Department of Environmental Protection

Division of Air Resource Management

APPLICATION FOR AIR PERMIT - LONG FORM

I. APPLICATION INFORMATION

Air Construction Permit – Use this form to apply for an air construction permit for a proposed project:

- subject to prevention of significant deterioration (PSD) review, nonattainment area (NAA) new source review, or maximum achievable control technology (MACT) review; or
- where the applicant proposes to assume a restriction on the potential emissions of one or more pollutants to escape a federal program requirement such as PSD review, NAA new source review, Title V, or MACT; or
- at an existing federally enforceable state air operation permit (FESOP) or Title V permitted facility.

Air Operation Permit – Use this form to apply for:

- an initial federally enforceable state air operation permit (FESOP); or
- an initial/revised/renewal Title V air operation permit.

Air Construction Permit & Revised/Renewal Title V Air Operation Permit (Concurrent Processing Option) – Use this form to apply for both an air construction permit and a revised or renewal Title V air operation permit incorporating the proposed project.

To ensure accuracy, please see form instructions.

Identification of Facility

1. Facility Owner/Company Name: **Cedar Bay Generating Company, L.P.**	
2. Site Name: **Cedar Bay Generating Plant**	
3. Facility Identification Number: **0310337**	
4. Facility Location...: Street Address or Other Locator: **9640 Eastport Road** City: **Jacksonville** County: **Duval** Zip Code: **32218**	
5. Relocatable Facility? ☐ Yes ☒ No	6. Existing Title V Permitted Facility? ☒ Yes ☐ No

Application Contact

1. Application Contact Name: **Jeffery Walker, Environmental Manager**
2. Application Contact Mailing Address... Organization/Firm: **Cedar Bay Generating Company, L.P.** Street Address: **9640 Eastport Road** City: **Jacksonville** State: **FL** Zip Code: **32218**
3. Application Contact Telephone Numbers... Telephone: **(904) 751-4000** ext.**147** Fax: **(904) 751-7320**
4. Application Contact Email Address: **Jeff.Walker@negt.com**

Application Processing Information (DEP Use)

1. Date of Receipt of Application:	
2. Project Number(s):	
3. PSD Number (if applicable):	
4. Siting Number (if applicable):	

APPLICATION INFORMATION

Purpose of Application

This application for air permit is submitted to obtain: (Check one)

Air Construction Permit

☐ Air construction permit.

Air Operation Permit

☐ Initial Title V air operation permit.
☐ Title V air operation permit revision.
☐ Title V air operation permit renewal.
☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is required.
☐ Initial federally enforceable state air operation permit (FESOP) where professional engineer (PE) certification is not required.

Air Construction Permit and Revised/Renewal Title V Air Operation Permit (Concurrent Processing)

☒ Air construction permit and Title V permit revision, incorporating the proposed project.
☐ Air construction permit and Title V permit renewal, incorporating the proposed project.

Note: By checking one of the above two boxes, you, the applicant, are requesting concurrent processing pursuant to Rule 62-213.405, F.A.C. In such case, you must also check the following box:

☒ I hereby request that the department waive the processing time requirements of the air construction permit to accommodate the processing time frames of the Title V air operation permit.

Application Comment

See Attachment. Application fee not applicable.

APPLICATION INFORMATION

Scope of Application

Emissions Unit ID Number	Description of Emissions Unit	Air Permit Type	Air Permit Proc. Fee
001	Circulating Fluidized Bed Boiler A	ACM1/AFMM	NA
002	Circulating Fluidized Bed Boiler B	ACM1/AFMM	NA
003	Circulating Fluidized Bed Boiler C	ACM1/AFMM	NA

Application Processing Fee

Check one: ☐ Attached - Amount: $_____ ☒ Not Applicable

APPLICATION INFORMATION

Owner/Authorized Representative Statement

Complete if applying for an air construction permit or an initial FESOP.

1. Owner/Authorized Representative Name :

2. Owner/Authorized Representative Mailing Address...
   Organization/Firm:
   Street Address:
   City: State: Zip Code:

3. Owner/Authorized Representative Telephone Numbers...
   Telephone: ( ) - ext. Fax: ( ) -

4. Owner/Authorized Representative Email Address:

5. Owner/Authorized Representative Statement:

   I, the undersigned, am the owner or authorized representative of the facility addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other requirements identified in this application to which the facility is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit.

   _____ _____
   Signature Date

APPLICATION INFORMATION

Application Responsible Official Certification

Complete if applying for an initial/revised/renewal Title V permit or concurrent processing of an air construction permit and a revised/renewal Title V permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name:
   Martin Kreft, General Manager

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):
   - ☒ For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.
   - ☐ For a partnership or sole proprietorship, a general partner or the proprietor, respectively.
   - ☐ For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.
   - ☐ The designated representative at an Acid Rain source.

3. Application Responsible Official Mailing Address...
   Organization/Firm: **Cedar Bay Generating Company, L.P.**
   Street Address: **9640 Eastport Road**
   City: **Jacksonville** State: **FL** Zip Code: **32218**

4. Application Responsible Official Telephone Numbers...
   Telephone: **(904) 751-4000** ext. Fax: **(904) 751-7320**

5. Application Responsible Official Email Address: **Martin.Kreft@negt.com**

6. Application Responsible Official Certification:

   I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the department upon sale or legal transfer of the facility or any permitted emissions unit. Finally, I certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

Martin Kreft
Signature

3-8-04
Date

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: **Kennard F. Kosky**
   Registration Number: **14996**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Golder Associates Inc.****
   Street Address: **6241 NW 23rd Street, Suite 500**
   City: **Gainesville** State: **FL** Zip Code: **32653-1500**
3. Professional Engineer Telephone Numbers...
   Telephone: **(352) 336-5600** ext.**516** Fax: **(352) 336-6603**
4. Professional Engineer Email Address: **kkosky@golder.com**
5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☐, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☒, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

Signature 3/4/04
Date

(seal)

* Attach any exception to certification statement.
** Board of Professional Engineers Certificate of Authorization #00001670

ATTACHMENT

APPLICATION ATTACHMENT - PART II
CEDAR BAY GENERATING COMPANY, L.P.

Introduction

Cedar Bay Generating Company, L.P. is seeking authorization from the Florida Department of Environmental Protection (FDEP) to use the solid byproduct from the water treatment process as a reactant in the circulating fluidized bed boilers. The authorization is being sought under Condition A.3(b)3. of the Title V Permit (Final Permit No. 0310337-002-AV). The solid byproduct is the filter cake from the lime softening system. The byproduct is very similar in reactivity to the limestone used to control sulfur dioxide (SO_2) emissions. The amount of byproduct would not exceed 12,000 tons per year (TPY). This amount would displace up to 10 percent of the total amount of limestone currently used in the three circulating fluidized bed (CFB) boilers. About 120,000 TPY of limestone is currently used.

Filter Cake

The filter cake is the solid byproduct from the water treatment system. Water from the steam host is used as makeup to the cooling towers for the facility. The water requires treatment prior to use. As part of the treatment process, lime and soda ash is used to clarify the water for use in the cooling towers. The solids are filtered through a filter press and contain high concentrations of calcium and magnesium, which are similar in concentrations to the limestone used in the CFB boilers to control SO_2. The composition of the filter cake and limestone is presented in Tables 1 and 2, respectively. The concentrations are presented in milligrams per kilogram (mg/kg), which are parts per million by weight (ppmw). As shown in these tables, the average calcium concentration of the filter cake is about 300,000 ppmw (or 30 percent), and the average concentration of the limestone is also about 300,000 ppmw.

The reactivity of the filter cake to act as a sorbent for SO_2 was determined using thermogravimetric analysis (TGA). This analysis procedure determined the amount of sorbent (limestone or filter cake) required to remove a pound of sulfur in the CFB process. The reactivity of the limestone was determined to be 5.3 pounds (lb) limestone/lb of sulfur while the reactivity of the filter cake was determined to be 4.2 lb filter cake/lb of sulfur. The TGA determined that the filter cake was slightly more reactive than the limestone in removing sulfur.

Tables 1 and 2 also present the concentration of trace constituents in the filter cake and limestone. For many analyses, the reported concentrations were below the detection method, which is identified in the tables. For concentrations below the reported detection method, one-half of the detection limits was used in determining the maximum or average concentrations of each constituent. As shown in these tables, the concentrations of the minor constituents in both the filter cake and limestone are low compared to calcium. It should be noted that for the filter cake the reported detection limits were higher for many constituents than that reported for limestone. The maximum and average for many of the trace constituent concentrations shown in Table 1 are artifacts of the detection limit and not necessarily the actual concentration shown.

The filter cake would be added either to the coal or limestone feeding operations. The filter cake has high moisture content (>50 percent), which would not result in any additional fugitive emissions.

Air Emissions

There would be no increase in total particulate matter/particulate matter less than 10 microns in size (PM/PM_{10}) emissions since the mechanism for formation would be similar for either the filter cake or the limestone. The three CFBs are controlled by high-efficiency baghouses that efficiently remove PM/PM_{10} generated in the process. However, there could be potential increases in some constituents making up the PM/PM_{10} emissions due to differences in constituent concentrations. To determine if there could be a difference, the air emissions of individual constituents making up the PM/PM_{10} resulting from the use of the filter cake were conservatively estimated. The comparison was based on the maximum potential emissions of PM/PM_{10} and the maximum amount of potential fly ash currently authorized by permit.

The maximum permitted PM/PM_{10} emissions are 234 TPY for the three CFB boilers (Condition A.5. of the Title V permit). It should be noted that the maximum actual PM/PM_{10} emissions are less than 200 TPY. The maximum amounts of coal and limestone usage are 1,170,000 and 320,000 TPY, respectively. These amounts make up the maximum inputs to the three CFB boilers and result in the PM/PM_{10} emissions. The resulting fly ash production is 336,000 TPY. The amount of PM/PM_{10} emissions attributed to boiler non-combustible input to the CFBs is estimated as 0.07 percent (234 tons PM/PM_{10}/year divided by 336,000 tons fly ash/year). The resulting amount of potential PM/PM_{10} from the 12,000 TPY of filter cake is 8.36 TPY (0.07/100 x 12,000 tons). Using this

conservative estimate of the total differential PM/PM_{10} emissions for the filter cake, annual emissions were calculated and presented in Tables 3 and 4 for the maximum and average concentrations. These tables also present the maximum and average differential emissions for the amount of limestone that would be displaced by the filter cake and the difference. As shown in the tables, the amount of individual constituents making up PM/PM_{10} emissions may increase, but only slightly and would not be measurable. In addition, the calculated increase in some of the constituent amounts that make up the PM/PM_{10} is likely an artifact of the detection limits and not necessarily an actual increase in that constituent.

CFB Boiler Coal, Limestone, and Filter Cake Inputs

The amount of trace constituents input to the CFB boilers from coal, limestone, and filter cake was calculated as an additional comparison. Table 5 presents the composition of the trace constituents in coal that have been determined over the last 5 years. This table also presents the maximum and average concentration of each constituent. As shown in the table, the concentration is variable.

Table 6 presents the calculated input of trace constituents into the three CFB boilers using as a basis the typical average usage of coal (i.e., 1,000,000 TPY) and limestone (120,000 TPY). The amount of limestone displaced by filter cake was the maximum amount being requested (12,000 TPY). It was assumed for the basis of the calculation that the filter cake would displace limestone in equal amounts although the reactivity of the filter cake was slightly higher. This resulted in 108,000 TPY of limestone usage. As shown in Table 6, the amount of trace constituents added to the three CFB boilers from the filter cake is very small relative to the amounts of these constituents in coal and limestone. For most constituents, the amount of each trace constituent contributed by the filter cake is an order of magnitude less than that contributed by coal and limestone. This comparison strongly suggests that the filter cake would not likely increase the amount of any trace constituent in the PM/PM_{10}.

Conclusion and Permit Condition Request

The water treatment filter cake is very similar to limestone as a sorbent of SO_2 emissions. There would be no increase in total PM/PM_{10} emissions since the mechanism for formation would be similar for either the filter cake or limestone. Based on a comparison of trace constituents in filter cake and limestone and the total amounts contributed by coal, limestone, and filter cake, the use of

12,000 TPY of filter cake would not alter the amount of trace constituents in PM/PM_{10} emissions. Cedar Bay Generating Company requests that Condition A.3(b)3. of the Title V Permit (Final Permit No. 0310337-002-AV) be amended to allow the use of the filter cake by adding a new condition as follows:

A.3. (d) Water Treatment Filter Cake. The maximum amount of water treatment filter cake shall not exceed 12,000 TPY.

Table 1. Filter Cake Concentrations (mg/kg), Cedar Bay Generating Company

	Filter Cake			
	2/26/1999	1/15/2004	Maximum	Average
Aluminum	120	1700	1700	910
Antimony	94	49 U	94	59.25
Arsenic	1.0 U	12 U	6	3.25
Barium	120	490 U	245	182.5
Beryllium	2.0 U	24 U	12	6.5
Cadmium	2.0 U	24 U	12	6.5
Calcium	290000	320000	320000	305000
Chromium	11	24 U	12	11.5
Cobalt	10 U	120 U	60	32.5
Copper	10 U	120 U	60	32.5
Iron	9000	29000	29000	19000
Lead	4.8	24 U	12	8.4
Magnesium	18000	34000	34000	26000
Manganese	400	230	400	315
Mercury	0.010 U	0.02 U	0.01	0.0075
Nickel	10 U	120 U	60	32.5
Potassium	26	610 U	305	165
Selenium	1.8	49 U	24.5	13.15
Silver	2.0 U	49 U	24.5	12.75
Sodium	1500	2200	2200	1850
Thallium	20	24 U	20	16
Vanadium	8.6	24 U	12	10.3
Zinc	19	120 U	60	39.5

Table 2. Limestone Concentrations (mg/kg), Cedar Bay Generating Company

	Limestone (mg/kg)										
	2/26/1999	9/9/1999	3/29/2000	12/20/2000	7/23/2001	3/18/2002	11/19//2002	8/26/2003	1/15/2004	Maximum	Average
Aluminum	90	93	20 U	36	160	62	98		90	160	79.88
Antimony	150	27	2.0 U	2.0 U	2.0 U	4.0 U	2.0 U		2.0 U	150	23.00
Arsenic	4.9	20	0.50 U	1.5	5.6	1.0 U	0.5 U	5.0 U	5.0 U	20	4.14
Barium	20 U	24 U	20 U	21	21 U	42	21 U	42 U	21 U	42	16.39
Beryllium	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U		1.0 U	1	0.56
Cadmium	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	2.0 U	1.0 U	2.0 U	10 U	5	1.33
Calcium	330000	360000	120000	260000	360000	340000	***840***		380000	380000	290001.43
Chromium	1.8	2.1	1.0 U	1.5	2.3	2.4	6.3	2.3	2.3	3.15	2.39
Cobalt	5.0 U	6.0 U	5.0 U	5.0 U	5.0 U	10 U	5.0 U		5.0 U	5	2.88
Copper	5.0 U		5.0 U	5.0 U	5.0 U	10 U	5.0 U		5.0 U	5	2.86
Iron	190 U	40	10 U	26	97	32	64		35	95	49.25
Lead	3	12 U	2.0 U	U*	5.0 U	4.0 U	1.0 U	10 U	10 U	6	3.13
Magnesium	1300	1800	510	960	1500	1200	150		1800	1800	1090.00
Manganese	1.0 U	1.0 U	1.0 U	1.0 U	2.9	2.4	7.1		1.0 U	7.1	1.86
Mercury	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.01 U	0.01 U	0.01 U	0.01 U	0.005	0.01
Nickel	5.0 U	9.5	5.0 U	5.0 U	5.0 U	10	6.8		5.0 U	10	4.85
Potassium	55	44	26	85	45	89	***4500***		99	99	615.88
Selenium	3.4	2.0 U	2.0 U	2.0 U	2.0 U	4.0 U	2.0 U	4.0 U	2.0 U	3.4	1.49
Silver	4	2.0 U	2.0 U	2.0 U	4.9	4.0 U	2.0 U	5.7	3.6	5.7	2.69
Sodium	2400	1700	780	2000	1700	5800	2400		3200	5800	2401.25
Thallium	48	10	1.0 U	1.0 U	1.7	2.3	1.0 U		1.0	48	8.06
Vanadium	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	14		1.0 U	14	2.25
Zinc	5.0 U	6.0 U	5.5	5.0 U	5.0 U	10	14		5.0 U	14	5.31

* - lead analysis diluted due to matrix interference

Considered outlier and not used in calculation of maximum or average.

Table 3. Comparison of Maximum Differential PM/PM_{10} Emissions for Filter Cake and Limestone

	Filter Cake		Limestone		
	Maximum (ppm)	Emissions (TPY)	Maximum (ppm)	Emissions (TPY)	Difference (TPY)
Aluminum	1,700	0.01421	160	0.00169	0.01252
Antimony	94	0.00079	150	0.00158	-0.00080
Arsenic	6	0.00005	20	0.00021	-0.00016
Barium	245	0.00205	42	0.00044	0.00160
Beryllium	12	0.00010	1	0.00001	0.00009
Cadmium	12	0.00010	5	0.00005	0.00005
Calcium	320,000	2.67429	380,000	4.00745	-1.33316
Chromium	12	0.00010	3	0.00003	0.00007
Cobalt	60	0.00050	5	0.00005	0.00045
Copper	60	0.00050	5	0.00005	0.00045
Iron	29,000	0.24236	95	0.00100	0.24136
Lead	12	0.00010	6	0.00006	0.00004
Magnesium	34,000	0.28414	1,800	0.01898	0.26516
Manganese	400	0.00334	7	0.00007	0.00327
Mercury	1.00E-02	8.36E-08	5.00E-03	5.27E-08	3.08E-08
Nickel	60	0.00050	10	0.00011	0.00040
Potassium	305	0.00255	99	0.00104	0.00150
Selenium	25	0.00020	3	0.00004	0.00017
Silver	25	0.00020	6	0.00006	0.00014
Sodium	2,200	0.01839	5,800	0.06117	-0.04278
Thallium	20	0.00017	48	0.00051	-0.00034
Vanadium	12	0.00010	14	0.00015	-0.00005
Zinc	60	0.00050	14	0.00015	0.00035

Table 4. Comparison of Average Differential PM/PM_{10} Emissions for Filter Cake and Limestone

	Filter Cake		Limestone		
	Average (ppm)	Emissions (TPY)	Average (ppm)	Emissions (TPY)	Difference (TPY)
Aluminum	910	0.00761	80	0.00084	0.00676
Antimony	59	0.00050	23	0.00024	0.00025
Arsenic	3	0.00003	4	0.00004	-0.00002
Barium	183	0.00153	16	0.00017	0.00135
Beryllium	7	0.00005	1	0.00001	0.00005
Cadmium	7	0.00005	1	0.00001	0.00004
Calcium	305,000	2.54893	290,001	3.05833	-0.50940
Chromium	12	0.00010	2	0.00003	0.00007
Cobalt	33	0.00027	3	0.00003	0.00024
Copper	33	0.00027	3	0.00003	0.00024
Iron	19,000	0.15879	49	0.00052	0.15827
Lead	8	0.00007	3	0.00003	0.00004
Magnesium	26,000	0.21729	1,090	0.01150	0.20579
Manganese	315	0.00263	2	0.00002	0.00261
Mercury	7.50E-03	6.27E-08	5.00E-03	5.27E-08	9.95E-09
Nickel	33	0.00027	5	0.00005	0.00022
Potassium	165	0.00138	616	0.00649	-0.00512
Selenium	13	0.00011	1	0.00002	0.00009
Silver	13	0.00011	3	0.00003	0.00008
Sodium	1,850	0.01546	2,401	0.02532	-0.00986
Thallium	16	0.00013	8	0.00009	0.00005
Vanadium	10	0.00009	2	0.00002	0.00006
Zinc	40	0.00033	5	0.00006	0.00027

Table 5. Coal Concentrations (mg/kg), Cedar Bay Generating Company

	Coal Analysis (mg/kg)											
	2/26/1999	5/13/1999	9/9/1999	3/29/2000	12/20/2000	7/23/2001	3/18/2002	11/19/2002	8/26/2003	1/15/2004	Maximum	Average
Aluminum	1200	900	640	950	200	1400	590	27 U		900	1400	847.50
Antimony	25 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U		4.0 U	12.5	2.39
Arsenic	14	4.9	1.0 U	10	3.1	6.9	0.50 U	0.50 U	4.8	4.1	14	4.88
Barium	84	44	28	80	25	120	47	22 U	66	220 U	120	61.50
Beryllium	1.2	1.0 U	1.0 U	1.2	1.0 U	1.7	1.4	1.0 U		11 U	5.5	1.44
Cadmium	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	0.5	0.55
Calcium	2200	850	870	1100	410	1300	460	520		1700	2200	1045.56
Chromium	5.6	1.5	3.7	6.1	1.0 U	6.1	6.9	1.0 U	7	11 U	7	4.34
Cobalt	5.4	5.0 U	5.0 U	5.0 U	6.0 U	6	5.7	5.0 U		11 U	6	3.84
Copper	24	12	6	11	6.3	15	15	5.0 U		54 U	27	13.20
Iron	19000 U	4400	3000	4600	1700	5700	3000	23		3700	9500	3958.11
Lead	*360*	4.6	2.0 I	6.6	2.5	6.8	6.6	1.0 U	6.3	11 U	6.6	4.38
Magnesium	460	280	200	270	110	370	160	100		260	460	245.56
Manganese	19	25	40	15	11	46	8	3.5 U		17	40	22.63
Mercury	0.022	0.035	0.023	0.033	0.046	0.016	0.028	0.041	0.12	0.029	0.12	0.04
Nickel	6	5.8	5.0 U	6.4	6.0 U	10	12	5.0 U		54 U	27	8.36
Potassium	260	200	140	290	580	300	470	2400		260	2400	544.44
Selenium	2.0 U	3.1	4.0 U	4	2.0 U	3	2	2.0 U	2.3	4.0 U	4	2.14
Silver	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	10 U	4.0 U	2.0 U	2.0 U	11 U	5.5	1.95
Sodium	60	72	33	71	30 U	35	65	1300		110	1300	195.67
Thallium	10 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	10 U	1.0 U		2.0 U	5	1.78
Vanadium	19	4.3	6	14	1.0 U	10	21	1.0 U		21	21	10.70
Zinc	18	30	6.0 U	14	6.0 U	17	19	23		12	30	15.44

U = compound was analyzed for but not detected to the level shown
I = analyte detected;value is between the Method Detection Level(MDL) and the Practical Quantitation Level(PQL)
Considered outlier and not used in calculation of maximum or average.

Table 6. Average Input of Trace Constituents for Coal, Filter Cake, and Limestone, Cedar Bay Generating Company

	Coal		Filter Cake		Limestone	
	Average (ppm)	Input (tons/year)	Average (ppm)	Input (tons/year)	Average (ppm)	Input (tons/year)
Aluminum	847.50	847.50	910.00	10.92	79.88	8.63
Antimony	2.39	2.39	59.25	0.71	23.00	2.48
Arsenic	4.88	4.88	3.25	0.04	4.14	0.45
Barium	61.50	61.50	182.50	2.19	16.39	1.77
Beryllium	1.44	1.44	6.50	0.08	0.56	0.06
Cadmium	0.55	0.55	6.50	0.08	1.33	0.14
Calcium	1,045.56	1,045.56	305,000.00	3,660.00	290,001.43	31,320.15
Chromium	4.34	4.34	11.50	0.14	2.39	0.26
Cobalt	3.84	3.84	32.50	0.39	2.88	0.31
Copper	13.20	13.20	32.50	0.39	2.86	0.31
Iron	3,958.11	3,958.11	19,000.00	228.00	49.25	5.32
Lead	4.38	4.38	8.40	0.10	3.13	0.34
Magnesium	245.56	245.56	26,000.00	312.00	1,090.00	117.72
Manganese	22.63	22.63	315.00	3.78	1.86	0.20
Mercury	0.0393	0.0393	0.0075	0.0001	0.0050	0.0005
Nickel	8.36	8.36	32.50	0.39	4.85	0.52
Potassium	544.44	544.44	165.00	1.98	615.88	66.51
Selenium	2.14	2.14	13.15	0.16	1.49	0.16
Silver	1.95	1.95	12.75	0.15	2.69	0.29
Sodium	195.67	195.67	1,850.00	22.20	2,401.25	259.34
Thallium	1.78	1.78	16.00	0.19	8.06	0.87
Vanadium	10.70	10.70	10.30	0.12	2.25	0.24
Zinc	15.44	15.44	39.50	0.47	5.31	0.57

Basis of Calculated Input:

Coal	1,000,000	tons/year
Filter Cake	12,000	tons/year
Limestone	108,000	tons/year