNUAL	ALL	1ST	2.81	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03_02_NOX.USF	NOX	ANNUAL	ALL	1ST	2.63	491019.3	3184408	5.81	ORLANDO_2002.SFC
AERMOD	Seminole03_00_NOX.USF	NOX	ANNUAL	ALL	1ST	2.58	491019.3	3184408	5.81	ORLANDO_2000.SFC
AERMOD	Seminole03_99_NOX.USF	NOX	ANNUAL	ALL	1ST	2.26	491074.7	3184328	5.95	ORLANDO_1999.SFC
AERMOD	Seminole03_03_NOX.USF	NOX	ANNUAL	ALL	1ST	2.04	491074.7	3184328	5.95	ORLANDO_2003.SFC
AERMOD	Seminole03_03_NOX.USF	NOX	ANNUAL	FLARES	1ST	0.046	492014	3184908	4.9	ORLANDO_2003.SFC
AERMOD	Seminole03_99_NOX.USF	NOX	ANNUAL	FLARES	1ST	0.044	492288.3	3184475	6	ORLANDO_1999.SFC
AERMOD	Seminole03_00_NOX.USF	NOX	ANNUAL	FLARES	1ST	0.043	492194	3184476	5.88	ORLANDO_2000.SFC
AERMOD	Seminole03_01_NOX.USF	NOX	ANNUAL	FLARES	1ST	0.042	492014	3184908	4.9	ORLANDO_2001.SFC
AERMOD	Seminole03_02_NOX.USF	NOX	ANNUAL	FLARES	1ST	0.042	492014	3184908	4.9	ORLANDO_2002.SFC
AERMOD	Seminole03_01_NOX.USF	NOX	ANNUAL	SEMNRG	1ST	2.79	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03_02_NOX.USF	NOX	ANNUAL	SEMNRG	1ST	2.61	491019.3	3184408	5.81	ORLANDO_2002.SFC
AERMOD	Seminole03_00_NOX.USF	NOX	ANNUAL	SEMNRG	1ST	2.56	491019.3	3184408	5.81	ORLANDO_2000.SFC
AERMOD	Seminole03_99_NOX.USF	NOX	ANNUAL	SEMNRG	1ST	2.24	491074.7	3184328	5.95	ORLANDO_1999.SFC
AERMOD	Seminole03_03_NOX.USF	NOX	ANNUAL	SEMNRG	1ST	2.03	491074.7	3184328	5.95	ORLANDO_2003.SFC

Appendix I-4

AERMOD Modeling Results (SO_2 Annual Significant Impact Analysis)

Model	File	Pollutant	Average	Group	Rank	Conc.	East(X)	North(Y)	Elev	Met File
AERMOD	Seminole03_01_SO2.USF	SO2	ANNUAL	ALL	1ST	1.21	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03_02_SO2.USF	SO2	ANNUAL	ALL	1ST	1.14	491019.3	3184408	5.81	ORLANDO_2002.SFC
AERMOD	Seminole03_00_SO2.USF	SO2	ANNUAL	ALL	1ST	1.11	491019.3	3184408	5.81	ORLANDO_2000.SFC
AERMOD	Seminole03_99_SO2.USF	SO2	ANNUAL	ALL	1ST	0.975	491074.7	3184328	5.95	ORLANDO_1999.SFC
AERMOD	Seminole03_03_SO2.USF	SO2	ANNUAL	ALL	1ST	0.882	491074.7	3184328	5.95	ORLANDO_2003.SFC
AERMOD	Seminole03_03_SO2.USF	SO2	ANNUAL	FLARES	1ST	0.015	492014	3184908	4.9	ORLANDO_2003.SFC
AERMOD	Seminole03_99_SO2.USF	SO2	ANNUAL	FLARES	1ST	0.014	492288.3	3184475	6	ORLANDO_1999.SFC
AERMOD	Seminole03_00_SO2.USF	SO2	ANNUAL	FLARES	1ST	0.014	492194	3184476	5.88	ORLANDO_2000.SFC
AERMOD	Seminole03_01_SO2.USF	SO2	ANNUAL	FLARES	1ST	0.014	492014	3184908	4.9	ORLANDO_2001.SFC
AERMOD	Seminole03_02_SO2.USF	SO2	ANNUAL	FLARES	1ST	0.013	492014	3184908	4.9	ORLANDO_2002.SFC
AERMOD	Seminole03_01_SO2.USF	SO2	ANNUAL	SEMNRG	1ST	1.21	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03_02_SO2.USF	SO2	ANNUAL	SEMNRG	1ST	1.13	491019.3	3184408	5.81	ORLANDO_2002.SFC
AERMOD	Seminole03_00_SO2.USF	SO2	ANNUAL	SEMNRG	1ST	1.11	491019.3	3184408	5.81	ORLANDO_2000.SFC
AERMOD	Seminole03_99_SO2.USF	SO2	ANNUAL	SEMNRG	1ST	0.968	491074.7	3184328	5.95	ORLANDO_1999.SFC
AERMOD	Seminole03_03_SO2.USF	SO2	ANNUAL	SEMNRG	1ST	0.877	491074.7	3184328	5.95	ORLANDO_2003.SFC

Appendix I-4

AERMOD Modeling Results (SO_2 24-Hour Significant Impact Analysis)

Model	File	Pollutant	Average	Group	Rank	Conc.	East(X)	North(Y)	Elev	Met File
AERMOD	Seminole03_01_SO2.USF	SO2	24-HR	ALL	1ST	13.73	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03_99_SO2.USF	SO2	24-HR	ALL	1ST	11.67	491074.7	3184328	5.95	ORLANDO_1999.SFC
AERMOD	Seminole03_03_SO2.USF	SO2	24-HR	ALL	1ST	11.47	491074.7	3184328	5.95	ORLANDO_2003.SFC
AERMOD	Seminole03_00_SO2.USF	SO2	24-HR	ALL	1ST	9.26	491185.3	3184168	6	ORLANDO_2000.SFC
AERMOD	Seminole03_02_SO2.USF	SO2	24-HR	ALL	1ST	7.95	491074.7	3184328	5.95	ORLANDO_2002.SFC
AERMOD	Seminole03_01_SO2.USF	SO2	24-HR	FLARES	1ST	0.326	492194	3184476	5.88	ORLANDO_2001.SFC
AERMOD	Seminole03_03_SO2.USF	SO2	24-HR	FLARES	1ST	0.227	492300	3184400	6.03	ORLANDO_2003.SFC
AERMOD	Seminole03_02_SO2.USF	SO2	24-HR	FLARES	1ST	0.211	492300	3184400	6.03	ORLANDO_2002.SFC
AERMOD	Seminole03_99_SO2.USF	SO2	24-HR	FLARES	1ST	0.181	491874	3185028	4.53	ORLANDO_1999.SFC
AERMOD	Seminole03_00_SO2.USF	SO2	24-HR	FLARES	1ST	0.153	492194	3184476	5.88	ORLANDO_2000.SFC
AERMOD	Seminole03_01_SO2.USF	SO2	24-HR	SEMNRG	1ST	13.67	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03_99_SO2.USF	SO2	24-HR	SEMNRG	1ST	11.67	491074.7	3184328	5.95	ORLANDO_1999.SFC
AERMOD	Seminole03_03_SO2.USF	SO2	24-HR	SEMNRG	1ST	11.46	491074.7	3184328	5.95	ORLANDO_2003.SFC
AERMOD	Seminole03_00_SO2.USF	SO2	24-HR	SEMNRG	1ST	9.26	491185.3	3184168	6	ORLANDO_2000.SFC
AERMOD	Seminole03_02_SO2.USF	SO2	24-HR	SEMNRG	1ST	7.94	491074.7	3184328	5.95	ORLANDO_2002.SFC

Appendix I-4

AERMOD Modeling Results (SO_2 3-Hour Significant Impact Analysis)

Model	File	Pollutant	Average	Group	Rank	Conc.	East(X)	North(Y)	Elev	Met File
AERMOD	Seminole03_00_SO2.USF	SO2	3-HR	ALL	1ST	26.21	491074.7	3184328	5.95	ORLANDO_2000.SFC
AERMOD	Seminole03_00_SO2.USF	SO2	3-HR	ALL	1ST	26.21	491074.7	3184328	5.95	ORLANDO_2000.SFC
AERMOD	Seminole03_99_SO2.USF	SO2	3-HR	ALL	1ST	24.69	491074.7	3184328	5.95	ORLANDO_1999.SFC
AERMOD	Seminole03_03_SO2.USF	SO2	3-HR	ALL	1ST	24.66	491019.3	3184408	5.81	ORLANDO_2003.SFC
AERMOD	Seminole03_02_SO2.USF	SO2	3-HR	ALL	1ST	24.29	491019.3	3184408	5.81	ORLANDO_2002.SFC
AERMOD	Seminole03_00_SO2.USF	SO2	3-HR	FLARES	1ST	0.625	492194	3184476	5.88	ORLANDO_2000.SFC
AERMOD	Seminole03_00_SO2.USF	SO2	3-HR	FLARES	1ST	0.625	492194	3184476	5.88	ORLANDO_2000.SFC
AERMOD	Seminole03_99_SO2.USF	SO2	3-HR	FLARES	1ST	0.598	492194	3184379	6	ORLANDO_1999.SFC
AERMOD	Seminole03_03_SO2.USF	SO2	3-HR	FLARES	1ST	0.541	492194	3184185	6.03	ORLANDO_2003.SFC
AERMOD	Seminole03_02_SO2.USF	SO2	3-HR	FLARES	1ST	0.526	492194	3184476	5.88	ORLANDO_2002.SFC
AERMOD	Seminole03_00_SO2.USF	SO2	3-HR	SEMNRG	1ST	26.21	491074.7	3184328	5.95	ORLANDO_2000.SFC
AERMOD	Seminole03_00_SO2.USF	SO2	3-HR	SEMNRG	1ST	26.21	491074.7	3184328	5.95	ORLANDO_2000.SFC
AERMOD	Seminole03_99_SO2.USF	SO2	3-HR	SEMNRG	1ST	24.69	491074.7	3184328	5.95	ORLANDO_1999.SFC
AERMOD	Seminole03_03_SO2.USF	SO2	3-HR	SEMNRG	1ST	24.65	491019.3	3184408	5.81	ORLANDO_2003.SFC
AERMOD	Seminole03_02_SO2.USF	SO2	3-HR	SEMNRG	1ST	24.24	491019.3	3184408	5.81	ORLANDO_2002.SFC

Appendix I-4

AERMOD Modeling Results (CO 1-Hour Significant Impact Analysis)

Model	File	Pollutant	Average	Group	Rank	Conc.	East(X)	North(Y)	Elev	Met File
AERMOD	Seminole03_02_CO.USF	CO	1-HR	ALL	1ST	421.38	491019.3	3184408	5.81	ORLANDO_2002.SFC
AERMOD	Seminole03_01_CO.USF	CO	1-HR	ALL	1ST	419.92	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03_99_CO.USF	CO	1-HR	ALL	1ST	416.81	491019.3	3184408	5.81	ORLANDO_1999.SFC
AERMOD	Seminole03_03_CO.USF	CO	1-HR	ALL	1ST	414.20	491019.3	3184408	5.81	ORLANDO_2003.SFC
AERMOD	Seminole03_00_CO.USF	CO	1-HR	ALL	1ST	413.29	491019.3	3184408	5.81	ORLANDO_2000.SFC
AERMOD	Seminole03_01_CO.USF	CO	1-HR	FLARES	1ST	14.75	492194	3184476	5.88	ORLANDO_2001.SFC
AERMOD	Seminole03_02_CO.USF	CO	1-HR	FLARES	1ST	14.12	492194	3184476	5.88	ORLANDO_2002.SFC
AERMOD	Seminole03_00_CO.USF	CO	1-HR	FLARES	1ST	13.53	492194	3184476	5.88	ORLANDO_2000.SFC
AERMOD	Seminole03_99_CO.USF	CO	1-HR	FLARES	1ST	13.00	492194	3184379	6	ORLANDO_1999.SFC
AERMOD	Seminole03_03_CO.USF	CO	1-HR	FLARES	1ST	11.32	492194	3184379	6	ORLANDO_2003.SFC
AERMOD	Seminole03_02_CO.USF	CO	1-HR	SEMNRG	1ST	421.26	491019.3	3184408	5.81	ORLANDO_2002.SFC
AERMOD	Seminole03_01_CO.USF	CO	1-HR	SEMNRG	1ST	419.83	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03_99_CO.USF	CO	1-HR	SEMNRG	1ST	416.67	491019.3	3184408	5.81	ORLANDO_1999.SFC
AERMOD	Seminole03_03_CO.USF	CO	1-HR	SEMNRG	1ST	414.16	491019.3	3184408	5.81	ORLANDO_2003.SFC
AERMOD	Seminole03_00_CO.USF	CO	1-HR	SEMNRG	1ST	413.21	491019.3	3184408	5.81	ORLANDO_2000.SFC

Appendix I-4

AERMOD Modeling Results (CO 8-Hour Significant Impact Analysis)

Model	File	Pollutant	Average	Group	Rank	Conc.	East(X)	North(Y)	Elev	Met File
AERMOD	Seminole03_01_CO.USF	CO	8-HR	ALL	1ST	281.04	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03_03_CO.USF	CO	8-HR	ALL	1ST	279.06	491130	3184248	6	ORLANDO_2003.SFC
AERMOD	Seminole03_00_CO.USF	CO	8-HR	ALL	1ST	278.28	490964	3184488	5.8	ORLANDO_2000.SFC
AERMOD	Seminole03_99_CO.USF	CO	8-HR	ALL	1ST	227.80	491074.7	3184328	5.95	ORLANDO_1999.SFC
AERMOD	Seminole03_02_CO.USF	CO	8-HR	ALL	1ST	217.15	491074.7	3184328	5.95	ORLANDO_2002.SFC
AERMOD	Seminole03_03_CO.USF	CO	8-HR	FLARES	1ST	6.10	492194	3184088	6.36	ORLANDO_2003.SFC
AERMOD	Seminole03_99_CO.USF	CO	8-HR	FLARES	1ST	5.73	491874	3185028	4.53	ORLANDO_1999.SFC
AERMOD	Seminole03_02_CO.USF	CO	8-HR	FLARES	1ST	5.51	492194	3184476	5.88	ORLANDO_2002.SFC
AERMOD	Seminole03_01_CO.USF	CO	8-HR	FLARES	1ST	5.51	492194	3184476	5.88	ORLANDO_2001.SFC
AERMOD	Seminole03_00_CO.USF	CO	8-HR	FLARES	1ST	4.81	492300	3184400	6.03	ORLANDO_2000.SFC
AERMOD	Seminole03_01_CO.USF	CO	8-HR	SEMNRG	1ST	280.49	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03_03_CO.USF	CO	8-HR	SEMNRG	1ST	279.06	491130	3184248	6	ORLANDO_2003.SFC
AERMOD	Seminole03_00_CO.USF	CO	8-HR	SEMNRG	1ST	276.61	490964	3184488	5.8	ORLANDO_2000.SFC
AERMOD	Seminole03_99_CO.USF	CO	8-HR	SEMNRG	1ST	227.59	491074.7	3184328	5.95	ORLANDO_1999.SFC
AERMOD	Seminole03_02_CO.USF	CO	8-HR	SEMNRG	1ST	217.14	491074.7	3184328	5.95	ORLANDO_2002.SFC

Appendix I-4

AERMOD Modeling Results (PM_{10} Annual Significant Impact Analysis)

Model	File	Pollutant	Average	Group	Rank	Conc.	East(X)	North(Y)	Elev	Met File
AERMOD	Seminole03_01_PM10.USF	PM10	PERIOD	ALL	1ST	1.50	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03_02_PM10.USF	PM10	PERIOD	ALL	1ST	1.50	491019.3	3184408	5.81	ORLANDO_2002.SFC
AERMOD	Seminole03_03_PM10.USF	PM10	PERIOD	ALL	1ST	1.50	491019.3	3184408	5.81	ORLANDO_2003.SFC
AERMOD	Seminole03_00_PM10.USF	PM10	PERIOD	ALL	1ST	1.37	491019.3	3184408	5.81	ORLANDO_2000.SFC
AERMOD	Seminole03_99_PM10.USF	PM10	PERIOD	ALL	1ST	1.20	491074.7	3184328	5.95	ORLANDO_1999.SFC
AERMOD	Seminole03_03_PM10.USF	PM10	PERIOD	FLARES	1ST	0.017	492014	3184908	4.9	ORLANDO_2003.SFC
AERMOD	Seminole03_99_PM10.USF	PM10	PERIOD	FLARES	1ST	0.016	492288.3	3184475	6	ORLANDO_1999.SFC
AERMOD	Seminole03_00_PM10.USF	PM10	PERIOD	FLARES	1ST	0.016	492288.3	3184475	6	ORLANDO_2000.SFC
AERMOD	Seminole03_01_PM10.USF	PM10	PERIOD	FLARES	1ST	0.016	492288.3	3184475	6	ORLANDO_2001.SFC
AERMOD	Seminole03_02_PM10.USF	PM10	PERIOD	FLARES	1ST	0.016	492288.3	3184475	6	ORLANDO_2002.SFC
AERMOD	Seminole03_01_PM10.USF	PM10	PERIOD	SEMNRG	1ST	1.49	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03_02_PM10.USF	PM10	PERIOD	SEMNRG	1ST	1.49	491019.3	3184408	5.81	ORLANDO_2002.SFC
AERMOD	Seminole03_03_PM10.USF	PM10	PERIOD	SEMNRG	1ST	1.49	491019.3	3184408	5.81	ORLANDO_2003.SFC
AERMOD	Seminole03_00_PM10.USF	PM10	PERIOD	SEMNRG	1ST	1.36	491019.3	3184408	5.81	ORLANDO_2000.SFC
AERMOD	Seminole03_99_PM10.USF	PM10	PERIOD	SEMNRG	1ST	1.19	491074.7	3184328	5.95	ORLANDO_1999.SFC

AERMOD Modeling Results (PM_{10} 24-Hour Significant Impact Analysis)

Model	File	Pollutant	Average	Group	Rank	Conc.	East(X)	North(Y)	Elev	Met File
AERMOD	Seminole03_03_PM10.USF	PM10	24-HR	ALL	1ST	16.89	491019.3	3184408	5.81	ORLANDO_2003.SFC
AERMOD	Seminole03_03_PM10.USF	PM10	24-HR	SEMNRG	1ST	16.83	491019.3	3184408	5.81	ORLANDO_2003.SFC
AERMOD	Seminole03_03_PM10.USF	PM10	24-HR	FLARES	1ST	0.384	492194	3184476	5.88	ORLANDO_2003.SFC

APPENDIX I-5

DATA FOR BACKGROUND EMISSION SOURCES INCLUDED IN THE MULTISOURCE MODEL

Appendix I-5
Background Emission Sources

Facility ID	Facility	Owner/Company Name	East (m)	North (m)	PM_{10} (tpy)	NO_X (tpy)	SO2 (tpy)	Distance (km)	Radius of SI	20D Value	Interacting Source?
0830070	FGTC01	Florida Gas Transmission Company	418800	3240900		789	14	91.80	0.9	1818	No
0830070	FGTC02	Florida Gas Transmission Company	418802	3240900		46	10	91.80	0.9	1818	No
0830070	FGTC03	Florida Gas Transmission Company	418804	3240900	17	62	16	91.80	0.9	1818	No
1050061	HHFP01	Holly Hills Fruit Products	441000	3115400			92	85.44	0.9	1691	No
1050014	SSS01	Standard Sand & Silica Co.	442800	3117300		10		82.85	0.9	1639	No
1050014	SSS02	Standard Sand & Silica Co.	442802	3117300		35	96	82.85	0.9	1639	No
1050014	SSS03	Standard Sand & Silica Co.	442804	3117300		68	409	82.84	0.9	1639	No
0090112	RACP01	R. A. Connor Paving, Inc.	527770	3110290		201		82.72	0.9	1636	No
0090021	UAFP01	US Air Force/Patrick AFB	538800	3120800		38	129	79.50	0.9	1572	No
0090049	APAC01	APAC-Southeast Inc. Central Fl. Division	532600	3120600	86	197	147	76.13	0.9	1505	No
0970077	FLGC01	Florida Gas Transmission Company	442220	3128490		66	9	74.44	0.9	1471	No
0970014	FPCD01	Florida Power Corporation	446300	3126000		12973	9574	73.78	0.9	1458	Yes
0970014	FPCD02	Florida Power Corporation	446302	3126000	389	5061	3949	73.78	0.9	1458	Yes
0970014	FPCD03	Florida Power Corporation	446304	3126000	136	3097	678	73.77	0.9	1457	Yes
0970014	FPCD04	Florida Power Corporation	446306	3126000	104	2117	1801	73.77	0.9	1457	Yes
0970071	REF01	Reliant Energy Florida, L.L.C.	490430	3111310	688	5214	1377	73.20	0.9	1446	Yes
0970034	CARG01	Cargill, Inc.	452170	3124790	39	15	79	71.36	0.9	1409	No
0970007	SVC01	SVC Manufacturing, Inc.	451100	3125800		22	22	71.12	0.9	1404	No
0970043	KUA01	Kissimmee Utility Authority	449810	3127900	195	803	88	70.15	0.9	1385	No
0970043	KUA02	Kissimmee Utility Authority	449812	3127900		1352	228	70.15	0.9	1385	No
0970043	KUA03	Kissimmee Utility Authority	449814	3127900		775	421	70.15	0.9	1385	No
0951219	OPC01	Orlando Paving Company	437870	3139970	34	82	61	69.51	0.9	1372	No
0090015	GIV01	Good IV - TKLC, INC.	529900	3127300		28	0	69.05	0.9	1363	No
0690008	EPWG01	Eagle Picher, Ind. (Wolverince Gasket Div.)	424200	3194100		10		67.72	0.9	1336	No
0970032	STS01	Soil Treatment Services	455500	3127100		44		67.63	0.9	1335	No
0690014	SSC01	Silver Springs Citrus, Inc.	424440	3176540		51	217	67.27	0.9	1327	No
0690014	SSC02	Silver Springs Citrus, Inc.	424442	3176540		18		67.27	0.9	1327	No
0690014	SSC03	Silver Springs Citrus, Inc.	424444	3176540		20		67.27	0.9	1327	No
0950111	WDWC01	Walt Disney World Company	442000	3139000		13		67.05	0.9	1323	No
0950111	WDWC02	Walt Disney World Company	442002	3139000	90	1105	125	67.05	0.9	1323	No
0950111	WDWC03	Walt Disney World Company	442004	3139000	2	23		67.05	0.9	1323	No
0950111	WDWC04	Walt Disney World Company	442006	3139000		2037	525	67.05	0.9	1323	Yes
0090029	COT01	Coastal Terminals, LLC	538900	3141900		8	22	63.93	0.9	1261	No
0090029	COT02	Coastal Terminals, LLC	538902	3141900		5	16	63.93	0.9	1261	No
0090029	COT03	Coastal Terminals, LLC	538904	3141900		13	45	63.93	0.9	1261	No

Appendix I-5
Background Emission Sources

Facility ID	Facility	Owner/Company Name	East (m)	North (m)	PM_{10} (tpy)	NO_X (tpy)	SO2 (tpy)	Distance (km)	Radius of SI	20D Value	Interacting Source?
0970001	KUT01	Kissimmee Utility Authority	460100	3129300		35	129	63.39	0.9	1250	**No**
0970001	KUT02	Kissimmee Utility Authority	460102	3129300		226	243	63.39	0.9	1250	**No**
0970001	KUT03	Kissimmee Utility Authority	460104	3129300		74	73	63.38	0.9	1250	**No**
0970001	KUT04	Kissimmee Utility Authority	460106	3129300		1029	1117	63.38	0.9	1250	**No**
0690039	CAMP01	C A Meyer Paving & Construction Co.	433600	3158300	17	27	110	63.32	0.9	1248	**No**
0690039	CAMP02	C A Meyer Paving & Construction Co.	433602	3158300		123	95	63.32	0.9	1248	**No**
0090012	OUC01	Orlando Utilities Commission	537800	3142200		27	138	62.91	0.9	1240	**No**
0090113	FPL01	Florida Power & Light	537600	3142000		27	152	62.90	0.9	1240	**No**
0970002	SCCP01	St Cloud City Power Plant	471800	3124900	7	556	14	62.70	0.9	1236	**No**
0970002	SCCP02	St Cloud City Power Plant	471802	3124900	95	880	117	62.70	0.9	1236	**No**
0970002	SCCP03	St Cloud City Power Plant	471804	3124900			19	62.70	0.9	1236	**No**
0970005	FDOA01	Florida Dept. of Agriculture	459510	3133290		4		60.25	0.9	1187	**No**
0970030	ASEI01	APAC-Southeast Inc Central Fl. Division	461000	3132700		121	333	59.99	0.9	1182	**No**
0090005	UAFC01	US Air Force/Cape Canaveral AFS	540810	3151870	10	5.	28	59.35	0.9	1169	**No**
0090005	UAFC02	US Air Force/Cape Canaveral AFS	540812	3151870			14	59.35	0.9	1169	**No**
0090005	UAFC03	US Air Force/Cape Canaveral AFS	540814	3151870			6	59.35	0.9	1169	**No**
0090005	UAFC04	US Air Force/Cape Canaveral AFS	540816	3151870			8	59.36	0.9	1169	**No**
0694801	LILP01	Lake Investment, L.P.	434000	3198800	306	3866	1467	59.00	0.9	1162	**Yes**
1270031	HPI01	Halifax Paving, Inc.	489240	3242810		87	125	58.33	0.9	1149	**No**
1270031	HPI02	Halifax Paving, Inc.	489242	3242810		158	232	58.33	0.9	1149	**No**
0950213	SWOF01	Sea World of Florida, Inc.	454900	3142500			3	55.55	0.9	1093	**No**
0090180	OPP01	Oleander Power Project, LP	520100	3137600	292	7119	1905	55.08	0.9	1084	**Yes**
0950053	LDCI01	Louis Dreyfus Citrus, Inc.	443800	3159500		23	99	53.63	0.9	1055	**No**
0950053	LDCI02	Louis Dreyfus Citrus, Inc.	443802	3159500		118	504	53.63	0.9	1055	**No**
0950053	LDCI03	Louis Dreyfus Citrus, Inc.	443804	3159500		75	424	53.63	0.9	1055	**No**
0950053	LDCI04	Louis Dreyfus Citrus, Inc.	443806	3159500	52	81	1293	53.62	0.9	1054	**Yes**
0950046	LHM01	Lockheed Martin Missiles & Fire Control	454500	3146200		6		53.08	0.9	1044	**No**
0950046	LHM02	Lockheed Martin Missiles & Fire Control	454502	3146200		6		53.08	0.9	1044	**No**
0090104	VPI01	VA Paving Inc.	522030	3142280		19	105	52.26	0.9	1027	**No**
0090051	NASA01	NASA	534200	3155000		39		52.12	0.9	1024	**No**
0090051	NASA02	NASA	534202	3155000		14	5	52.12	0.9	1024	**No**
0090051	NASA03	NASA	534204	3155000		3840		52.12	0.9	1024	**Yes**
0090051	NASA04	NASA	534206	3155000		47	17	52.12	0.9	1024	**No**
0090051	NASA05	NASA	534208	3155000		9	3	52.13	0.9	1025	**No**
0090051	NASA06	NASA	534210	3155000	19	53	19	52.13	0.9	1025	**No**

Appendix I-5
Background Emission Sources

Facility ID	Facility	Owner/Company Name	East (m)	North (m)	PM_{10} (tpy)	NO_X (tpy)	SO2 (tpy)	Distance (km)	Radius of SI	20D Value	Interacting Source?
0090051	NASA07	NASA	534212	3155000		4		52.13	0.9	1025	**No**
0690067	NOPI01	Natural Organic Products International	439150	3184640		9		52.09	0.9	1024	**No**
0950044	SPC01	Sonoco Products Co.	460700	3142400		147		52.02	0.9	1022	**No**
0950125	FPS01	FP Spiralkote Inc.	461370	3142050		3		51.91	0.9	1020	**No**
0950055	ICSF01	ICS-FL, LLC	439800	3178100		5		51.84	0.9	1019	**No**
1270090	IFI01	Imperial Foam & Insulation MFG. Co.	485000	3235600		3	10	51.47	0.9	1011	**No**
0950022	MCI01	Metro Crematory Inc.	446900	3158800		2		51.25	0.9	1007	**No**
0950182	CFF01	Central Florida Fuels, Inc.	446000	3160600		3	3	51.17	0.9	1005	**No**
0950168	JPBS01	Jancy Pet Burial Service	440300	3181300		11		51.04	0.9	1003	**No**
0950230	CRC01	Complete Resources Co.	461710	3143120		3		50.84	0.9	999	**No**
0090069	BCBC01	Brevard County Board of Commisioners	516300	3140400		15		50.73	0.9	997	**No**
0950068	MM01	Monterey Mushrooms	441380	3180200		31	28	50.05	0.9	983	**No**
0950203	OCL01	Orlando Cogen Limited, L.P.	459500	3146100	45	302	12	49.83	0.9	979	**No**
0950190	FGCO01	Florida Gas Transmission Company	451800	3154800		848	14	49.38	0.9	970	**No**
0950190	FGCO02	Florida Gas Transmission Company	451802	3154800	4	46	2	49.38	0.9	970	**No**
0950190	FGCO03	Florida Gas Transmission Company	451804	3154800	2	25	8	49.37	0.9	969	**No**
0950276	WMP01	Woodlawn Memorial Park and Funeral	450570	3156650		3		49.30	0.9	968	**No**
1270006	DWP01	D&W Paving	496400	3233300		5		49.06	0.9	963	**No**
1270011	HHS01	Halifax Humane Society	494810	3233160		4		48.78	0.9	958	**No**
7775087	INDE01	Independence Excavatinc, Inc.	463690	3144260	18			48.78	0.9	958	**No**
0950136	TCI01	Trailer Conditioners, Inc.	464100	3144300		3		48.51	0.9	952	**No**
0950136	TCI02	Trailer Conditioners, Inc.	464102	3144300	13			48.51	0.9	952	**No**
0090006	FPL01	Florida Power & Light (PCC)	522900	3148900		15859	96362	47.65	0.9	935	**Yes**
0950031	OPC01	Orlando Paving Company	463270	3146010		109	102	47.59	0.9	934	**No**
0950149	GMG01	Greenbrier Memorial Gardens	444230	3180710		10	7	47.16	0.9	925	**No**
1270074	CCI01	Crane Cams Inc.	491900	3231600		2		47.09	0.9	924	**No**
0950251	ACC01	ACCO	445330	3174150		23	8	47.06	0.9	923	**No**
0950184	GOAA01	Greater Orlando Aviation Authority	467300	3145000		3929	258	46.20	0.9	906	**Yes**
0950184	GOAA02	Greater Orlando Aviation Authority	467302	3145000		23	47	46.20	0.9	906	**No**
0950184	GOAA03	Greater Orlando Aviation Authority	467304	3145000		3	3	46.19	0.9	906	**No**
1270010	HMC01	Halifax Medical Center	494800	3230100		31		45.73	0.9	897	**No**
0950169	STI01	Stericycle Inc.	449500	3168000	6	21		44.89	0.9	880	**No**
0090196	REF01	Reliant Energy Florida, L.L.C.	521500	3151600	1105	5854	34314	44.71	0.9	876	**Yes**
0090196	REF02	Reliant Energy Florida, L.L.C.	521502	3151600	1185	6263	36723	44.71	0.9	876	**Yes**
0090008	OUC01	Orlando Utilities Commission	521300	3151700	90	1696	1251	44.50	0.9	872	**Yes**

Appendix I-5
Background Emission Sources

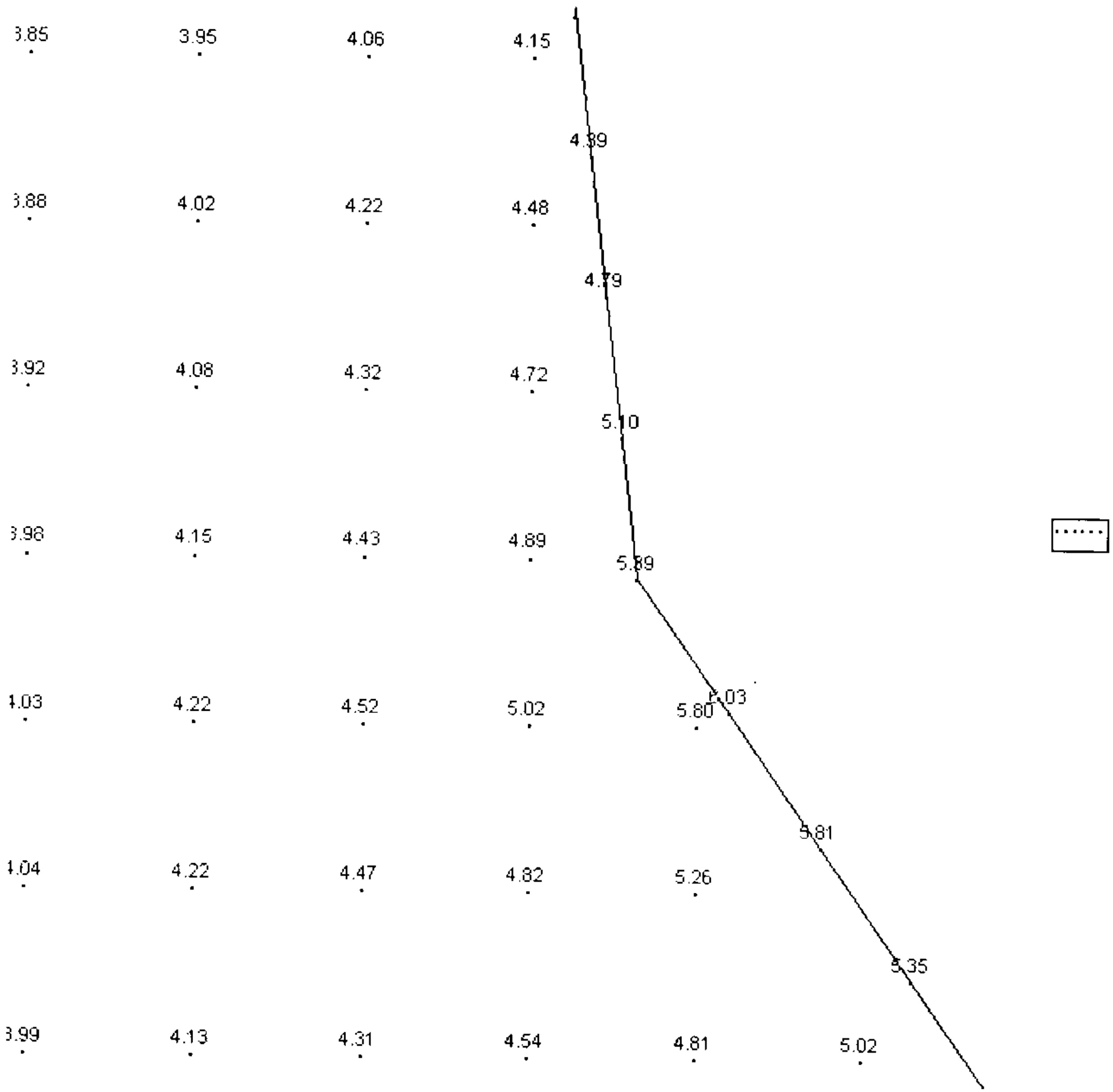
Facility ID	Facility	Owner/Company Name	East (m)	North (m)	PM_{10} (tpy)	NO_X (tpy)	SO2 (tpy)	Distance (km)	Radius of SI	20D Value	Interacting Source?
0090008	OUC02	Orlando Utilities Commission	521302	3151700	994	3205	3817	44.50	0.9	872	Yes
0950088	KBN01	Kerry's Bromeliad Nursery FKA Fernlea	451100	3167700		50	301	43.52	0.9	852	No
0950088	KBN02	Kerry's Bromeliad Nursery FKA Fernlea	451102	3167700			605	43.52	0.9	852	No
0950058	ABC01	A1 Block Corp.	462500	3155000		4		41.19	0.9	806	No
0950050	HCC01	Hydro Conduit Corp.	454600	3167800			7	40.27	0.9	787	No
7775075	ARM01	Angelo's Recycled Materials, Inc.	454870	3167860		80		40.00	0.9	782	No
0950156	OPC01	Orlando Paving Co.	455800	3167100		162	186	39.49	0.9	772	No
0950078	FL01	Frito-Lay	459550	3161010		26		39.45	0.9	771	No
0090043	ASO01	Astrotech Space Operations, Inc.	517400	3155700		2		38.91	0.9	760	No
1270117	VSWM01	Volusia Solid Waste Management Division	490210	3222890		47	29	38.39	0.9	750	No
1270117	VSWM02	Volusia Solid Waste Management Division	490212	3222890		88	22	38.39	0.9	750	No
0950063	FH01	Florida Hospital	463800	3160700		16		36.33	0.9	709	No
0950137	OUC01	Orlando Utilities Commission	483500	3150600		58	185	34.78	0.9	678	No
0950137	OUC02	Orlando Utilities Commission	483502	3150600	1025	3505	2343	34.78	0.9	678	Yes
0950137	OUC03	Orlando Utilities Commission	483504	3150600	375	25716	67393	34.78	0.9	678	Yes
1270003	NSBU01	New Smyrna Beach Utilities	505760	3214800		178		33.59	0.9	654	No
0950014	FBCD01	Florida Power Corp.	475200	3156800		661	1092	32.02	0.9	622	Yes
1270034	MFC01	Mid Florida Crematory	474500	3211000		2		31.34	0.9	609	No
1270004	NSBP01	New Smyrna Beach Power Plant	507700	3209800		170	9	30.17	0.9	585	No
1270004	NSBP02	New Smyrna Beach Power Plant	507702	3209800		1087	56	30.18	0.9	586	Yes
1270004	NSBP03	New Smyrna Beach Power Plant	507704	3209800		653	34	30.18	0.9	586	Yes
1270164	UCNS01	Utilities Commission, City of New Smyrna	506670	3209540	179	946	180	29.40	0.9	570	Yes
1270028	FPCO01	Florida Power Corp.	467500	3197200	809	14480	25754	26.92	0.9	520	Yes
1270028	FPCO02	Florida Power Corp.	467502	3197200	263	5113	19447	26.92	0.9	520	Yes
1270009	FPL01	Florida Power & Light (PSN)	468300	3190300	350	12071	1868	23.66	0.9	455	Yes
1270009	FPL02	Florida Power & Light (PSN)	468302	3190300		3228	19874	23.66	0.9	455	Yes
1270085	SIS01	Stationary Incinerator Services	506500	3201800		88	2	23.06	0.9	443	No
1170027	FEI01	Florida Extruders International Inc.	471100	3186300		22		20.22	0.9	386	No
1270020	FPCB01	Florida Power Corp.	473400	3193300	634	6858	5431	19.89	0.9	380	Yes
1170030	OPC01	Orlando Paving Co.	471800	3184700	31	96	102	19.44	0.9	371	No
1170018	DC01	Datamax Corp.	474800	3181300		2		16.75	0.9	317	No

Appendix I-5
Background Emission Sources Included in the Multisource Model

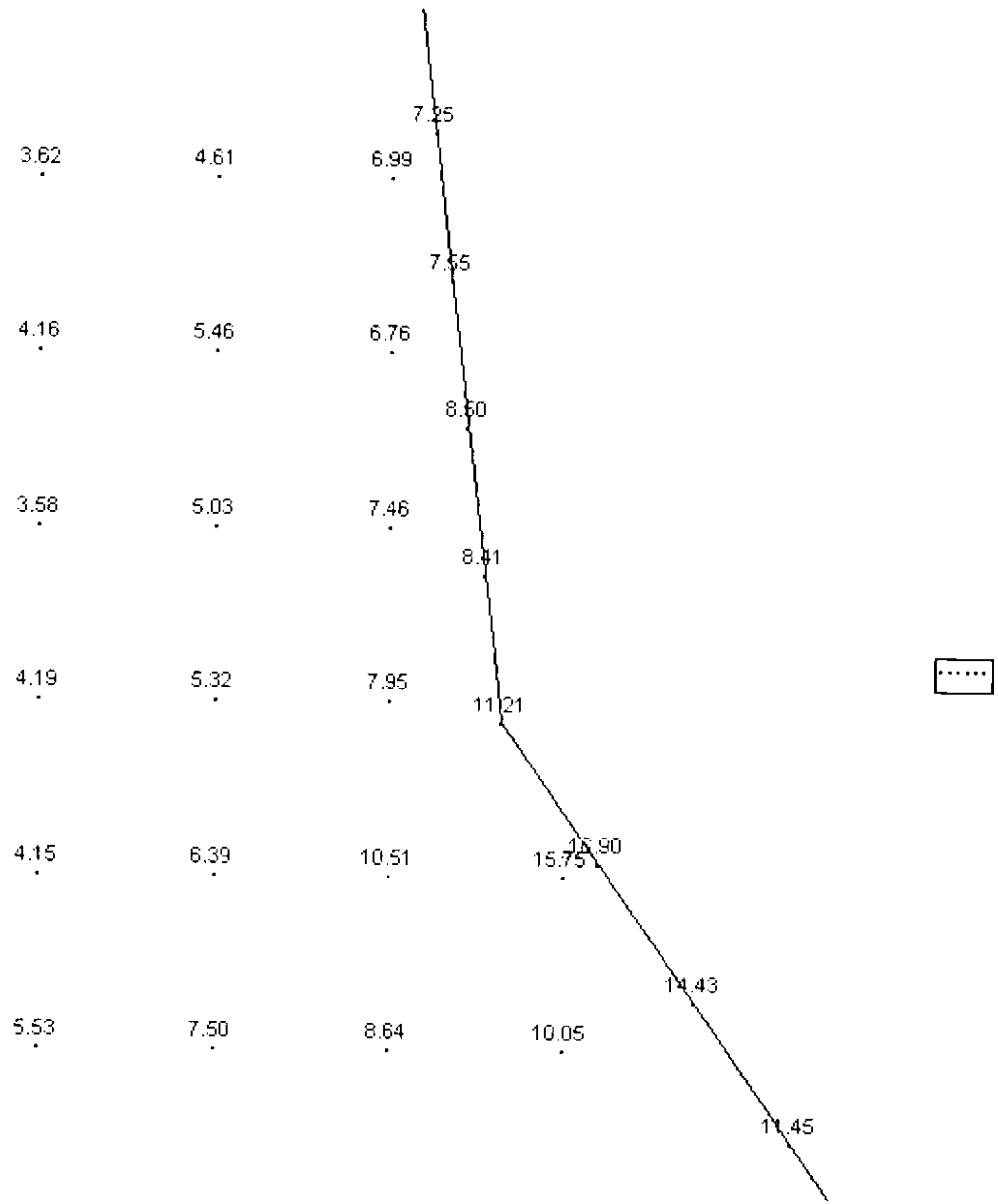
Facility ID	Facility	Owner/Company Name	East (m)	North (m)	Stack Ht (m)	Exit Temp (K)	Velocity (m/s)	Diam (m)	PM_{10} (g/s)	NO_X (g/s)	SO2 (g/s)	Distance (km)
0970014	FPCD01	Florida Power Corporation	446300	3126000	13.7	677.4	53.3	4.46		373.20	275.40	73.78
0970014	FPCD02	Florida Power Corporation	446302	3126000	15.2	834.7	53.1	4.19	11.20	145.60	113.60	73.78
0970014	FPCD03	Florida Power Corporation	446304	3126000	17.1	806.9	35.8	4.91	3.90	89.10	19.50	73.77
0970014	FPCD04	Florida Power Corporation	446306	3126000	22.9	829.7	42.5	5.79	3.00	60.90	51.80	73.77
0970071	REF01	Reliant Energy Florida, L.L.C.	490430	3111310	22.9	857.4	49.2	5.49	19.80	150.00	39.60	73.20
0950111	WDWC04	Walt Disney World Co.	442006	3139000	19.8	413.6	15.8	3.38		58.60	15.10	67.05
0694801	LILP01	Lake Investment, LP	434000	3198800	24.4	298.0	0.2	3.05	8.80	111.20	42.20	59.00
0090180	OPP01	Oleander Power Project, LP	520100	3137600	18.3	874.7	34.3	6.71	8.40	204.80	54.80	55.08
0950053	LDCI04	Louis Dreyfus Citrus, Inc.	443806	3159500	37.8	349.7	14.9	1.19	1.49	2.33	37.20	53.62
0090051	NASA03	NASA	534204	3155000	6.7	810.8	22.0	0.30		110.47		52.12
0090006	FPL01	Florida Power & Light (PCC)	522900	3148900	121.0	414.7	22.4	5.70		456.20	2772.00	47.65
0950184	GOAA01	Greater Orlando Aviation Authority	467300	3145000	4.6	388.6	3.9	0.30		113.02	7.43	46.20
0090196	REF01	Reliant Energy Florida, L.L.C.	521500	3151600	91.4	435.8	26.2	4.27	31.80	168.40	987.10	44.71
0090196	REF02	Reliant Energy Florida, L.L.C.	521502	3151600	91.4	444.1	32.7	4.30	34.09	180.16	1056.39	44.71
0090008	OUC01	Orlando Utilities Commission	521300	3151700	11.0	830.2	33.3	3.77	2.60	48.80	36.00	44.50
0090008	OUC02	Orlando Utilities Commission	521302	3151700	15.5	813.6	26.1	6.74	28.60	92.20	109.80	44.50
0950137	OUC02	Orlando Utilities Commission	483502	3150600	48.8	414.7	22.9	5.79	29.48	100.83	67.41	34.78
0950137	OUC03	Orlando Utilities Commission	483504	3150600	167.6	324.1	23.5	5.79	10.80	739.76	1938.68	34.78
0950014	FBCD01	Florida Power Corporation	475200	3156800	12.5	788.6	41.8	2.50		19.01	31.41	32.02
1270004	NSBP02	New Smyrna Beach Power Plant	507702	3209800	10.7	699.7	55.2	0.15		31.27	1.62	30.18
1270004	NSBP03	New Smyrna Beach Power Plant	507704	3209800	12.2	644.1	100.6	0.37		18.78	0.97	30.18
1270164	UCNS01	Utilities Commision, New Smyrna	506670	3209540	12.8	751.9	20.4	4.11	5.14	27.22	5.19	29.40
1270028	FPCO01	Florida Power Corporation	467500	3197200	13.7	838.6	52.9	5.39	23.29	416.55	740.87	26.92
1270028	FPCO02	Florida Power Corporation	467502	3197200	15.2	834.7	53.1	4.19	7.56	147.10	559.43	26.92
1270009	FPL01	Florida Power & Light (PSN)	468300	3190300	38.1	377.4	21.4	5.79	10.08	347.25	53.73	23.66
1270009	FPL02	Florida Power & Light (PSN)	468302	3190300	92.0	421.9	46.7	2.90		92.86	571.72	23.66
1270020	FPCB01	Florida Power Corporation	473400	3193300	12.5	788.6	40.8	3.75	18.25	197.29	156.24	19.89

APPENDIX I-6

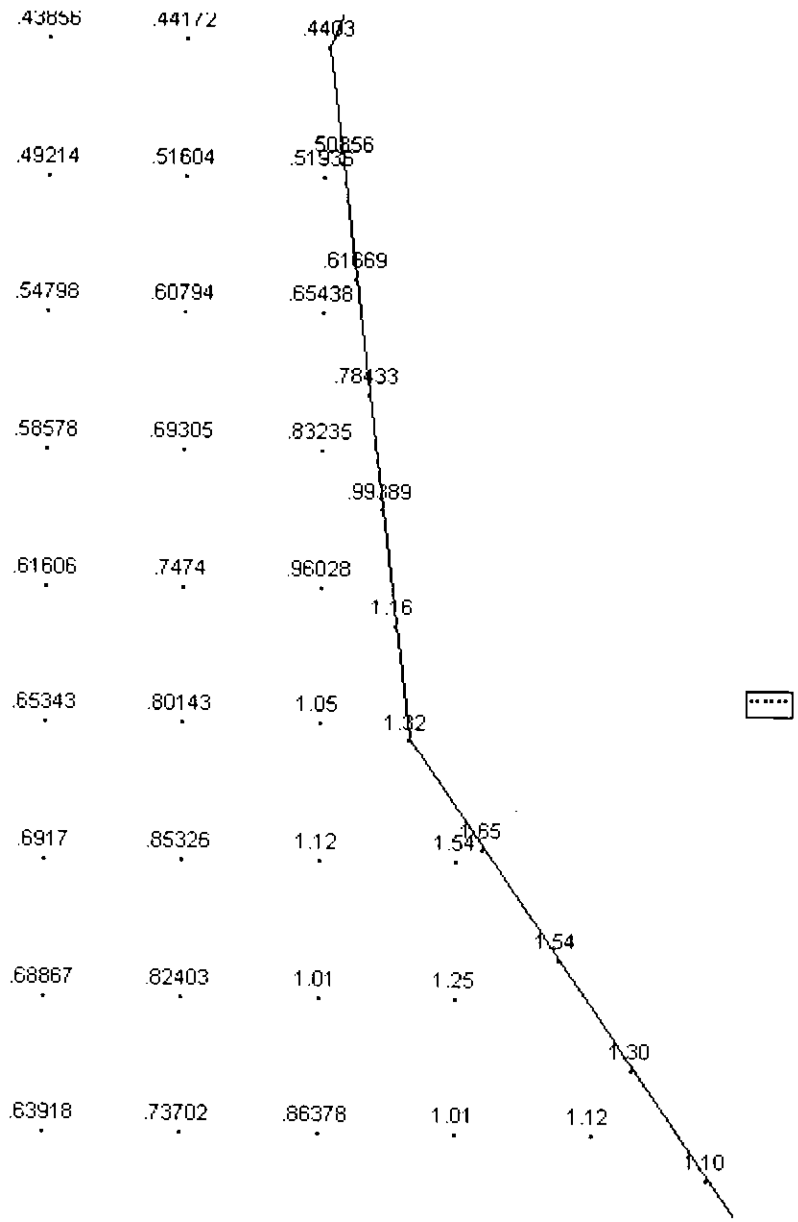
RESULTS OF PSD INCREMENT CONSUMPTION ANALYSIS



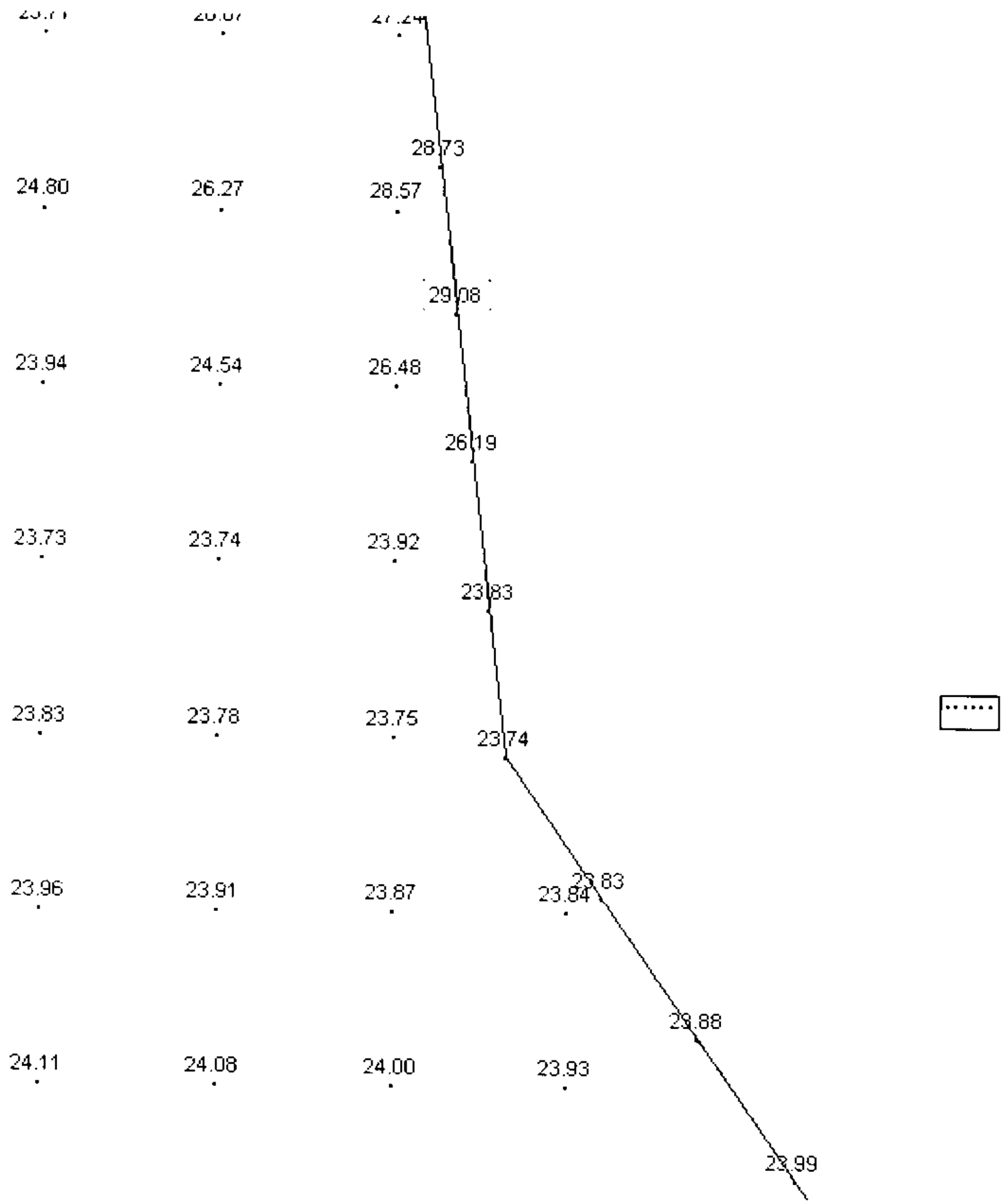
Maximum NO_X Annual



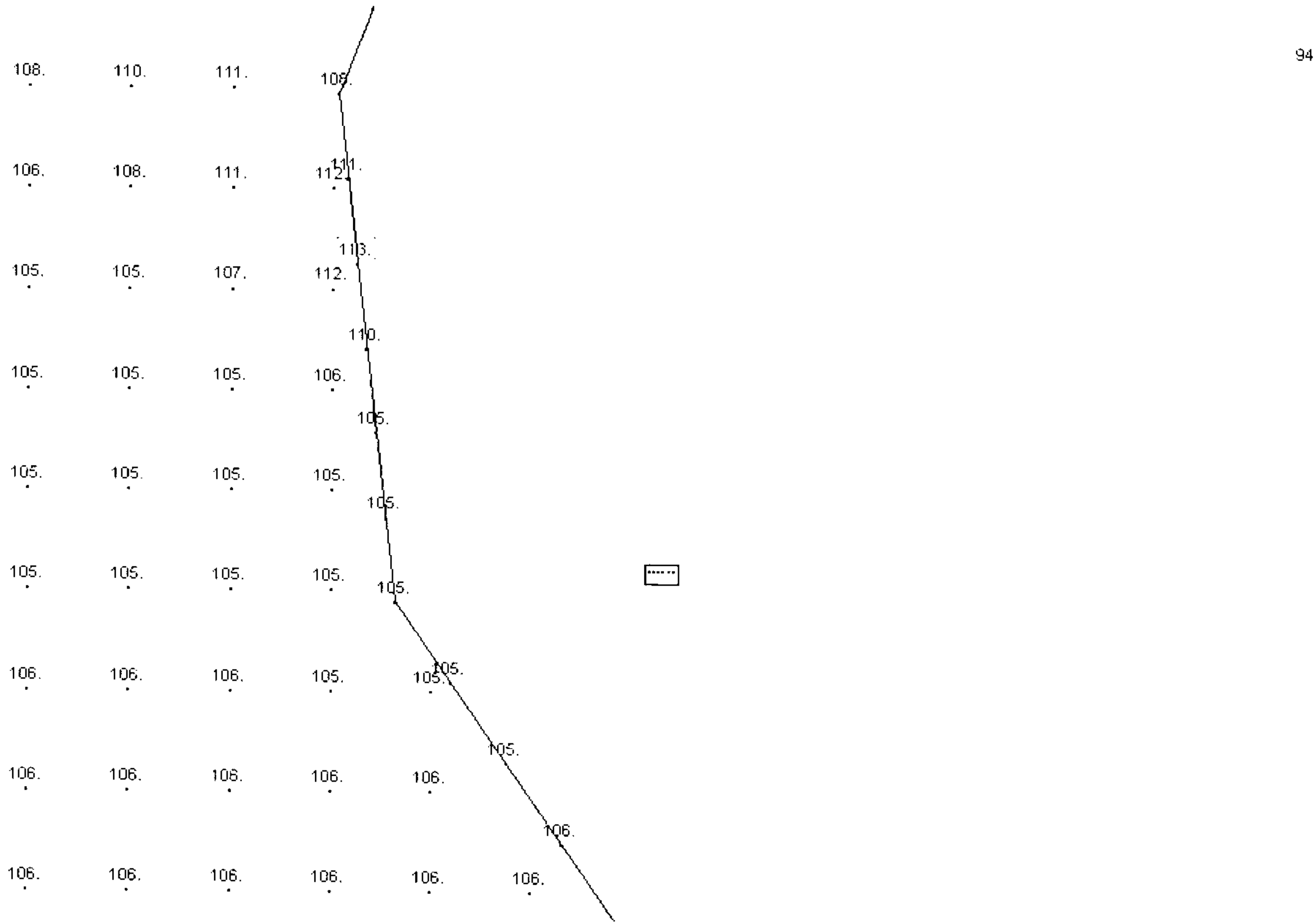
Maximum PM_{10} 24-Hour



Maximum PM_{10} Annual



SO_2 24-Hour 2nd High



SO_2 3-Hour 2nd High

Maximum SO_2 Annual

Appendix I-6

AERMOD Modeling Results (NO_X Annual PSD Increment Consumption Analysis)

Model	File	Pollutant	Average	Group	Rank	Conc.	East(X)	North(Y)	Elev	Met File
AERMOD	Seminole03a_01_NOX.USF	NOX	ANNUAL	ALL	1ST	6.03	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03a_00_NOX.USF	NOX	ANNUAL	ALL	1ST	5.99	491019.3	3184408	5.81	ORLANDO_2000.SFC
AERMOD	Seminole03a_02_NOX.USF	NOX	ANNUAL	ALL	1ST	5.87	491019.3	3184408	5.81	ORLANDO_2002.SFC
AERMOD	Seminole03a_99_NOX.USF	NOX	ANNUAL	ALL	1ST	5.54	491074.7	3184328	5.95	ORLANDO_1999.SFC
AERMOD	Seminole03a_03_NOX.USF	NOX	ANNUAL	ALL	1ST	5.38	491074.7	3184328	5.95	ORLANDO_2003.SFC
AERMOD	Seminole03a_00_NOX.USF	NOX	ANNUAL	BGSOURCE	1ST	3.42	490800	3184200	6	ORLANDO_2000.SFC
AERMOD	Seminole03a_03_NOX.USF	NOX	ANNUAL	BGSOURCE	1ST	3.42	489800	3183900	7	ORLANDO_2003.SFC
AERMOD	Seminole03a_99_NOX.USF	NOX	ANNUAL	BGSOURCE	1ST	3.34	490000	3185500	4.5	ORLANDO_1999.SFC
AERMOD	Seminole03a_01_NOX.USF	NOX	ANNUAL	BGSOURCE	1ST	3.27	490100	3183400	7	ORLANDO_2001.SFC
AERMOD	Seminole03a_02_NOX.USF	NOX	ANNUAL	BGSOURCE	1ST	3.25	492000	3183500	5.3	ORLANDO_2002.SFC
AERMOD	Seminole03a_03_NOX.USF	NOX	ANNUAL	FLARES	1ST	0.046	492014	3184908	4.9	ORLANDO_2003.SFC
AERMOD	Seminole03a_99_NOX.USF	NOX	ANNUAL	FLARES	1ST	0.044	492288.3	3184475	6	ORLANDO_1999.SFC
AERMOD	Seminole03a_00_NOX.USF	NOX	ANNUAL	FLARES	1ST	0.043	492194	3184476	5.88	ORLANDO_2000.SFC
AERMOD	Seminole03a_01_NOX.USF	NOX	ANNUAL	FLARES	1ST	0.042	492014	3184908	4.9	ORLANDO_2001.SFC
AERMOD	Seminole03a_02_NOX.USF	NOX	ANNUAL	FLARES	1ST	0.042	492014	3184908	4.9	ORLANDO_2002.SFC
AERMOD	Seminole03a_01_NOX.USF	NOX	ANNUAL	SEMNRG	1ST	2.79	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03a_02_NOX.USF	NOX	ANNUAL	SEMNRG	1ST	2.61	491019.3	3184408	5.81	ORLANDO_2002.SFC
AERMOD	Seminole03a_00_NOX.USF	NOX	ANNUAL	SEMNRG	1ST	2.56	491019.3	3184408	5.81	ORLANDO_2000.SFC
AERMOD	Seminole03a_99_NOX.USF	NOX	ANNUAL	SEMNRG	1ST	2.24	491074.7	3184328	5.95	ORLANDO_1999.SFC
AERMOD	Seminole03a_03_NOX.USF	NOX	ANNUAL	SEMNRG	1ST	2.03	491074.7	3184328	5.95	ORLANDO_2003.SFC

Appendix I-6

AERMOD Modeling Results (SO_2 Annual PSD Increment Consumption Analysis)

Model	File	Pollutant	Average	Group	Rank	Conc.	East(X)	North(Y)	Elev	Met File
AERMOD	Seminole03a_00_SO2.USF	SO2	ANNUAL	ALL	1ST	6.57	491019.3	3184408	5.81	ORLANDO_2000.SFC
AERMOD	Seminole03a_02_SO2.USF	SO2	ANNUAL	ALL	1ST	6.56	491019.3	3184408	5.81	ORLANDO_2002.SFC
AERMOD	Seminole03a_01_SO2.USF	SO2	ANNUAL	ALL	1ST	6.49	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03a_03_SO2.USF	SO2	ANNUAL	ALL	1ST	6.48	491074.7	3184328	5.95	ORLANDO_2003.SFC
AERMOD	Seminole03a_99_SO2.USF	SO2	ANNUAL	ALL	1ST	6.17	491074.7	3184328	5.95	ORLANDO_1999.SFC
AERMOD	Seminole03a_03_SO2.USF	SO2	ANNUAL	BGSOURCE	1ST	5.66	489800	3183900	7	ORLANDO_2003.SFC
AERMOD	Seminole03a_02_SO2.USF	SO2	ANNUAL	BGSOURCE	1ST	5.56	490500	3183100	6.8	ORLANDO_2002.SFC
AERMOD	Seminole03a_00_SO2.USF	SO2	ANNUAL	BGSOURCE	1ST	5.50	491200	3183000	5.8	ORLANDO_2000.SFC
AERMOD	Seminole03a_01_SO2.USF	SO2	ANNUAL	BGSOURCE	1ST	5.38	490200	3183300	7	ORLANDO_2001.SFC
AERMOD	Seminole03a_99_SO2.USF	SO2	ANNUAL	BGSOURCE	1ST	5.24	489900	3185300	6.1	ORLANDO_1999.SFC
AERMOD	Seminole03a_03_SO2.USF	SO2	ANNUAL	FLARES	1ST	0.015	492014	3184908	4.9	ORLANDO_2003.SFC
AERMOD	Seminole03a_99_SO2.USF	SO2	ANNUAL	FLARES	1ST	0.014	492288.3	3184475	6	ORLANDO_1999.SFC
AERMOD	Seminole03a_00_SO2.USF	SO2	ANNUAL	FLARES	1ST	0.014	492194	3184476	5.88	ORLANDO_2000.SFC
AERMOD	Seminole03a_01_SO2.USF	SO2	ANNUAL	FLARES	1ST	0.014	492014	3184908	4.9	ORLANDO_2001.SFC
AERMOD	Seminole03a_02_SO2.USF	SO2	ANNUAL	FLARES	1ST	0.013	492014	3184908	4.9	ORLANDO_2002.SFC
AERMOD	Seminole03a_01_SO2.USF	SO2	ANNUAL	SEMNRG	1ST	1.21	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03a_02_SO2.USF	SO2	ANNUAL	SEMNRG	1ST	1.13	491019.3	3184408	5.81	ORLANDO_2002.SFC
AERMOD	Seminole03a_00_SO2.USF	SO2	ANNUAL	SEMNRG	1ST	1.11	491019.3	3184408	5.81	ORLANDO_2000.SFC
AERMOD	Seminole03a_99_SO2.USF	SO2	ANNUAL	SEMNRG	1ST	0.968	491074.7	3184328	5.95	ORLANDO_1999.SFC
AERMOD	Seminole03a_03_SO2.USF	SO2	ANNUAL	SEMNRG	1ST	0.877	491074.7	3184328	5.95	ORLANDO_2003.SFC

Appendix I-6

AERMOD Modeling Results (SO_2 24-Hour 2nd High PSD Increment Consumption Analysis)

Model	File	Pollutant	Average	Group	Rank	Conc.	East(X)	North(Y)	Elev	Met File
AERMOD	Seminole03a (psd)_00_SO2.USF	SO2	24-HR	ALL	2ND	29.08	490934	3184741	5.67	ORLANDO_2000.SFC
AERMOD	Seminole03a (psd)_01_SO2.USF	SO2	24-HR	ALL	2ND	26.10	490924	3184825	5.51	ORLANDO_2001.SFC
AERMOD	Seminole03a (psd)_03_SO2.USF	SO2	24-HR	ALL	2ND	25.89	490944	3184657	5.82	ORLANDO_2003.SFC
AERMOD	Seminole03a (psd)_99_SO2.USF	SO2	24-HR	ALL	2ND	25.04	490934	3184741	5.67	ORLANDO_1999.SFC
AERMOD	Seminole03a (psd)_02_SO2.USF	SO2	24-HR	ALL	2ND	21.47	490944	3184657	5.82	ORLANDO_2002.SFC
AERMOD	Seminole03a (psd)_00_SO2.USF	SO2	24-HR	BGSOURCE	2ND	25.45	490800	3183000	6	ORLANDO_2000.SFC
AERMOD	Seminole03a (psd)_01_SO2.USF	SO2	24-HR	BGSOURCE	2ND	25.28	492000	3183100	4.5	ORLANDO_2001.SFC
AERMOD	Seminole03a (psd)_99_SO2.USF	SO2	24-HR	BGSOURCE	2ND	24.13	490200	3183300	7	ORLANDO_1999.SFC
AERMOD	Seminole03a (psd)_03_SO2.USF	SO2	24-HR	BGSOURCE	2ND	23.37	492600	3185300	4.47	ORLANDO_2003.SFC
AERMOD	Seminole03a (psd)_02_SO2.USF	SO2	24-HR	BGSOURCE	2ND	20.68	492300	3185700	4.5	ORLANDO_2002.SFC
AERMOD	Seminole03a (psd)_01_SO2.USF	SO2	24-HR	FLARES	2ND	0.198	492194	3184379	6	ORLANDO_2001.SFC
AERMOD	Seminole03a (psd)_02_SO2.USF	SO2	24-HR	FLARES	2ND	0.162	492300	3184400	6.03	ORLANDO_2002.SFC
AERMOD	Seminole03a (psd)_03_SO2.USF	SO2	24-HR	FLARES	2ND	0.150	492149.6	3183999	6.29	ORLANDO_2003.SFC
AERMOD	Seminole03a (psd)_99_SO2.USF	SO2	24-HR	FLARES	2ND	0.140	492194	3184379	6	ORLANDO_1999.SFC
AERMOD	Seminole03a (psd)_00_SO2.USF	SO2	24-HR	FLARES	2ND	0.134	492154	3184788	4.91	ORLANDO_2000.SFC
AERMOD	Seminole03a (psd)_03_SO2.USF	SO2	24-HR	SEMNRG	2ND	10.20	491074.7	3184328	5.95	ORLANDO_2003.SFC
AERMOD	Seminole03a (psd)_01_SO2.USF	SO2	24-HR	SEMNRG	2ND	10.13	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03a (psd)_99_SO2.USF	SO2	24-HR	SEMNRG	2ND	9.12	491074.7	3184328	5.95	ORLANDO_1999.SFC
AERMOD	Seminole03a (psd)_00_SO2.USF	SO2	24-HR	SEMNRG	2ND	8.58	491185.3	3184168	6	ORLANDO_2000.SFC
AERMOD	Seminole03a (psd)_02_SO2.USF	SO2	24-HR	SEMNRG	2ND	7.07	491074.7	3184328	5.95	ORLANDO_2002.SFC

Appendix I-6

AERMOD Modeling Results (SO_2 3-Hour 2nd High PSD Increment Consumption Analysis)

Model	File	Pollutant	Average	Group	Rank	Conc.	East(X)	North(Y)	Elev	Met File
AERMOD	Seminole03a (psd)_01_SO2.USF	SO2	3-HR	ALL	2ND	113.20	490924	3184825	5.51	ORLANDO_2001.SFC
AERMOD	Seminole03a (psd)_99_SO2.USF	SO2	3-HR	ALL	2ND	100.11	492700	3183900	5	ORLANDO_1999.SFC
AERMOD	Seminole03a (psd)_02_SO2.USF	SO2	3-HR	ALL	2ND	98.64	491100	3183000	6	ORLANDO_2002.SFC
AERMOD	Seminole03a (psd)_03_SO2.USF	SO2	3-HR	ALL	2ND	98.59	490500	3183100	6.8	ORLANDO_2003.SFC
AERMOD	Seminole03a (psd)_00_SO2.USF	SO2	3-HR	ALL	2ND	87.61	492500	3185500	4.48	ORLANDO_2000.SFC
AERMOD	Seminole03a (psd)_01_SO2.USF	SO2	3-HR	BGSOURCE	2ND	108.41	491700	3183000	4.5	ORLANDO_2001.SFC
AERMOD	Seminole03a (psd)_99_SO2.USF	SO2	3-HR	BGSOURCE	2ND	100.10	492700	3183900	5	ORLANDO_1999.SFC
AERMOD	Seminole03a (psd)_02_SO2.USF	SO2	3-HR	BGSOURCE	2ND	98.64	491100	3183000	6	ORLANDO_2002.SFC
AERMOD	Seminole03a (psd)_03_SO2.USF	SO2	3-HR	BGSOURCE	2ND	98.58	490500	3183100	6.8	ORLANDO_2003.SFC
AERMOD	Seminole03a (psd)_00_SO2.USF	SO2	3-HR	BGSOURCE	2ND	87.59	492500	3185500	4.48	ORLANDO_2000.SFC
AERMOD	Seminole03a (psd)_02_SO2.USF	SO2	3-HR	FLARES	2ND	0.500	492194	3184476	5.88	ORLANDO_2002.SFC
AERMOD	Seminole03a (psd)_99_SO2.USF	SO2	3-HR	FLARES	2ND	0.487	492194	3184476	5.88	ORLANDO_1999.SFC
AERMOD	Seminole03a (psd)_03_SO2.USF	SO2	3-HR	FLARES	2ND	0.475	492194	3184185	6.03	ORLANDO_2003.SFC
AERMOD	Seminole03a (psd)_01_SO2.USF	SO2	3-HR	FLARES	2ND	0.473	492194	3184476	5.88	ORLANDO_2001.SFC
AERMOD	Seminole03a (psd)_00_SO2.USF	SO2	3-HR	FLARES	2ND	0.427	492288.3	3184475	6	ORLANDO_2000.SFC
AERMOD	Seminole03a (psd)_01_SO2.USF	SO2	3-HR	SEMNRG	2ND	25.84	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03a (psd)_03_SO2.USF	SO2	3-HR	SEMNRG	2ND	23.39	491074.7	3184328	5.95	ORLANDO_2003.SFC
AERMOD	Seminole03a (psd)_02_SO2.USF	SO2	3-HR	SEMNRG	2ND	22.11	491019.3	3184408	5.81	ORLANDO_2002.SFC
AERMOD	Seminole03a (psd)_00_SO2.USF	SO2	3-HR	SEMNRG	2ND	21.79	491074.7	3184328	5.95	ORLANDO_2000.SFC
AERMOD	Seminole03a (psd)_99_SO2.USF	SO2	3-HR	SEMNRG	2ND	21.63	491074.7	3184328	5.95	ORLANDO_1999.SFC

Appendix I-6

AERMOD Modeling Results (PM_{10} Annual PSD Increment Consumption Analysis)

Model	File	Pollutant	Average	Group	Rank	Conc.	East(X)	North(Y)	Elev	Met File
AERMOD	Seminole03a_01_PM10.USF	PM10	PERIOD	ALL	1ST	1.65	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03a_02_PM10.USF	PM10	PERIOD	ALL	1ST	1.65	491019.3	3184408	5.81	ORLANDO_2002.SFC
AERMOD	Seminole03a_03_PM10.USF	PM10	PERIOD	ALL	1ST	1.65	491019.3	3184408	5.81	ORLANDO_2003.SFC
AERMOD	Seminole03a_00_PM10.USF	PM10	PERIOD	ALL	1ST	1.54	491019.3	3184408	5.81	ORLANDO_2000.SFC
AERMOD	Seminole03a_99_PM10.USF	PM10	PERIOD	ALL	1ST	1.36	491074.7	3184328	5.95	ORLANDO_1999.SFC
AERMOD	Seminole03a_01_PM10.USF	PM10	PERIOD	SEMNRG	1ST	1.49	491019.3	3184408	5.81	ORLANDO_2001.SFC
AERMOD	Seminole03a_02_PM10.USF	PM10	PERIOD	SEMNRG	1ST	1.49	491019.3	3184408	5.81	ORLANDO_2002.SFC
AERMOD	Seminole03a_03_PM10.USF	PM10	PERIOD	SEMNRG	1ST	1.49	491019.3	3184408	5.81	ORLANDO_2003.SFC
AERMOD	Seminole03a_00_PM10.USF	PM10	PERIOD	SEMNRG	1ST	1.36	491019.3	3184408	5.81	ORLANDO_2000.SFC
AERMOD	Seminole03a_99_PM10.USF	PM10	PERIOD	SEMNRG	1ST	1.19	491074.7	3184328	5.95	ORLANDO_1999.SFC
AERMOD	Seminole03a_03_PM10.USF	PM10	PERIOD	FLARES	1ST	0.017	492014	3184908	4.9	ORLANDO_2003.SFC
AERMOD	Seminole03a_99_PM10.USF	PM10	PERIOD	FLARES	1ST	0.016	492288.3	3184475	6	ORLANDO_1999.SFC
AERMOD	Seminole03a_00_PM10.USF	PM10	PERIOD	FLARES	1ST	0.016	492288.3	3184475	6	ORLANDO_2000.SFC
AERMOD	Seminole03a_01_PM10.USF	PM10	PERIOD	FLARES	1ST	0.016	492288.3	3184475	6	ORLANDO_2001.SFC
AERMOD	Seminole03a_02_PM10.USF	PM10	PERIOD	FLARES	1ST	0.016	492288.3	3184475	6	ORLANDO_2002.SFC
AERMOD	Seminole03a_03_PM10.USF	PM10	PERIOD	BGSOURCE	1ST	0.171	490700	3186000	4.1	ORLANDO_2003.SFC
AERMOD	Seminole03a_00_PM10.USF	PM10	PERIOD	BGSOURCE	1ST	0.170	489800	3185100	6.3	ORLANDO_2000.SFC
AERMOD	Seminole03a_01_PM10.USF	PM10	PERIOD	BGSOURCE	1ST	0.170	489800	3185100	6.3	ORLANDO_2001.SFC
AERMOD	Seminole03a_02_PM10.USF	PM10	PERIOD	BGSOURCE	1ST	0.170	489800	3185100	6.3	ORLANDO_2002.SFC
AERMOD	Seminole03a_99_PM10.USF	PM10	PERIOD	BGSOURCE	1ST	0.164	490700	3186000	4.1	ORLANDO_1999.SFC

AERMOD Modeling Results (PM_{10} 24-Hour PSD Increment Consumption Analysis)

Model	File	Pollutant	Average	Group	Rank	Conc.	East(X)	North(Y)	Elev	Met File
AERMOD	Seminole03a_03_PM10.USF	PM10	24-HR	ALL	1ST	16.901	491019.3	3184408	5.81	ORLANDO_2003.SFC
AERMOD	Seminole03a_03_PM10.USF	PM10	24-HR	SEMNRG	1ST	16.833	491019.3	3184408	5.81	ORLANDO_2003.SFC
AERMOD	Seminole03a_03_PM10.USF	PM10	24-HR	FLARES	1ST	0.3835	492194	3184476	5.88	ORLANDO_2003.SFC
AERMOD	Seminole03a_03_PM10.USF	PM10	24-HR	BGSOURCE	1ST	0.9163	489900	3183700	7	ORLANDO_2003.SFC