

# FLOWERS CHEMICAL LABORATORIES INC.

P.O. Box 150597, Altamonte Springs, FL 32715-0597  
571 NW Mercantile Pl, Suite 111, Port St. Lucie, FL 34986  
812 SW Harvey Green Dr, Madison, FL 32340  
3980 Overseas Hwy, Suite 103, Marathon, FL 33050

Phone: 407-339-5984 E83018 (Main Lab)  
Phone: 772-343-8006 E86562 (South Lab)  
Phone: 850-973-6878 E82405 (North Lab)  
Phone: 305-743-8598 E35834 (Keys Lab)

Florida Keys Aqueduct Authority-WWTP  
3375 Overseas Hwy  
Marathon, FL 33050

PO #: 16976  
Client Project #: Cudjoe Key WWTP -M- SW's  
Date Sampled: Jan 15, 2017  
Feb 14, 2017; Invoice: 320605

## Report Summary

Date Received: Jan 16, 2017

FCL Project Manager: Thomas D. Cross

Laboratory #	Sample Description	Analysis	Chemist	Location	Sample Matrix
320605SW1	C-24	EPA350.1	PCW	Main Lab	Surface Water
		EPA351.2	VLB	Main Lab	
		EPA353.2	PCW	Main Lab	
		EPA365.1	CCP	Main Lab	
		OrgNit			
		SM10200 H	TRB	Main Lab	
320605SW2	CK-3	EPA350.1	PCW	Main Lab	Surface Water
		EPA351.2	VLB	Main Lab	
		EPA353.2	PCW	Main Lab	
		EPA365.1	CCP	Main Lab	
		OrgNit			
		SM10200 H	TRB	Main Lab	
320605SW3	CK-2	EPA350.1	PCW	Main Lab	Surface Water
		EPA351.2	VLB	Main Lab	
		EPA353.2	PCW	Main Lab	
		EPA365.1	CCP	Main Lab	
		OrgNit			
		SM10200 H	TRB	Main Lab	
320605SW4	C-25	EPA350.1	PCW	Main Lab	Surface Water
		EPA351.2	VLB	Main Lab	
		EPA353.2	PCW	Main Lab	
		EPA365.1	CCP	Main Lab	
		OrgNit			
		SM10200 H	TRB	Main Lab	
		TotNit			

### Certificate of Results

Sample integrity was certified prior to analysis. Test results meet all requirements of the NELAC Standards except as noted in the Quality Control Report. Uncertainties for these data are available on request. This report may not be reproduced in part; results relate only to items tested.



Jefferson S. Flowers, Ph.D.  
President/Technical Director



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## Analysis Report

Lab #:	Sampled:	Desc:	Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed
320605SW1	01/15/17 02:50 PM	C-24	Organic Nitrogen	0.627		0				OrgNit		
			Total Nitrogen(as N)	0.627		0				TotNit	17778-88-0	
			Chlorophyll a	0.250	ug/L	1.00	0.0200	0.150	10331616	SM10200 H	479-61-8	01/15/17
			NO3+NO2(as N)	0.0200 U	mg/L	1.00	0.0200	0.0400	10331648	EPA353.2	I-005	01/23/17
			TKN(as N)	0.627	mg/L	1.00	0.200	0.400	10332024	EPA351.2	7727-37-9	01/27/17
			Ammonia (as N)	0.0100 U	mg/L	1.00	0.0100	0.0200	10332663	EPA350.1	7664-41-7	02/03/17
			Total Phosphorus(as P)	0.00341 I	mg/L	1.00	0.00200	0.00400	10333287	EPA365.1	7723-14-0	02/06/17
320605SW2	01/15/17 03:00 PM	CK-3	Organic Nitrogen	0.631		0				OrgNit		
			Total Nitrogen(as N)	0.678		0				TotNit	17778-88-0	
			Chlorophyll a	0.380	ug/L	1.00	0.0200	0.150	10331616	SM10200 H	479-61-8	01/15/17
			NO3+NO2(as N)	0.0200 U	mg/L	1.00	0.0200	0.0400	10331648	EPA353.2	I-005	01/23/17
			TKN(as N)	0.678	mg/L	1.00	0.200	0.400	10332024	EPA351.2	7727-37-9	01/27/17
			Ammonia (as N)	0.0474	mg/L	1.00	0.0100	0.0200	10332663	EPA350.1	7664-41-7	02/03/17
			Total Phosphorus(as P)	0.00200 U	mg/L	1.00	0.00200	0.00400	10333287	EPA365.1	7723-14-0	02/06/17
320605SW3	01/15/17 03:05 PM	CK-2	Organic Nitrogen	0.585		0				OrgNit		
			Total Nitrogen(as N)	0.666		0				TotNit	17778-88-0	
			Chlorophyll a	0.210	ug/L	1.00	0.0200	0.150	10331616	SM10200 H	479-61-8	01/15/17
			NO3+NO2(as N)	0.0200 U	mg/L	1.00	0.0200	0.0400	10331648	EPA353.2	I-005	01/23/17
			TKN(as N)	0.666	mg/L	1.00	0.200	0.400	10332024	EPA351.2	7727-37-9	01/27/17
			Ammonia (as N)	0.0811	mg/L	1.00	0.0100	0.0200	10332663	EPA350.1	7664-41-7	02/03/17
			Total Phosphorus(as P)	0.00802	mg/L	1.00	0.00200	0.00400	10333287	EPA365.1	7723-14-0	02/06/17



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Lab #: 320605SW4    Sampled: 01/15/17 03:40 PM    Desc: C-25

Parameter	Result	Units	DF	MDL	PQL	QC Batch	Method	CAS #	Analyzed
Organic Nitrogen	0.542		0				OrgNit		
Total Nitrogen(as N)	0.594		0				TotNit	17778-88-0	
Chlorophyll a	0.110 I	ug/L	1.00	0.0200	0.150	10331616	SM10200 H	479-61-8	01/15/17
TKN(as N)	0.542	mg/L	1.00	0.200	0.400	10332024	EPA351.2	7727-37-9	01/27/17
NO3+NO2(as N)	0.0522	mg/L	1.00	0.0200	0.0400	10332455	EPA353.2	I-005	02/01/17
Ammonia (as N)	0.0100 U	mg/L	1.00	0.0100	0.0200	10332663	EPA350.1	7664-41-7	02/03/17
Total Phosphorus(as P)	0.00200 U	mg/L	1.00	0.00200	0.00400	10333287	EPA365.1	7723-14-0	02/06/17



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## Quality Report

<b>Quality Control Batch:</b> 10331616		<b>Analyst:</b> TRB						
<b>Blank</b>	<b>Result</b>	<b>Units</b>						
Chlorophyll a	0.0200U	ug/L						
<b>Quality Control Batch:</b> 10331648		<b>Analyst:</b> PCW						
<b>Blank</b>	<b>Result</b>	<b>Units</b>						
NO3+NO2(as N)	0.0200U	mg/L						
<b>Laboratory Control Sample</b>	<b>Result</b>	<b>Units</b>	<b>Spike</b>	<b>%REC</b>	<b>%REC Lim</b>			
NO3+NO2(as N)	2.14	mg/L	2.00	107.00	85.00-115.00			
<b>Matrix Spike</b>	<b>Result</b>	<b>Units</b>	<b>Spike</b>	<b>%REC</b>	<b>%REC Lim</b>	<b>Sample</b>		
NO3+NO2(as N)	7.56	mg/L	4.00	109.50	85.00-115.00	3.18		
<b>Matrix Spike Duplicate</b>	<b>Result</b>	<b>Units</b>	<b>Spike</b>	<b>%REC</b>	<b>%REC Lim</b>	<b>Sample</b>	<b>RPD</b>	<b>RPD Lim</b>
NO3+NO2(as N)	7.58	mg/L	4.00	110.00	85.00-115.00	3.18	0.26	20.00
<b>Quality Control Batch:</b> 10332024		<b>Analyst:</b> VLB						
<b>Blank</b>	<b>Result</b>	<b>Units</b>						
TKN(as N)	0.200U	mg/L						
<b>Laboratory Control Sample</b>	<b>Result</b>	<b>Units</b>	<b>Spike</b>	<b>%REC</b>	<b>%REC Lim</b>			
TKN(as N)	2.87	mg/L	3.00	95.83	85.00-115.00			
<b>Matrix Spike</b>	<b>Result</b>	<b>Units</b>	<b>Spike</b>	<b>%REC</b>	<b>%REC Lim</b>	<b>Sample</b>		
TKN(as N)	3.90	mg/L	3.00	99.37	80.00-120.00	0.916		
<b>Matrix Spike Duplicate</b>	<b>Result</b>	<b>Units</b>	<b>Spike</b>	<b>%REC</b>	<b>%REC Lim</b>	<b>Sample</b>	<b>RPD</b>	<b>RPD Lim</b>



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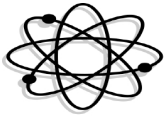
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Quality Control Batch: 10332024		Analyst: VLB						
Matrix Spike Duplicate	Result	Units	Spike	%REC	%REC Lim	Sample	RPD	RPD Lim
TKN(as N)	3.87	mg/L	3.00	98.60	80.00-120.00	0.916	0.59	20.00
Quality Control Batch: 10332663		Analyst: PCW						
Blank	Result	Units						
Ammonia (as N)	0.0100U	mg/L						
Laboratory Control Sample	Result	Units	Spike	%REC	%REC Lim			
Ammonia (as N)	0.471	mg/L	0.500	94.20	85.00-115.00			
Matrix Spike	Result	Units	Spike	%REC	%REC Lim	Sample		
Ammonia (as N)	1.14	mg/L	1.00	102.80	85.00-115.00	0.112		
Matrix Spike Duplicate	Result	Units	Spike	%REC	%REC Lim	Sample	RPD	RPD Lim
Ammonia (as N)	1.13	mg/L	1.00	101.80	85.00-115.00	0.112	0.88	20.00
Quality Control Batch: 10333287		Analyst: CCP						
Blank	Result	Units						
Total Phosphorus(as P)	0.00200U	mg/L						
Laboratory Control Sample	Result	Units	Spike	%REC	%REC Lim			
Total Phosphorus(as P)	0.480	mg/L	0.500	96.00	85.00-115.00			
Matrix Spike	Result	Units	Spike	%REC	%REC Lim	Sample		
Total Phosphorus(as P)	0.161	mg/L	0.200	80.50	85.00-115.00	0.00200U		
Matrix Spike Duplicate	Result	Units	Spike	%REC	%REC Lim	Sample	RPD	RPD Lim
Total Phosphorus(as P)	0.167	mg/L	0.200	83.50	85.00-115.00	0.00200U	3.66	20.00



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## Narrative Report

### Sample Handling

Sample handling and holding time criteria were met for all samples. Samples collected by FCL. No unusual events occurred during analysis. Results are reported on a wet weight basis for aqueous matrices and on a dry weight basis for sludge and soil matrices unless otherwise noted.

### Quality Control

Enclosed analyses met method or FCL criteria, unless otherwise denoted on the sample results. Applied data qualifiers are defined below.

### Attachments

Chain of Custody  
Field Data

### Qualifier

### Meaning

U	Compound was analyzed for but not detected.
J	Estimated value; one or more QC components associated with this data value exceed current QC limits.
Q	Sample held beyond the accepted holding time.
L	Off-scale high; reported concentration exceeds the highest standard.
V	Analyte was detected in both the sample and the associated method blank.
W	The dissolved oxygen blank was above 0.2 mg/L but less than the MDL.
Z	Too numerous to count colonies on plate.
A	Absent
P	Present
T	Value reported is less than the statistical method detection limit. Reported for informational purposes only.
M	Value reported is greater than the statistical method detection limit, but less than the reported MDL.
G	The greatest of the dilutions performed did not yield sufficient oxygen depletion for valid data.
S	The least of the dilutions performed did not yield sufficient oxygen residual for valid data.
O	Result is greater than (over) the specified value.
I	Reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
B	Results based upon colony plate count outside ideal range.
Y	The laboratory analysis was from an improperly preserved sample. The data may not be accurate.