

**Lee County Board Of County Commissioners  
Agenda Item Summary**

Blue Sheet No. 20020459

**1. REQUESTED MOTION:**

**ACTION REQUESTED:** Execute Amendment No. 1 to Agreement No. C-12112 between the South Florida Water Management District and Lee County for Water Quality Sample Analysis from the Lower Caloosahatchee Estuary. The amendment provides for one additional year of lab analyses for a not to exceed amount of \$47,458.00 for a revised total agreement amount of \$92,774.00.

**WHY ACTION IS NECESSARY:** All agreements require approval by the Board of County Commissioners.

**WHAT ACTION ACCOMPLISHES:** Provides additional work and revenue for Lee County Environmental Lab.

**2. DEPARTMENTAL CATEGORY:  
COMMISSION DISTRICT #: CW**

**8 - Natural Resources** *C8B*

**3. MEETING DATE:** *05-14-2002*

**4. AGENDA:**

- CONSENT
- ADMINISTRATIVE
- APPEALS
- PUBLIC
- WALK ON
- TIME REQUIRED:

**5. REQUIREMENT/PURPOSE:  
(Specify)**

- STATUTE
- ORDINANCE
- ADMIN. CODE
- OTHER

**6. REQUESTOR OF INFORMATION:**

- A. COMMISSIONER \_\_\_\_\_
- B. DEPARTMENT Public Works
- C. DIVISION Natural Resources
- BY: Roland E. Ottolini, P.E., Director

*[Signature]*

**7. BACKGROUND:**

On May 15, 2001, the Board of County Commissioners approved Agreement C-12112 with the South Florida Water Management District for water quality testing of the Lower Caloosahatchee Estuary. The objective of the project is to obtain baseline water quality data which can be used to establish water quality parameters, measure progress toward achieving and maintaining water quality standards, and protect and restore the living aquatic resources of the ecosystem. This agreement ended February 28, 2002.

Amendment No. 1 to Agreement No. C-12112 revises the termination of the agreement to February 28, 2003 with a not to exceed contract amount of \$47,458.00 for the same period. The amendment also sets forth sampling protocol and testing requirements.

No additional funding is required.

Attachments: Two Amendments No. 1 to Agreement No. C012112

**8. MANAGEMENT RECOMMENDATIONS:**

**9. RECOMMENDED APPROVAL:**

A Department Director	B Purchasing or Contracts	C Human Resources	D Other	E County Attorney	F Budget Services <i>4/30</i>				G County Manager
					OA	OM	Risk	GC	
<i>J. J. Jumper</i> <i>4-26-02</i>	<i>N/A</i>			<i>K. S.</i> <i>4/26/02</i>	<i>P.M.</i> <i>4/29/02</i>	<i>MS</i> <i>4/29/02</i>	<i>JP</i> <i>4/30</i>	<i>NS</i> <i>4-29-02</i>	<i>J. J. Jumper</i> <i>4-26-02</i>

**10. COMMISSION ACTION:**

- \_\_\_\_\_ APPROVED
- \_\_\_\_\_ DENIED
- \_\_\_\_\_ DEFERRED
- \_\_\_\_\_ OTHER

Rec. by CoAtty  
Date: *4/26/02*  
Time: *1000 AM*  
Forwarded To:  
*ADMIN 4/26/02*

RECEIVED BY  
COUNTY ADMIN.  
*4/29 900*  
COUNTY ADMIN.  
FORWARDED TO:  
*4/30 1000*

**ORIGINAL**



**SOUTH FLORIDA WATER MANAGEMENT DISTRICT  
AMENDMENT**

**C-12112-A1**

**AMENDMENT NO. 1**

**TO AGREEMENT NO. C-12112**

**BETWEEN THE**

**SOUTH FLORIDA WATER MANAGEMENT DISTRICT**

**AND**

**LEE COUNTY, FLORIDA**

This **AMENDMENT NO. 1**, entered into on \_\_\_\_\_, to that **AGREEMENT** dated June 4, 2001, between "the Parties," the South Florida Water Management District (**DISTRICT**), and Lee County, Florida (**COUNTY**).

**WITNESSETH THAT:**

WHEREAS, the **AGREEMENT** may be amended with the prior written approval of the parties; and

WHEREAS, the Governing Board of the **DISTRICT**, at its April 11, 2002 meeting, approved entering into this **AMENDMENT NO. 1** with the **COUNTY**; and

WHEREAS, the parties wish to amend the **AGREEMENT** in order to extend the period of performance, increase funding of the **AGREEMENT** and amend the Statement of Work;

NOW THEREFORE, the **DISTRICT** and the **COUNTY**, in consideration of the mutual benefits flowing from each to the other, do hereby agree as follows:

1. The term of the **AGREEMENT** is hereby extended by one (1) year and the expiration date, as amended, is June 3, 2003. This **AMENDMENT NO. 1** shall be effective upon the date of execution by the parties.
2. The monetary consideration for the **AGREEMENT** is hereby increased by an amount not-to-exceed Forty Seven Thousand Four Hundred Fifty Eight Dollars and No Cents (\$47,458.00), for a total revised **AGREEMENT** amount not-to-exceed Ninety Two Thousand Seven Hundred Seventy Four dollars and No Cents (\$92,774.00).



# SOUTH FLORIDA WATER MANAGEMENT DISTRICT AMENDMENT

3. Article 2.2 of the **AGREEMENT** is hereby revised to read as follows: "The amount expended under this **AGREEMENT** for the **DISTRICT'S** Fiscal Year ending September 30, 2001 shall not exceed Forty Five Thousand Three Hundred Sixteen Dollars and No Cents (\$45,316.00). Further funding of this **AGREEMENT** for the 2002 fiscal year in the amount of \$47,458.00 is subject to **DISTRICT** Governing Board budgetary appropriation."
4. Article 6.6 is hereby revised to read as follows: "The **DISTRICT** anticipates a total not-to-exceed project cost of One Hundred Four Thousand Five Hundred Forty Two Dollars and No Cents (\$104,542.00) of which the **DISTRICT** is contributing the not-to-exceed amount of Ninety Two Thousand Seven Hundred Seventy Four Dollars and No Cents (\$92,774.00) with the balance of matching funds and/or in-kind services to be contributed by the **COUNTY** in the amount of Eleven Thousand Seven Hundred Sixty Eight Dollars and No Cents (\$11,768.00).
5. The Statement of Work, attached as Exhibit "C" to the **AGREEMENT**, is hereby revised as set forth in Exhibit "C1", attached hereto and made a part of this **AMENDMENT NO. 1**.
6. The Payment and Deliverable Schedule is also hereby revised in accordance with Exhibit "D1", attached hereto and made a part of this **AMENDMENT NO. 1**.
7. All other terms and conditions of the **AGREEMENT**, as amended, remain unchanged.



# SOUTH FLORIDA WATER MANAGEMENT DISTRICT AMENDMENT

IN WITNESS WHEREOF, the parties or their duly authorized representatives hereby execute this **AMENDMENT NO. 1** on the date first written above.

**SOUTH FLORIDA WATER MANAGEMENT DISTRICT  
BY ITS GOVERNING BOARD**

By: \_\_\_\_\_  
**Frank Hayden, Procurement Director**

**SFWMD** PROCUREMENT APPROVED

By: Patrick M. Ryan  
Date: 3/15/02 NOA  
3/20/02

**LEE COUNTY, FLORIDA**

By: \_\_\_\_\_

Title: \_\_\_\_\_

## EXHIBIT "C1"

### STATEMENT OF WORK Water Quality Sample Analysis in the Caloosahatchee Estuary

#### 1. INTRODUCTION

The purpose of this contract is to provide laboratory services for water quality analyses for two (2) South Florida Water Management District (District) projects. These sampling projects are located in the Caloosahatchee Estuary in southwest Florida. Water Quality Parameters to be analyzed include: NO<sub>3</sub>, NO<sub>2</sub>, NH<sub>4</sub>, Total N, Total P, Chlorophyll a, O-PO<sub>4</sub>, Turbidity, Color, TSS, Silicate, and TOC.

This Amendment No. 1 will provide year four (4) analyses for three (3) of the original (8) CES sites and an additional site upstream of S-79 for the Caloosahatchee Estuary monthly water quality collection and year one of the Random Coastal Charlotte Harbor Monitoring Network which includes the measurement of five (5) random water quality sites per month. All sample collection will be done by Lee County's Environmental Laboratory (LCEL) staff. Samples will be delivered to the LCEL where they will be analyzed by Lee County staff. This allows samples to be processed within the allowable hold time for each procedure.

#### 2. SCOPE OF WORK

The LCEL shall collect and analyze water quality samples from the Caloosahatchee Estuary (see **Appendix A and B: Scope of work for fixed site water quality sampling and Random site water quality sampling**). The fixed sites (CES03, CES04 CES06 and S-79) are the preexisting sites from the long term Caloosahatchee water quality monitoring network. The Charlotte Harbor National Estuarine Program has initiated a long term random sampling program for numerous strata throughout the Charlotte Harbor and Caloosahatchee region, one of which includes the Caloosahatchee River Estuarine system. The number of samples submitted may vary by collection day but will be consistent monthly.

**Table 1** lists the tests and method detection limits that are requested for the contracted analyses. Methodologies may be acceptable if they are established by the Environmental Protection Agency (EPA), United States Geological Survey (USGS), American Water Works Association (AWWA), American Public Health Association (APHA), Water Pollution Control Federation (WPCF), or approved via a method validation study submitted to FDEP and approved by the District Project Manager prior to being implemented. Lee County's Environmental Laboratory (LCEL) shall have method detection limits that are comparable to those in **Table 1**.

Results will be submitted to the District within three(3) weeks of collection. Results must be submitted in standard District format (**Appendix C**). All documentation pertinent to any results submitted as part of the agreement shall be organized and kept in

a secured location for a period of five (5) years. No information on any District samples shall be given to non-District personnel without written consent from the District.

### **3. WORK BREAKDOWN STRUCTURE**

Quality Assurance / Quality Control is as follows:

- a. The LCEL shall be currently certified to analyze environmental samples, and remain certified throughout the contract period by the Florida Department of Health (FDOH) or national laboratory accreditation program, for all parameters it proposes to analyze for the contract (where certification is available). The LCEL shall have a State of Florida approved Comprehensive Quality Assurance Plan (CompQAP), which covers all the analyses that they perform under this agreement. The QA/QC report shall also be submitted in both hard copy and electronic format and shall include a description of all analytical, instrumentation, or computer problems detected during testing of District samples, how each problem was resolved, and any observed/expected effect on the result. The report shall also include a description of all quality control problems encountered and identification of the District samples affected. When problems with sample results are detected by District Staff, the District will notify LCEL in writing. LCEL shall identify probable cause(s) of problem and submit a written response to the District within one (1) week. The District may request the laboratory to rerun samples that do not meet quality assurance criteria.
- b. The LCEL shall submit verification of method detection limits for all analytical methods they propose to conduct. These methods should adhere to the Method detection limits in Table 1. The LCEL shall use the methods proposed for all analyses under this agreement. The LCEL cannot change methods without prior written approval from the District. If a proposed method is not listed in the approved CompQAP, the LCEL shall provide a Data Validation package to FDEP to be incorporated into the Quality Assurance Project Plan (QAPP) for the project for which the analyzes are being conducted. The minimum quality control requirements for all tests are those specified in the LCEL's CompQAP, unless specified as otherwise by the District. The LCEL shall provide all quality assurance data associated with conducted analyses when requested by the District. The District will not pay for the data that does not meet LCEL's or District/FDEP quality assurance/quality control criteria. The District must be allowed access to the LCEL's facility during normal working hours in order to conduct laboratory audits. A minimum of one laboratory audit will be conducted each year at the LCEL. The LCEL shall perform the following quality assurance checks as part of their routine data validation: reversal checks, linearity checks, matrix interference checks, precision checks, and accuracy checks. The LCEL shall notify the District Project Manager immediately if they loose certification on any parameter(s) they analyze for the District. The LCEL shall provide the District with results of all performance evaluation and round robin studies in which they participated. The LCEL may be requested by the District to participate in other round robin studies while this agreement is in effect.

- c. The District will notify LCEL when a sampling event will take place, the number of samples to be collected, type of water sample to be collected, and what parameters need to be analyzed. The District reserves the right to change sampling schedules due to unforeseen circumstances, in which case the District Project Manager will notify LCEL within 24 hours. Certified pre-cleaned sample bottles shall be provided by LCEL, as part of this agreement, at least five (5) days prior to sample collection. The LCEL shall inform the District of bottle size required for each parameter. Unless requested otherwise, the bottles should not contain preservatives. If requested, the LCEL shall provide appropriate preservatives. The District strongly recommends that the LCEL recycle used disposable sample bottles. The samples will be collected and labeled by LCEL personnel. Any necessary sample filtration or preservation will be conducted in the field by LCEL personnel. Each bottle will be or labeled with identifying information such as project code, field sample number, date of collection, preservation and tests to be performed. Chemistry Field Data Logs or Chain of Custody will also be submitted with the samples for sample custody tracking. The Log contains all the information on the sample plus in-situ measurement data and sampling conditions. It is preferable that the LCEL accept the District's Chemistry Field Data Logs as an alternative to a chain-of-custody. Routine samples will be collected and delivered to LCEL before 4:00 p.m. the day of collection to ensure holding times are met. The LCEL shall verify cooler contents against chain-of-custody sheets. Signed custody sheets shall be sent back to the District Project Manager with the data reports. The LCEL shall inspect the samples upon receipt and verify that they are on ice and check for damaged containers or leaks. The LCEL shall verify sample preservation by checking the pH of at least twenty-percent (20%) of all incoming samples. The LCEL shall notify District Project Manager immediately of any problems associated with the condition of the samples. The LCEL shall notify the Project Manager if a sample was received and/or analyzed out of holding time. The District will not pay Contractor for a sample analysis conducted outside of holding times unless pre-approved by the District. Field quality control samples are routinely included in each batch of samples. These may include field blanks, and equipment blanks. Blind samples may be included with regular samples at any time. These field quality control samples are to be treated as routine samples by LCEL. The LCEL shall verify that data for all field quality control samples and the associated regular samples meet the District's field criteria. Field quality assurance samples and associated regular samples that do not meet the District's field criteria must be re-worked and noted as "verified" on the final report. Criteria and recommended corrective action will be provided to the LCEL.
- d. The report shall also include a description of all quality control problems encountered and identification of the District samples affected. When problems with sample results are detected by District Staff, the District will notify LCEL in writing. LCEL shall identify probable cause(s) of problem and submit a written response to the District within one (1) week. The District may request the laboratory to rerun samples that do not meet quality assurance criteria.

#### 4. LOCATION

All analyses shall be conducted at the LCEL. No work may be subcontracted without prior written approval by the District. The subcontractor shall fulfill all the quality assurance requirements in this agreement. If the LCEL intends to subcontract work on a regular basis, the District shall be provided with subcontractor's credentials. All subcontractors shall have a State of Florida approved CompQAP and shall be certified by FDOH or comparable national accreditation program to perform such analysis.

Criteria and recommended corrective action will be provided to the LCEL.

**Table 1. Tests methodologies and detection limits**

Test Name	SFWMD Methodology	SFWMD Detection Limit	LCEL Methodology	LCEL Detection Limit
Nitrogen, Kjeldahl	EPA 351.1	0.5 mg/L N	EPA 351.2	0.05 mg/L as N
Nitrogen, Ammonia	SM 417G	0.01 mg/L NH <sub>3</sub> -N	EPA 350.1	0.02 mg/L as N
Nitrogen, Nitrate + Nitrite	SM 418F	.004 mg/L NO <sub>3</sub> -N	EPA 353.1	0.01 mg/L as N
Nitrogen, Nitrite	SM 419	.004 mg/L NO <sub>2</sub> -N	EPA 354.1	0.001 mg/L as N
Phosphorus, Total	SM 424G	.004 mg/L PO <sub>4</sub> -P	EPA 365.1	0.01 mg/L as P
Phosphate, Ortho	SM 424G0	.004 mg/L PO <sub>4</sub> -P	EPA 365.2	0.001 mg/L as P
Silicate	SM 425C	1.0 mg/L SiO <sub>2</sub>	EPA 370.1	1 mg/L
Turbidity	SM 214A	0.1 NTU	EPA 180.1	0.01 NTU
TSS	SM 209B, EPA 160.2	5 mg/L	EPA 160.2	1 mg/L
TOC	EPA 415.1	1.0 mg/L	EPA 415.1	1 mg/L
Color	SM 2120B		SM2120B modified	1 CU
Chlorophyll a	SM 10200H	1 mg/ m <sup>3</sup>	SM 1002G	0.5 mg/m <sup>3</sup>

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5. COST BREAKDOWN

<b>MONTHLY AND RANDOM WATER QUALITY SAMPLING</b>			
<b>PARAMETER</b>	<b>COST EACH</b>	<b># PER MONTH</b>	<b>TOTAL / YEAR</b>
PAR	\$20.00	16	\$3,840.00
Secchi Disk	\$5.00	16	\$960.00
Temp	\$5.00	16	\$960.00
Salinity	\$5.00	16	\$960.00
DO	\$5.00	16	\$960.00
Cond	\$5.00	16	\$960.00
pH	\$5.00	16	\$960.00
COLOR465	\$5.00	16	\$960.00
TURB	\$10.00	16	\$1,920.00
TSS	\$15.00	16	\$2,880.00
TKN	\$22.00	16	\$4,224.00
NH3	\$12.00	16	\$2,304.00
NOX	\$15.00	16	\$2,880.00
O-PO4	\$10.00	16	\$1,920.00
T-PO4	\$20.00	16	\$3,840.00
TOC	\$26.50	16	\$5,088.00
CHLA	\$30.00	16	\$5,760.00
NO2	\$10.00	16	\$1,920.00
NO3	\$0.00	16	\$0.00
SILICA	\$15.00	16	\$2,880.00
<b>SAMPLE COLLECTION</b>	\$35.00	9	\$3,780.00
		<b>TOTAL</b>	\$49,956.00
		<b>5% DISCOUNT</b>	-\$2,497.80
		<b>TOTAL / YEAR</b>	\$47,458.20

## APPENDIX A

### STATEMENT OF WORK: Water Quality Sampling in the Caloosahatchee River and Estuary (year 4)

#### 1. INTRODUCTION

The Caloosahatchee River and adjacent estuary, along with Estero Bay are significantly important areas of both aesthetic and ecological value. Water quality in these areas is continuously threatened by altered freshwater inputs, nutrient loads from agricultural activities, anthropogenic organic compounds and trace elements, and overall growth and development.

Currently, there is a gap in water quality data that starts in Estero Bay and continues through the lower end of Charlotte Harbor. Water quality sampling would fill that gap and help form a complete picture of water quality values for the lower west coast of Florida.

#### 2. SCOPE OF WORK

The objective of this project is to obtain baseline water quality data from the Lower Caloosahatchee Estuary. These data can be used to establish spatial and temporal long-term comparisons of water quality parameters, measure progress toward achieving and maintaining water quality standards, and protect and restore the living aquatic resources of the ecosystem.

The LCEL staff will collect water samples from two (2) depths ( $\frac{1}{2}$  meter above the bottom and  $\frac{1}{2}$  meter below the surface) at four (4) different locations in the Estuary using South Florida Water Management District (District) collecting protocol. Six (6) water quality parameters will be measured *in situ* (Table 1) using a *Hydrolab*® MiniSonde. Water samples will be delivered immediately after collection to Lee County's Environmental Laboratory (LCEL) for analysis. Twelve water quality parameters will be measured by LCEL for each sample, also using District or comparable methodology and detection limits.

Table 1. Water Quality Parameters to be measured in this project.

LEE COUNTY		CES
NO <sub>3</sub>	O-PO <sub>4</sub>	Salinity
NO <sub>2</sub>	Turbidity	Temperature
NH <sub>4</sub>	Color	Conductivity
Total N	TSS	Redox
Total P	Silicate	DO
Chlorophyll a	TOC	Secchi disk

Sampling will be a continuation of 2000 and 2001 efforts. Data will conform to the following guidelines or other format as requested by the District:

**ASCII Comma-Delimited Format**

1. Data files must be submitted on a DOS formatted 3 1/2" diskette or transferred to an externally accessible District UNIX workstation using FTP.
2. The required fields and the order in which they appear in the data file are the same as in Table, with these exceptions:

- Fields must be separated with a comma.
- Character fields must be enclosed in quotation marks as some values may contain commas.

Table 2. Data file format

Field Name	Field Size	Start Column Position	Stop Column Position	Format	Examples
Project Code	1 to 8	1	8	Char	CBS
Sample Number	1 to 13	10	22	Char	1233
Station Code	1 to 8	24	31	Char	S332
Sample Type *	1 to 4	33	36	Char	SAMP
Sampling Date	8	37	44	YYYYMMDD	20010301
Sampling Time	4	46	49	HH24MI	1305
Sampling Depth (in meters)	1 to 4	51	54	Number	0.1
Parameter Name	1 to 30	56	85	Char	TOTFE or Total Iron
Storet Code	5	87	91	Char - If code is <5 digits, then the leading zeros must be added	00010
Method Name	0 to 20	93	112	Char	SM303.3
Practical Quantitation Limit	9	114	122	Number - 9 digits total including up to 4 decimals	0.12
Method Detection Limit	9	124	132	Number - 9 digits total including up to 4 decimals	0.10
Result	9	134	142	Number - 9 digits total including up to 4 decimals A minus sign (-) shall lead the value when the value is below detection limits.	20.2
Units	1 to 8	144	151	Char	Mg/L
Remark Code	1 to 3	153	155	Char - As specified in F.A.C. 17-160 Quality Assurance; only one code is reported according to hierarchy given in 17-160.700 Table 7 Data Qualifiers. When remark code 'U' is used to denote a value below detection limits a minus sign (-) shall lead the value for the result.	U
Analyze Date	8	157	164	YYYYMMDD	20010305
Analyze Time	4	166	169	HH24MI	0930
Lab Number	1 to 13	171	183	Char	L3704-21
Comments	0 to 250	185	434	Char	PH adjusted in lab to <2

- There are six (6) permissible sample type codes: SAMP = regular sample; EB = equipment blank; FB = field blank; FD = field duplicate; RS = replicate sample; SS = split sample.

### 3. WORK BREAKDOWN STRUCTURE

#### Task 1: Quality Assurance Procedures

Field staff will follow District QA/QC protocol for surface water collection.

#### Task 2: Work Plan

The District Project Manager, along with field staff will conduct consultation meetings with both District Water Quality Monitoring Division and LCEL to establish water quality collection protocol and equipment needs. A project work plan will be developed.

#### Task 3: Sample Site Identification

The sample sites in the Caloosahatchee Estuary will be three (3) of the same sites used the previous three (3) years of sampling (Table 3) and one additional fixed site upstream of S-79.

#### Task 4: Sampling and Analysis

Weather permitting the sampling should be synoptic occurring on one day. The District field staff will sample each month for twelve (12) consecutive months (a continuation of the 2000-2001 WQ Sampling). Samples will be delivered by LCEL field staff to LCEL promptly, within established hold times. Water quality analyses will be done by LCEL within an accepted timeframe.

#### Task 5: Water Quality Data

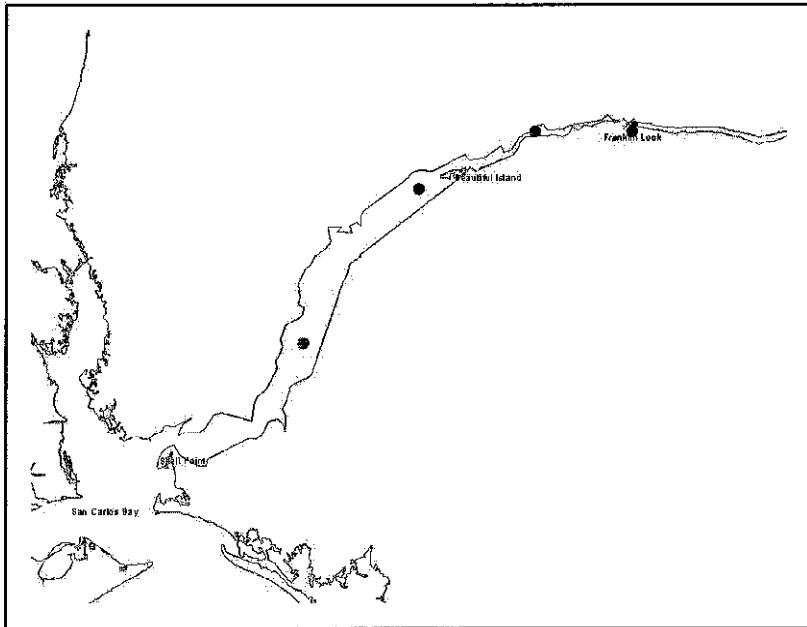
Water quality data will be obtained from LCEL monthly. Data will be incorporated into a final data report upon completion of sampling.

### 4. LOCATION OF PROJECT

Water quality sampling will be conducted by LCEL staff in the Lower Caloosahatchee River and its Estuary (map 1) Lee County, Florida

Table 3. Sample Site Locations in Caloosahatchee Estuary

		<b>Decimal Degrees</b>
<b>Site</b>	<b>Longitude</b>	<b>Latitude</b>
<b>S-79</b>	Up Stream	Of Structure
<b>3</b>	-81.7606	26.7167
<b>4</b>	-81.8338	26.6817
<b>6</b>	-81.9102	26.5823



Map 1. Sample Site Locations in Caloosahatchee Estuary

### **Citations**

South Florida Water Management District 1997. Comprehensive Quality Assurance Plan #870166G. SFWMD, West Palm Beach, Florida. Coastal Charlotte Harbor Monitoring Network Standard Operating Procedure.

## APPENDIX B

### STATEMENT OF WORK: Random Stratified Water Quality sampling in the Caloosahatchee River Estuary.

#### 1. INTRODUCTION

In February 2000 the Comprehensive Conservation and Management Plan (CCMP) for the Charlotte Harbor National Estuary Program (NEP) was approved by the Management Conference. Included with this management plan is a long-term monitoring strategy to track status and trends of fish and wildlife habitat, hydrologic and water quality conditions for the greater Charlotte Harbor watershed. This long-term strategy recommends a stratified, random sampling design based on the U.S. Environmental Protection Agency's Environmental Monitoring and Assessment Program (EMAP) for the region's coastal water quality programs.

#### 2. SCOPE OF WORK

The objective of this project is to obtain baseline water quality data from the Lower Caloosahatchee River Estuary. These data can be used to establish spatial and temporal long-term comparisons of water quality parameters, measure progress toward achieving and maintaining water quality standards, and protect and restore the living aquatic resources of the ecosystem. Staff from the FWC-FMRI shall collect water quality samples and record data on field parameters for the five (5) strata in Charlotte Harbor, including the tidal Peace and Myakka rivers for Southwest Florida Water Management District. Staff from Sarasota County and the Department of Environmental Protection-Charlotte Harbor Aquatic Preserves shall collect water quality samples and record data on field parameters for upper and lower Lemon Bay, respectively. **Lee County's Environmental Laboratory (LCEL) shall collect water quality samples and record data on field parameters for the tidal Caloosahatchee River under contract with the South Florida Water Management District.** The LCEL shall also collect water quality samples and record data on field parameters for Estero Bay and Pine Island Sound. Staff from the Department of Environmental Protection-Charlotte Harbor Aquatic Preserves and the Cities of Cape Coral and Sanibel shall collect water quality samples and record data on field parameters for Charlotte Harbor up to the District boundary, Matlacha Pass and San Carlos Bay respectively.

The LCEL staff shall collect water samples from two (2) depths (½ meter above the bottom and ½ meter below the surface) at four (4) different locations in the Estuary using District collecting protocol. Six (6) water quality parameters will be measured *in situ* (Table 1) using a *Hydrolab*® MiniSonde.

Table 1. Water Quality Parameters to be measured in this project.

LEE COUNTY	CHNEP	Sampling
NO <sub>3</sub>	O-PO <sub>4</sub>	Salinity
NO <sub>2</sub>	Turbidity	Temperature
NH <sub>4</sub>	Color	Conductivity
Total N	TSS	Redox
Total P	Silicate	DO
Chlorophyll a	TOC	Secchi disk
PAR		

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Data will conform to the following guidelines or other format as requested by the District:

**ASCII Comma-Delimited Format**

1. Data files must be submitted on a DOS formatted 3 1/2" diskette or transferred to an externally accessible district UNIX workstation using FTP.
2. The required fields and the order in which they appear in the data file are the same as in Table, with these exceptions:
  - Fields must be separated with a comma.
  - Character fields must be enclosed in quotation marks as some values may contain commas.

Table 2. Data file format

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Sample Type *	1 to 4	33	36	Char	SAMP
Sampling Date	8	37	44	YYYYMMDD	20010301
Sampling Time	4	46	49	HH24MI	1305
Sampling Depth (in meters)	1 to 4	51	54	Number	0.1
Parameter Name	1 to 30	56	85	Char	TOTFE or Total Iron
Storet Code	5	87	91	Char - If code is <5 digits, then the leading zeros must be added	00010
Method Name	0 to 20	93	112	Char	SM303.3
Practical Quantitation Limit	9	114	122	Number - 9 digits total including up to 4 decimals	0.12
Method Detection Limit	9	124	132	Number - 9 digits total including up to 4 decimals	0.10
Result	9	134	142	Number - 9 digits total including up to 4 decimals A minus sign (-) shall lead the value when the value is below detection limits.	20.2
Units	1 to 8	144	151	Char	Mg/L
Remark Code	1 to 3	153	155	Char - As specified in F.A.C. 17-160 Quality Assurance; only one code is reported according to hierarchy given in 17-160.700 Table 7 Data Qualifiers. When remark code 'U' is used to denote a value below detection limits a minus sign (-) shall lead the value for the result.	U
Analyze Date	8	157	164	YYYYMMDD	20010305
Analyze Time	4	166	169	HH24MI	0930
Lab Number	1 to 13	171	183	Char	L3704-21
Comments	0 to 250	185	434	Char	PH adjusted in lab to <2

\* There are six permissible sample type codes: SAMP = regular sample; EB = equipment blank; FB = field blank; FD = field duplicate; RS = replicate sample; SS = split sample.



### **3. WORK BREAKDOWN STRUCTURE**

#### **Task 1: Quality Assurance Procedures**

The LCEL staff shall follow District QA/QC protocol for surface water collection. The laboratories shall follow all applicable federal and state guidelines for quality assurance and quality control of water quality analyses, including the use of appropriate duplicate samples and equipment blanks. The laboratories shall also participate in inter-laboratory split-sample exercises with the Southwest Florida Regional Ambient Monitoring Network to help ensure data comparability region-wide.

#### **Task 2: Work Plan**

The District Project Manager, along with field staff will conduct consultation meetings with both District Water Quality Monitoring Division and LCEL to establish water quality collection protocol and equipment needs. A project work plan will be developed.

#### **Task 3: Sample Site Identification**

Each of the six (6) subregions will be subdivided into grids based upon a 1x1 minute cartographic grid produced by the Florida Fish and Wildlife Conservation Commission-Florida Marine Research Institute. Each resultant subregion produced above will be further subdivided using a 10 x 10 cell overlay of potential sample sites. The sample sites in the Caloosahatchee Estuary tidal strata will be randomly selected as out lined in the Coastal Charlotte Harbor Monitoring Network Standard Operating Procedures by the Charlotte Harbor National Estuary Program.

#### **Task 4: Sampling**

Using the randomization technique, each of the six strata shall be sampled monthly, with five randomly chosen sample locations per sub-region. The LCEL field staff shall sample five (5) randomly selected stations each month for twelve (12) consecutive months. At each randomly chosen sample site, staff from the aforementioned agencies will record at least the following: water temperature, salinity, specific conductivity, pH, and dissolved oxygen. In addition, staff personnel will determine Secchi disk depths and light attenuation coefficients. For water quality samples, a single sample will be collected at 0.5 meters below the surface for those locations where the bottom depth is less than 3.0 meters. For locations where the bottom depth is greater than 3.0 meters, two (2) samples will be collected (0.5 meters below the surface and 0.5 meters above the bottom). Light attenuation coefficients will be taken if sites are visited between the hours of 10:00 a.m. and 2:00 p.m. (local time). Samples shall be delivered by LCEL field staff to LCEL within 24 hours, which will adhere to established holding times. Water quality analyses shall be done by LCEL within an accepted the holding time criteria .

### **Task 5: Analysis**

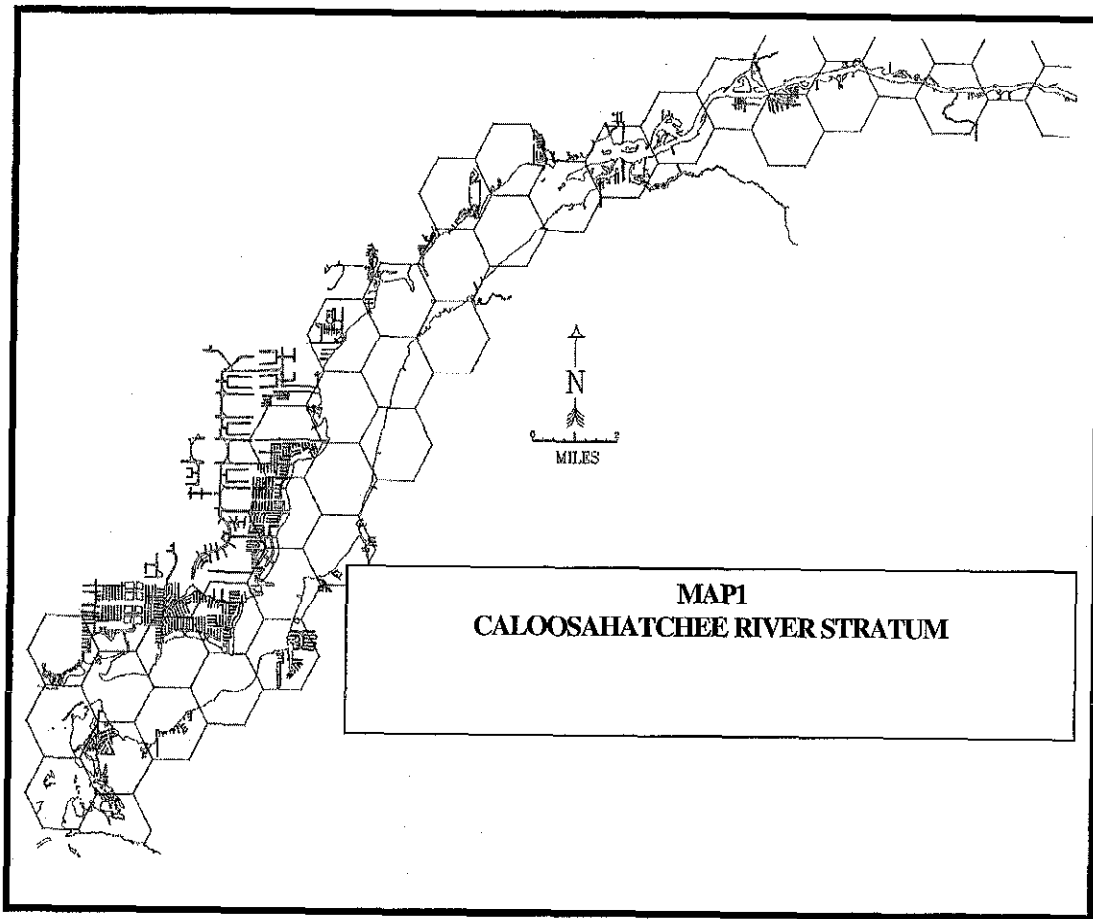
Water quality parameters analyzed by the laboratories within this Network shall include at least the following: turbidity (nephelometric turbidity units), total suspended solids (milligrams per liter), "color" (platinum-cobalt units), chlorophyll A (phaeophytin-corrected in micrograms per liter), total nitrogen (milligrams per liter), total Kjeldahl nitrogen (milligrams per liter), total ammonia nitrogen (milligrams per liter), total nitrite plus nitrate nitrogen (milligrams per liter), dissolved orthophosphate (milligrams per liter), total phosphorous (milligrams per liter) and total organic carbon (milligrams per liter). Water samples will be delivered immediately after collection to The LCEL for analysis. Twelve (12) water quality parameters will be measured by LCEL for each sample, also using District or comparable methodology and detection limits.

### **Task 6: Water Quality Data**

Water quality data will be obtained from LCEL monthly. Data will be incorporated into a final data report upon completion of sampling.

## **4. LOCATION OF PROJECT**

Water quality sampling shall be conducted by LCEL staff in the Lower Tidal Caloosahatchee River and its Estuary (Figure 6) Lee County, Florida



## APPENDIX C

All data must conform to the following guidelines or other format as desired by the District:

- 1) Data files must be transferred electronically to District Project Manager using a consistent file naming convention, e.g. 10-1200.txt.
- 2) Files are to be of ASCII type in a comma delimited format. The fields and the required order, are described in the table below.
- 3) Character fields should be left justified within the file and numeric fields should be right justified.
- 4) Data files must be separated by data type, e.g., inorganic versus organic.

**Table 1. Standard Data Format**

Field Name	Field Size	Start Column Position	Stop Column Position	Format	Examples
Project Code	1 to 8	1	8	Char	ENR
Sample Number	1 to 13	10	22	Char	1233
Station Code	1 to 8	24	31	Char	S332
Sample Type *	1 to 4	33	36	Char	SAMP
Sampling Date	8	37	44	YYYYMMDD	20010301
Sampling Time	4	46	49	HH24MI	1305
Sampling Depth (in meters)	1 to 4	51	54	Number	0.1
Parameter Name	1 to 30	56	85	Char	TOTFE or Total Iron
Storet Code	5	87	91	Char - If code is <5 digits, then the leading zeros must be added	00010
Method Name	0 to 20	93	112	Char	SM303.3
Practical Quantitation Limit	9	114	122	Number - 9 digits total including up to 4 decimals	0.12
Method Detection Limit	9	124	132	Number - 9 digits total including up to 4 decimals	0.10
Result	9	134	142	Number - 9 digits total including up to 4 decimals A minus sign (-) shall lead the value when the value is below detection limits.	20.2
Units	1 to 8	144	151	Char	Mg/L
Remark Code	1 to 3	153	155	Char - As specified in F.A.C. 17-160 Quality Assurance; only one code is reported according to hierarchy given in 17-160.700 Table 7 Data Qualifiers. When remark code 'U' is used to denote a value below detection limits a minus sign (-) shall lead the value for the result.	U
Analyze Date	8	157	164	YYYYMMDD	20010305
Analyze Time	4	166	169	HH24MI	0930
Lab Number	1 to 13	171	183	Char	L3704-21
Comments	0 to 250	185	434	Char	PH adjusted in lab to <2

\* There are six permissible sample type codes: SAMP = regular sample; EB = equipment blank; FB = field blank; FD = field duplicate; RS = replicate sample; SS = split sample.

The District reserves the right to request changes in data format during the duration of the agreement. In cases when major modification is necessary, the LCEL shall submit a written price quote for presenting that data in that format. The cost must be agreed upon by the District Project Manager and Contract Specialist before the LCEL begins the work. The required reporting format will be provided to the laboratory prior to initiation of any work. Data not received in appropriate format will be returned to the LCEL Laboratory for correction.

**Example Comma Delimited Data File:**

Project, Field, Station, ProgramType, CollectMethod, Matrix,FQC, SamplingDate,  
SamplingTime, Depth, Parameter, Storet, Method, AnalysisDate, AnalysisTime, PQL, MDL,  
Result, Units, Remark, LabNumber, Comments

ENRR, P-123333, S5A,MON , , SAV, EB, 19991119, 1305, 0.1, TOTFE, 34567,  
SM303.3, 19990620, 1400, 0.20, 0.10, 20.2, mg/l, Q, L-2555-20, Large amount of  
suspended solids in the sample

ENRR, P-123334, S332,MON, , , , 19991119, 0800, 0.1, TPO4, 02345, EPA330.4,  
19991120, 1600, 0.008, 0.004, -0.004, mg/l, U, L-3704-21,

ENRR, P-123335, S332,MON, , ,SS, 19991119, 0800, 0.1, TPO4, 00345, EPA330.4,  
19991120, 1405, 0.008, 0.004, 0.004, mg/l, ,L-1222-12,

<sup>a</sup>: There are six (6) permissible field quality control (FQC) codes: EB=equipment blank;  
FB=field blank; FD=field duplicate; RS=replicate samples; SS = split sample; and  
TS =trip spike, SAMP = sample.

**EXHIBIT "D1"**

**PAYMENT AND DELIVERABLE SCHEDULE**

<b>Sample Analysis Month</b>	<b>Billing Date</b>	<b>Quarterly District Payment</b>
<b>March-May 2002</b>	<b>June 2002</b>	\$11,864.55
<b>June-August 2002</b>	<b>September 2002</b>	\$11,864.55
<b>September-November 2002</b>	<b>December 2002</b>	\$11,864.55
<b>December 2002-February 2003</b>	<b>March 2003</b>	\$11,864.55
	<b>Total Not-to-Exceed amount</b>	<b>\$47,458.20</b>

The County shall invoice the District on a quarterly basis in accordance with this Payment and Deliverable Schedule. All payments are subject to completion and acceptance of required tasks by the District.

The County agrees to provide the District all deliverables, data, and information pursuant to this Agreement in standard District format. Acceptability of all work will be based on the judgement of the District that the work is technically credible, accurate, precise, and timely and in compliance with Exhibit "C1," Statement of Work of this Amendment No. 1.

Results of analysis will be submitted to the District within three (3) weeks of collection. Upon receipt and acceptance of deliverables by the District, the District agrees to pay the County as specified above.