Missouri Department of Natural Resources

Environmental Services Program

Order ID: 070928013 **Program, Contact:** WPCB, Lance Dorsey

Report Date: 10/12/2007 **LDPR:** FEINS

Order Comment:

Sample: 070928013-01 **Facility ID:** MO0108162 **Site:** Rockaway Beach

Customer # : 0705683 **County:** Taney **Sample Reference ID:** **Collect Date:** 9/27/2007

Collector: Michael Heaton **Affiliation:** SWRO **Collect Time:** 12:50 PM

Matrix: Nonpotable Water **Sample Comment:** Rockaway Beach WWTF outfall 001. Last composite taken 12:05. 24 hour composite.

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Biochemical Oxygen Demand	Biochemical Oxygen Demand	20.0		mg/L	Q71004-02	SM 5210-B
Non-Filterable Residue	Non-Filterable Residue	69.0		mg/L	Q71004-07	SM 2540-D

Sample: 070928013-02 **Facility ID:** MO0108162 **Site:** Rockaway Beach

Customer # : 0705684 **County:** Taney **Sample Reference ID:** **Collect Date:** 9/27/2007

Collector: Michael Heaton **Affiliation:** SWRO **Collect Time:** 12:50 PM

Matrix: Nonpotable Water **Sample Comment:** Rockaway Beach WWTF outfall 001 effluent. Grab

Test	Parameter	Result	Qualifier	Units	QC BatchID	Method
Oil And Grease	Oil and Grease	2.80		mg/L	Q71011-02og	1664
Total Phosphorus	Total Phosphorus	0.12		mg/L	Q71010-16	EPA 365.4

The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Qualifier Descriptions

01	Improper collection method	11	Estimated value, matrix interference
02	Improper preservation	12	Insufficient quantity
03	Exceeded holding time	13	Estimated value, true result is > reported value
04	Analyzed by Contract Laboratory	14	Estimated value, non-homogeneous sample
05	Estimated value, detected below PQL	15	No Result - Failed Quality Controls Requirements
06	Estimated value, QC data outside limits	16	Not analyzed - related analyte not detected
07	Estimated value, analyte outside calibration range	17	Results in dry weight
08	Analyte present in blank at > 1/2 reported value	18	Sample pH is outside the acceptable range
09	Sample was diluted during analysis	19	Estimated value
10	Laboratory error	ND	Not detected at reported value

Connie Giesing

Connie Giesing, Laboratory Manager
Environmental Services Program
Field Services Division

Date Printed: 10/12/2007

Lyle Cowles/R7/USEPA/US
07/16/2009 09:17 AM

To Cynthia Sans/R7/USEPA/US@EPA, Paul Marshall/R7/USEPA/US@EPA
cc John Houlihan/R7/USEPA/US@EPA
Subject Fw: Rockaway Beach and Am Family Resorts

Paul,
John and I discussed the proposal and it works for us.

Cynthia,
I was informed that I need to discuss Rockaway Beach with you. When do you want to do that?

Lastly, Paul and Cynthia,
Since I am having trouble accessing Inspectrax, could you please print or e-mail me the background facility information in Inspectrax for both these facilities along with any special areas of emphasis you'd like me to look at? For example, Paul mentioned "on-going problems" at Rockaway Beach. Could you please be more specific?

----- Forwarded by Lyle Cowles/R7/USEPA/US on 07/16/2009 09:06 AM -----

Paul Marshall/R7/USEPA/US
07/15/2009 02:12 PM

To Lyle Cowles/R7/USEPA/US@EPA
cc John Houlihan/R7/USEPA/US@EPA
Subject Rockaway Beach and Am Family Resorts

Due to the logistics difficulties for the above referenced facilities, here is my proposal for getting both done this fiscal year.

American Family Resorts was a state request which we are committed to do, while Rockaway Beach is a request from WENF because of ongoing problems there. Consequently, they are pretty much equal in importance to us. Because American Family Resorts is a small package plant, here is my proposal.

On the way to Rockaway Beach, stop at American Family Resorts and take a grab sample of their effluent. At this time, you can conduct a CEI of the facility if it is convenient. Proceed to Rockaway Beach and conduct a CSI- 2 days of sampling is acceptable. On the return trip, stop again at American Family Resorts and pull another grab sample. If the CEI wasn't done on the way down, perform it at this time.

Let me know if this works,
Paul

Missouri Department of Natural Resources, Environmental Services Program

Addendum Report

Please Attach to Original Order Report

Order ID: 070928013 **Program, Contact:** WPCB, Lance Dorsey

Date Amended: 10/22/2007 **LDPR:** FEINS

Order Comment:

Reason for Addendum: Sample Collector corrected.

Sample: 070928013-01 **Facility ID:** MO0108162 **Site:** Rockaway Beach

Customer # 0705683 **County:** Taney **Sample Reference ID:** **Collect Date:** 9/27/2007

Collector: Gregory S. Perkins **Affiliation:** SWRO **Collect Time:** 12:50 PM

Matrix: Nonpotable Water **Sample Comment:** Rockaway Beach WWTF outfall 001. Last composite taken 12:05. 24 hour composite.

Sample: 070928013-02 **Facility ID:** MO0108162 **Site:** Rockaway Beach

Customer # 0705684 **County:** Taney **Sample Reference ID:** **Collect Date:** 9/27/2007

Collector: Gregory S. Perkins **Affiliation:** SWRO **Collect Time:** 12:50 PM

Matrix: Nonpotable Water **Sample Comment:** Rockaway Beach WWTF outfall 001 effluent. Grab

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The analysis of this sample was performed in accordance with procedures approved or recognized by the U.S. Environmental Protection Agency.

Connie Giesing

Connie Giesing, Laboratory Manager
Environmental Services Program
Field Services Division

Date Printed: 10/22/2007

Paul Marshall/R7/USEPA/US
07/15/2009 02:12 PM

To Lyle Cowles/R7/USEPA/US@EPA
cc John Houlihan/R7/USEPA/US@EPA
bcc
Subject Rockaway Beach and Am Family Resorts

Due to the logistics difficulties for the above referenced facilities, here is my proposal for getting both done this fiscal year.

American Family Resorts was a state request which we are committed to do, while Rockaway Beach is a request from WENF because of ongoing problems there. Consequently, they are pretty much equal in importance to us. Because American Family Resorts is a small package plant, here is my proposal.

On the way to Rockaway Beach, stop at American Family Resorts and take a grab sample of their effluent. At this time, you can conduct a CEI of the facility if it is convenient. Proceed to Rockaway Beach and conduct a CSI- 2 days of sampling is acceptable. On the return trip, stop again at American Family Resorts and pull another grab sample. If the CEI wasn't done on the way down, perform it at this time.

Let me know if this works,
Paul

Cynthia Home; 913 384 3426

Paul Marshall/R7/USEPA/US
07/16/2009 09:23 AM

To Lyle Cowles/R7/USEPA/US@EPA
cc Cynthia Sans/R7/USEPA/US@EPA, John Houlihan/R7/USEPA/US@EPA
bcc
Subject Re: Fw: Rockaway Beach and Am Family Resorts

There is probably nothing in inspectrax for Rockaway Beach since that was a late request. The info on American Family Resort reads:

From meeting w/ Sans 8/4/09 1:15

✓ Bypassing —
✓ broke blem pump for — POY removal
✓ Is it plugged in
✓ Is it operating? — How much

RB Marching Orders:

Result

Jul - Sept. 07 — AO

AO

Call Greg perkins

State: Oct/Nov. 07 — NOV
State: Oct 08 — NOV — (Same things)
July: 09 — NOV — unreported bypass

✓ Why Not getting: March Apr. 09 → DMR's? (got Apr.)

• AO & NOV Have they done the things? Have they sustained them?

✓ Focus on Record Keeping: +

State has asked for revised O&M manual

✓ Are they operating & maintaining the plant adequately?

✓ Why May DMR w/ Samples from June 09?

+ ✓ Why DMR's for May & Apr. 09 not submitted.

✓ Bypasses:

✓ Estimated distance to receiving WB; Freq.? Evidence?

e-mail to cynthia

← Cover letter + attachments for Response to OC

~~Perkins: Documentation & paperwork; this operator does not provide it especially on stuff he does~~ ~~tooke~~

— what @ I/I & sludge reports? 2006, 2007, 2008 → 1st half of 08 rec'd

To Do

~~Plug in Batteries~~

~~Hooker Truck~~ — Maybe ~~New operator in Sept. according to perkins. Does this change timing of insp?~~

~~call perkins~~

~~Lab procedures~~ ?

~~Rec permit & Joe's insp report~~

~~Google map to Facility~~

~~Fed-EX shipping locations~~

"SOP & functional" ?

removal efficiency calc's
Bench sheets
Lab data sheets

What are "all" the supporting documents"

Clarify w/ Cynthia : verify missing records (see spread sheet)
- bypasses were only from Sand Filter Backwash pumps & not raw inf.?

- Are the enforceable items contained in the OC or in the City's responses to the NOPV, NOV, OC?

— #35 of Order for Compliance: Semi-Annual report for I/I

- ~~were there attachments to their "Response to the order of Compliance"?~~

— Has there been any correspondence w/ EPA since Andrey's May 2008 letter? — NO. Just verbal

⊕ I will Escort him home to see his paperwork

(Greg Now Am)
(407) 891-4313

8/6/09
Conv. w/ Perkins: not keeping records

how many other facilities does he take care of

⊛ must be able to produce the records but they don't have to be in the plant

Flow meas. equip: Factory authorized rep. is recommended but not required.

Another operator may be hired Sept. 1

Are they getting paid by the other 2 communities?
Loads sometimes over 400 mg/l

Can I get copies from Greg of Agreements

M

Environ. concern was a complaint

bypasses? – raw sewage + return A.C.T. sludge from

MW & Bull Cr. are both mostly mobile home parks w/ a couple of convenience stores

Buck (old operator) works on collection system & Dr. H_2O supply

Month APRIL 2009

Flow meter/ Bull Creek/Merriam Wood pumps

Wastewater Data
Rockaway Beach

Flow measurement

Date	Reading	Gallons in 1000 increments	Pump 1 hour meter	Pump 2 Hour Meter	Pump 3 Hour Meter	Backup Motor	Chemical measure in inches	operator	Time 24 Hour Clock
pre. Month									
1									
2	339984		8502	7415	75				
3	340128		8509	7419	75				
4									
5									
6	340565		8531	7431	75				
7	340733		8539	7437	75				
8	340879		8546	7440	75				
9	341036		8554	7445	75				
10									
11									
12									
13	341712		8589	7465	75				
14	341866		8595	7468	75				
15	342041		8602	7473	756				
16	342174		8609	7477	756				
17	342322		8615	7482	757				
18									
19									
20	342804		8639	7497	7587	17.8		AB	1324
21	342945		8646	7502	7588	17.8		AB	1235
22	343094		8653	7508	7593	17.8		AB	1304
23	343235		8658	7512	7597	17.8		AB	1243
24									
25									
26									
27	343818		8683	7528	7614	17.8		AB	1229
28	343975		8690	7533	7614	17.8		AB	1407
29	344168		8697	7537	7614	17.8		AB	1342
30	344263		8703	7541	7614	17.8		AB	1248
31									
Total									
Average									

Mar, APR. June 2009

DMR Lab data Sheets, operating records, etc. inc. w/ data package

Barre

Barre

Barrel

Month April 2007
Flow Meters/ Effluent/ Rockaway Inf.

Wastewater Data
Rockaway Beach

Date	Rockaway Influent Meter	Gallons in 1000 increments	Effluent Meter	Gallons in 1000 increment	Time 24 Hour clock	operator	Manual Check Backwash filters	
Pre.month								
1								
2	694158		1421198		1447	AB		
3	694259		1421378	180,000	1400	AB		
4								
5								
6	694566		1421948	570,000	1236	AB		
7	694651		1422183	235,000	1500	AB		
8	694783		1422367	184,000	1436	AB		
9	694889		1422563	196,000	1501	AB		
10								
11								
12								
13	695305		1423503	940,000	1438	AB		
14	695410		1423813	310,000	1451	AB		
15	695518		1424020	207,000	1537	AB		
16	695612		1424184	164,000	1309	AB		
17	695721		1424386	202,000	1418	AB	2	
18								
19								
20	696030		1425122	736,000	1326	AB		
21	696131		1425299	177,000	1240	AB		
22	696235		1425473	174,000	1229	AB	2+4	
23	696341		1425678	205,000	1251	AB		
24								
25								
26								
27	696770		1426567	899,000	1535	AB	1,2,4	R
28	696868		1426780	213,000	1409	AB		R- 0.3
29	696971		1426971	191,000	1345	AB	3	PC 55
30	697076		1427167	196,000	1259	AB		65
31								65R
Total				5,979,000				
Average				332,000				

OR-50
C-50

O-35
C-50
C-60
R-55

R 2"

O-50
C-50
C-65
C-55
C-65

C-55
PC-50
C-55
C-75

Month April 2009
Flow Meter/ Merriam Woods

Wastewater Data
Rockaway Regional Plant

Date	Reading	Gallons in 1000	Ambient Temp. Farenheit	Rain,Snow,Ice, Clear	Time 24 Hour Clock	operator		
pre.month								
1			50	R				
2	35713				1508	AB		
3	37588		55	C	1524	AB		
4								
5								
6	36016		35	O	1333	AB		
7	36109		55	C	1640	AB		
8	36195		60	C	1513	AB		
9	36264		55	R	1515	AB		
10								
11								
12								
13	36645		45	O	1531	AB		
14	36742		50	C	1607	AB		
15								
16								
17	36912		65	C	1538	AB		
18								
19								
20	37239		55	C	1555	AB		
21	37312		50	PC	1434	AB		
22	37391		60	C	1521	AB		
23	37462		75	C	1438	AB		
24								
25								
26								
27								
28								
29								
30								
31								
Total								
Average								

Laboratory Results

Allen Bush
*** CLIENT ON CREDIT HOLD ***
*** DO NOT SEND ***
Branson West, MO 65737
Attn: Allen Bush

Date Received : 04/30/09 15:35
Report Date : 05/27/09
Customer # : 263426
P.O. Number :
Facility :

Sample No: 09051006-1 Collect Date 04/30/09 12:45
Client ID : ROCKAWAY BEACH Site : INFLUENT Locator : COMPOSITE

Parameter	Qualifier	Result	Analysis Date	Analyst
SM (18) 2540D				
Solids, Total Suspended		26 mg/l	04/30/09 16:30	MMO
SM (18) 4500 NH3 B,F	*** Analyzed at the St. Louis, MO Lab ***			
Nitrogen, Ammonia as N Distilled		8.8 mg/l	05/05/09 17:00	KE
SM (18) 4500 P B,F	*** Analyzed at the St. Louis, MO Lab ***			
Phosphorus, Total as P		3.2 mg/l	05/12/09 12:27	DM
SM (18) 5210B				
Biochemical Oxygen Demand		43 mg/l	05/01/09 11:50	MMO

Sample No: 09051006-2 Collect Date 04/30/09 12:32
Client ID : ROCKAWAY BEACH Site : EFFLUENT Locator : COMPOSITE

Parameter	Qualifier	Result	Analysis Date	Analyst
SM (18) 2540D				
Solids, Total Suspended	<	2 mg/l	04/30/09 16:30	MMO
SM (18) 4500 NH3 B,F	*** Analyzed at the St. Louis, MO Lab ***			
Nitrogen, Ammonia as N Distilled	<	0.1 mg/l	05/05/09 17:00	KE
SM (18) 5210B				
Biochemical Oxygen Demand	<	4 mg/l	05/01/09 11:50	MMO

Sample No: 09051006-3 Collect Date 04/30/09 12:09
Client ID : ROCKAWAY BEACH Site : EFFLUENT Locator : GRAB

Parameter	Qualifier	Result	Analysis Date	Analyst
EPA 1664 REV 2/99	*** Analyzed at the St. Louis, MO Lab ***			
Hexane Ext. Material (HEM) by LLE	<	5 mg/l	05/07/09 15:00	MEP
SM (18) 9222D				
Fecal Coliform	<	10 cfu/100 ml	04/30/09 17:02	CMC

Laboratory Results

Allen Bush
*** CLIENT ON CREDIT HOLD ***
*** DO NOT SEND ***
Branson West, MO 65737
Attn : Allen Bush

Date Received : 04/30/09 15:35
Report Date : 05/27/09
Customer # : 263426
P O. Number :
Facility :

Sample No: **09051006-4** Collect Date **04/30/09 11:45**
Client ID : **MERRIAM WOOD** Site : **INFLUENT** Locator : **COMPOSITE**

Parameter	Qualifier	Result	Analysis Date	Analyst
SM (18) 2540D				
Solids, Total Suspended		340 mg/l	04/30/09 16:30	MMO
SM (18) 4500 NH3 B,F	*** Analyzed at the St. Louis, MO Lab ***			
Nitrogen, Ammonia as N Distilled		46 mg/l	05/05/09 17:00	KE
SM (18) 4500 P B,F	*** Analyzed at the St. Louis, MO Lab ***			
Phosphorus, Total as P		8.7 mg/l	05/12/09 12:27	DM
SM (18) 5210B				
Biochemical Oxygen Demand		380 mg/l	05/01/09 11:50	MMO

Sample No: **09051006-5** Collect Date **04/30/09 11:52**
Client ID : **BULL CREEK** Site : **INFLUENT** Locator : **COMPOSITE**

Parameter	Qualifier	Result	Analysis Date	Analyst
SM (18) 2540D				
Solids, Total Suspended		430 mg/l	04/30/09 16:30	MMO
SM (18) 4500 NH3 B,F	*** Analyzed at the St. Louis, MO Lab ***			
Nitrogen, Ammonia as N Distilled		58 mg/l	05/05/09 17:00	KE
SM (18) 4500 P B,F	*** Analyzed at the St. Louis, MO Lab ***			
Phosphorus, Total as P		11 mg/l	05/12/09 12:27	DM
SM (18) 5210B				
Biochemical Oxygen Demand		370 mg/l	05/01/09 11:50	MMO

Laboratory Results

Allen Bush
*** CLIENT ON CREDIT HOLD ***
*** DO NOT SEND ***
Branson West, MO 65737
Attn : Allen Bush

Date Received : 04/30/09 15:35
Report Date : 05/27/09
Customer # : 263426
P.O. Number :
Facility :

Certified by : _____
Chad Cooper, Project Manager

This report shall not be reproduced, except in full, without the written approval of the laboratory.

PDC LABORATORIES, INC.

BOD Method 5210B(Mod), EPA 405.1 (Mod)

FILE INFORMATION

Date:	3/27/2009	Analyst:	MMO
Date:	4/1/2009	Analyst:	MMO
Page	1 of 10		
FILENAME:	20090327 .xls		

PRESSURE IN IN START	28.272
PRESSURE IN MM START	718.1088
PRESSURE IN IN FINISH	28.2815
PRESSURE IN MM FINISH	718.3501

REAGENT / STANDARD INFORMATION

	Manuf.	Exp. Date	Lot #	
Glucose:	FISHER		BO118469	SPMO1-8A
Glutamic Acid:	FISHER		45212	SPMO1-7E
PO4 Buffer:	VWR	12/31/2009	8003	SPMO2-4F
MgSO4 Soln:	VWR	3/31/2010	8205	SPMO2-10
CaCl2 Soln:	VWR	7/31/2010	8204	SPMO2-10
FeCl3 Soln:	VWR	8/31/2010	8235	SPMO2-4C
Nitrification Inhibitor:	HACH			
Seed:	SWTP	SWTP		RAW COM
GGA Mixed Soln:	NA	4/24/2009	RLB5-17	

BOD / cBOD QC DATA

	BOTTLE #				
	USB	USB	SB	SB	LCS
Unseeded Blanks					
Unseeded Blank DOi	8.47	8.48			
Unseeded Blank DOf	8.30	8.50			
Seed Controls / Blanks					
ml of Seed			100		
L of Dil. Water			20		
Seeded Blank DOi			8.48	8.45	
Seeded Blank DOf			7.63	7.70	
GGA Knowns					
ml Standard					6
Bottle Volume, ml					300
Dec. Equiv. of % Sample					0.02
Dec. Equiv. of % Dil. Water					0.980
DOi					8.48
DOf					3.40
BOD					214.8

METER CALIBRATION

Set	Date	Time
Cal #1	27-Mar-09	11:52
Cal #2	27-Mar-09	14:08

Work Group # WG184982
Run ID:

Pull	Date	Time
Cal #1	1-Apr-09	12:05
Cal #2	1-Apr-09	13:36

INCUBATION PERIOD

Time In:	13:17	14:50	16:15	18:20
Time Out:	12:03			

DILUTION WATER TEMPATURE
TEMP: 18.31
RANGE 19-21

QC ASSESSMENT	Unseeded Blank Depletion, mg/l =	0.075 ACCEPTABLE
	Seeded Blank Depletion, mg/l =	0.80 ACCEPTABLE
	Known Recovery is ACCEPTABLE	

Revision 7D 1/21/2004 WJM

* If no, adjust between 6.5 and 7.5

PDC LABORATORIES, INC.

FILENAME: 20090327 .xls

BOD / cBOD SAMPLE DATA

Time of Dilutions (per page)	12:56											
CLIENT	ROCKAWAY EFFLUENT				ROCKAWAY INFLUENT				GALENA INFLUENT			
SAMPLE NUMBER	09033832-1A				09033832-3A				09033834-1A			
pH between 6.5 and 7.5 *	YES				YES				YES			
Chlorine Check / ml titrant	negative / 0 ml titrant				negative / 0 ml titrant				negative / 0 ml titrant			
Nitrification Inhibitor Added	NO				NO				NO			
Filtered	NO				NO				NO			
Bottle #	41	42	43	44	51	52	53	54	61	62	63	64
Sample Vol., ml	5.0	10.0	15.0	30.0	3.0	5.0	10.0	15.0	3.0	5.0	10.0	15.0
Bottle Vol., ml	60	60	60	60	300	300	300	300	300	300	300	300
DOi of Sample	6.64	6.64	6.64	6.64	3.59	3.59	3.59	3.59	1.17	1.17	1.17	1.17
Dec. Equiv. of % Sample	0.083	0.167	0.250	0.500	0.010	0.017	0.033	0.050	0.010	0.017	0.033	0.050
Dec. Equiv. of % Dil. Water	0.917	0.833	0.750	0.500	0.990	0.983	0.967	0.950	0.990	0.983	0.967	0.950
DOi of Bottle	8.31	8.16	8.01	7.55	8.42	8.38	8.30	8.22	8.39	8.34	8.22	8.10
DOf of Bottle	7.45	7.38	7.20	6.72	3.15	0.60	0.00	0.00	4.78	2.25	0.27	0.00
Depletion	0.13	0.11	0.21	0.43	4.47	7.00	7.53	7.46	2.82	5.31	7.18	7.34
Dilution Factor	1	1	1	1	1	1	1	1	1	1	1	1
Bottle Specific BOD	1.555	0.685	0.835	0.865	447.425	419.825	225.875	149.225	282.005	318.405	215.355	146.805
BOD of Useable Bottles				0.87	447.43				282.01	318.41		
Average Useable BOD	0.87				447.43				300.21			
Reportable BOD	0.9				447.4				300.2			
Reported BOD	BOD = <4				BOD = 447.4				BOD = 300.2			

Revision 7D 1/21/2004 WJM

* If no, adjust between 6.5 and 7.5

PDC LABORATORIES, INC.

FILENAME: 20090327 .xls

BOD / cBOD SAMPLE DATA

Time of Dilutions (per page)	12:56											
CLIENT	GALENA EFFLUENT				MERRIAM WOODS INFLUNENT				BULL CREEK INFLUENT			
SAMPLE #	09033834-2A				09033844-1A				09033851-1A			
pH between 6.5 and 7.5 *	YES				YES				YES			
Chlorine Check / ml titrant	negative / 0 ml titrant				negative / 0 ml titrant				negative / 0 ml titrant			
Nitrification Inhibitor Added	NO				NO				NO			
Filtered	NO				NO				NO			
Bottle #	71	72	73	74	81	82	83	84	91	92	93	94
Sample Vol., ml	5.0	10.0	15.0	30.0	3.0	5.0	10.0	15.0	3.0	5.0	10.0	15.0
Bottle Vol., ml	60	60	60	60	300	300	300	300	300	300	300	300
DOi of Sample	7.03	7.03	7.03	7.03	0.88	0.88	0.88	0.88	1.10	1.10	1.10	1.10
Dec. Equiv. of % Sample	0.083	0.167	0.250	0.500	0.010	0.017	0.033	0.050	0.010	0.017	0.033	0.050
Dec. Equiv. of % Dil. Water	0.917	0.833	0.750	0.500	0.990	0.983	0.967	0.950	0.990	0.983	0.967	0.950
DOi of Bottle	8.35	8.23	8.11	7.75	8.39	8.34	8.21	8.09	8.39	8.34	8.22	8.10
DOf of Bottle	7.31	7.28	6.84	6.16	4.87	3.15	0.25	0.00	5.43	3.21	0.25	0.00
Depletion	0.30	0.28	0.67	1.19	2.73	4.40	7.19	7.33	2.17	4.35	7.20	7.34
Dilution Factor	1	1	1	1	1	1	1	1	1	1	1	1
Bottle Specific BOD	3.625	1.675	2.665	2.375	272.715	264.115	215.665	146.515	216.935	260.735	215.885	146.735
BOD of Useable Bottles				2.38	272.72	264.12			216.94	260.74		
Average Useable BOD	2.38				268.42				238.84			
Reportable BOD	2.4				268.4				238.8			
Reported BOD	BOD = <4				BOD = 268.4				BOD = 238.8			

Revision 7D 1/21/2004 WJM

* If no, adjust between 6.5 and 7.5

PDC Laboratories, Inc.

TOTAL SUSPENDED SOLIDS / VOLATILE SUSPENDED SOLIDS

EPA 160.2 / SM 2540 D & E

R238766

Analyst: mmo Date: 3/27/09 Logbook #: 8 Workgroup#: WG185066 Run I.D.#: ~~R238549~~ mmo

TSS:
Time In: 18:46 Temperature In: 104.6 Time Out: 3/30/09 10:18 Temperature Out: 104.6
Check crucible: AA 1st Wt: 16.7876 Time: 13:57 2nd Wt: 16.7876 Time: 14:03

VSS:
Time In: _____ Temperature In: _____ Time Out: _____ Temperature Out: _____
Check crucible: _____ 1st Wt: _____ Time: _____ 2nd Wt: _____ Time: _____

Sample ID	Sample Vol. (mL)	Crucible #	Crucible Weight	Dried Weight	TSS (mg/L)	Comments	RDL = 2
BLANK	250	Q	18.3369	18.3370	0.4	Pass	
09033832-1A	250	TOP	15.6975	15.6979	1.6	Pass RPD=0	=2
09033832-1A dup	250	GT	15.5633	15.5637	1.6		=2
09033832-3A	50	TIC	22.3945	22.4253	616		=10
09033834-1A	50	V8	16.3765	16.4016	502		=10
09033834-2A	250	WY	16.9293	16.9298	2.4		=2
09033844-1A	50	NY	17.6883	17.7033	300		=10
09033851-1A	50	BOG	22.2021	22.2203	364		=10
09033936-1A	250	NC	18.9910	18.9917	2.8		=2
09033941-1A	100	89	15.9438	15.9472	34		=5
09033945-1A	250	XX	17.5978	17.5987	3.6		=2
MAES 09033969-1A	75	BIG	17.7176	17.7410	312		=6.7
WCR Expansion Unit Outfall	250	MO	18.4288	18.4291	1.2	Pass RPD=0	=2
	250	99	18.4628	18.4631	1.2	09033971-1E	=2
(002) 09033971-3E	250	Tr	16.9345	16.9349	1.6		=2
(004) 09033971-2E	100	KIL	20.4699	20.4726	27		=5
(006) 09033971-4E	250	AA	16.7870	16.7876	2.4		=2

3/27/09

TSS (mg/L) = ((Dried Final Weight - Crucible Final Weight)*1000000) / Sample Volume
VSS (mg/L)=((Crucible dried @ 105)-(Crucible after muffle)*1000000)/Sample Volume

Analyst: Michael Desongo Date: 3/27/07

Read & Understood By: _____ Date: _____

Data entered and approved 3/30/09 mmo

X:\LgTrudyForms\inorg tss

PHOSPHATE DIGESTION

SM 4500 PB, EPA 365.1, QuikChem 10-115-01-4-E,10-115-01-1-F

Logbook #: 8
Analyst: GDM
Date / Time: 4-7-09
WG 185404

$(NH_4)_2S_2O_8$: WC 10-12C
5.6M H_2SO_4: PVA 4-10
Curve Stock Std: PVA 4-28

Check Std: PVA 4-29C
Spike: PVA 4-25C
Lab Control: PVA 4-26C

Sample	Preserved	Initial Vol/Weight	Final Vol (mL)	Comments
MB	—	50mL	50mL	
LCS	—			
ICV	—			
CCV	—			
0904 1302-1	✓			
-1 MS	✓			
-1 MSD	✓			
-3	✓			
-4	✓			
-5	✓			
0903 3832-3	✓			
3834-1	✓			
3844-1	✓			
3851-1	✓			
4024-1	✓			
-2	✓			
-3	✓			
-3 MS	✓			
-3 MSD	✓			
-4	✓			
-5	✓			
-6	✓			
-7	✓			
-8	✓			
-9	✓			
-10	✓			

Analyst: [signature] Date: 4-7-09
Read & Understood By: _____ Date: _____

PDC Laboratories, Inc.

TOTAL / POLY PHOSPHOROUS

EPA 365.1, SM 4500 PF, QuikChem 10-115-01-4-E, 10-115-01-1-F

Analysis Date: 04/08/09 Instrument ID: 2 Lachat

Analyst: Tin WG#: 185528 ✓ Run ID: 239502

Calibration Date: 04/08/09 ✓185404

TRACEABILITY

Ammonium Tartrate:	2 Lachat	4-5		
Antimony Potassium Tartrate:	2 Lachat	4-3		
Molybdate Color Reagent:	2 Lachat	4-7		
.33M Ascorbic Acid Reducing Solution:	2 Lachat	4-1		
Calibration Standard:	PVA	4-28		
ICV:	PVA	4-29	True Value:	4 mg/L
Alternating CCV:	PVA	4-29	True Value:	4 mg/L
Matrix Spike:	PVA	4-25	True Value:	1 mg/L
Lab Control:	PVA	4-26	True Value:	2 mg/L
.13M H_2SO_4 Carrier:	2 Lachat	4-11		

Analyst: [illegible] Date: 04/08/09

Read & Understoody By: _____ Date: _____

X:\gtrudy\forms\inorg\Traceability frm_Total Poly Phos.xls/tmd 12-02-04

INORGANICS QC CHECKLIST

Work Group: 185528
185404

Analysis Date: 04/08/09

Analyst: Tin

	NA	Yes	No	Comments/Corrective Action
Is the method blank free of contamination?		✓		
Are all analyses free of interferences from previous analyses? If not, does the quality of the data remain unimpaired?		✓		
Are the recoveries from the lab control sample acceptable?		✓		
Are reported values consistent with the required units?		✓		
Are the detection limits reported correctly?		✓		
Are dilution factors entered correctly?		✓		
Is the calibration curve correlation coefficient acceptable ($r \geq 0.995$)?		✓		
Are the ICV and CCVs within criteria? If not, is an appropriate explanation provided?		✓		
Are the MS/MSD recoveries within the acceptance limits? If not, are the samples appropriately flagged?		✓	✓	
Batch checked for data entry errors? (For electronic data transfer only)	✓			
Has this checklist been completed?		✓		

Note: Any "No" answer requires a comment.

Additional comments:

Completed By: Tin [illegible] Date: 04/08/09

Reviewed By: _____ Date: _____

Author: lgtth

Date : 4/8/2009

Original Run Filename: OM_4-8-2009_10-25-36AM.OMN created 4/8/2009 10:25:36 AM
Original Run Author's Signature: [lgtth]
Current Run Filename: OM_4-8-2009_10-25-36AM.OMN last modified 4/8/2009 12:16:51 PM
Current Run Author's Signature: [lgtth]
Description: Default New Run

Sample	Cup No.	Channel 3 Total Phosphorus Conc. (ppm)	Area (Vs)	Detection Time	ADF	MDF	Weight	
icv 4.0	S9	4.01	16.9	4/8/2009@10:26:24 AM				100.2%
	Known Conc:	4.00						
DQM Test: > + Percent Relative Difference								
	Result:	0.3 < 10.0						
	Message	Pass						
	Action	None						
DQM Test: < - Percent Relative Difference								
	Result:	0.3 < 10.0						
	Message	Pass						
	Action	None						
icb	S11	0.0299	0.0173	4/8/2009@10:27:54 AM				
	Known Conc:	0.100						
DQM Test: > + Concentration Limit								
	Result:	0.0299 < 0.100						
	Message	Pass						
	Action	None						
DQM Test: < - Concentration Limit								
	Result:	0.0299 > -0.100						
	Message	Pass						
	Action	None						
	Calibration:	Table/Fig. 1						
mb wg185404	1	0.0304	0.0198	4/8/2009@10:29:24 AM				MB <.1
lcs	2	1.83	7.81	4/8/2009@10:30:06 AM				LCS 91.5%
09041302-1	3	5.52	23.0	4/8/2009@10:30:47 AM				
09041302-1 ms	4	7.11	29.2	4/8/2009@10:31:28 AM				
09041302-1 msd	5	7.49	30.7	4/8/2009@10:32:09 AM				MS 159%
09041302-3	6	9.16	37.0	4/8/2009@10:32:50 AM				msd 197%
09041302-4	7	0.108	0.365	4/8/2009@10:33:31 AM				RPD 5.2%
09041302-5	8	0.168	0.626	4/8/2009@10:34:11 AM				
09033832-3	9	7.20	29.5	4/8/2009@10:34:51 AM				
09033834-1	10	4.58	19.2	4/8/2009@10:35:32 AM				
ccv4	S10	4.07	17.1	4/8/2009@10:36:12 AM				
	Known Conc:	4.00						101.8%
DQM Test: > + Percent Relative Difference								
	Result:	1.7 < 10.0						
	Message	Pass						
	Action	None						
DQM Test: < - Percent Relative Difference								
	Result:	1.7 < 10.0						
	Message	Pass						
	Action	None						
ccb	S11	0.0304	0.0198	4/8/2009@10:37:41 AM				
	Known Conc:	0.100						
DQM Test: > + Concentration Limit								
	Result:	0.0304 < 0.100						
	Message	Pass						
	Action	None						
DQM Test: < - Concentration Limit								
	Result:	0.0304 > -0.100						
	Message	Pass						
	Action	None						
09033844-1	11	RA 12.2	48.1	4/8/2009@10:39:10 AM				
09033851-1	12	6.44	26.6	4/8/2009@10:39:50 AM				
09034024-1	13	13.6	11.5	4/8/2009@10:40:31 AM		5.00		
09034024-2	14	8.98	36.3	4/8/2009@10:41:10 AM				
09034024-3	15	4.89	20.5	4/8/2009@10:41:49 AM				
09034024-3 ms	16	5.28	22.0	4/8/2009@10:42:31 AM				MS 39%
09034024-3 msd	17	5.32	22.2	4/8/2009@10:43:13 AM				msd 43%

RPD 0.75%

Author: lgtth

Date : 4/8/2009

09034024-4	18	2.91	12.4	4/8/2009@10:43:54 AM			
09034024-5	19	2.02	8.62	4/8/2009@10:44:35 AM			
09034024-6	20	1.20	5.14	4/8/2009@10:45:16 AM			
ccv 4	S10	4.08	17.2	4/8/2009@10:45:57 AM			
Known Conc:		4.00					102%
DQM Test: > + Percent Relative Difference							
Result:		1.9 < 10.0					
Message		Pass					
Action		None					
DQM Test: < - Percent Relative Difference							
Result:		1.9 < 10.0					
Message		Pass					
Action		None					
ccb	S11	0.0304	0.0198	4/8/2009@10:47:27 AM			
Known Conc:		0.100					
DQM Test: > + Concentration Limit							
Result:		0.0304 < 0.100					
Message		Pass					
Action		None					
DQM Test: < - Concentration Limit							
Result:		0.0304 > -0.100					
Message		Pass					
Action		None					
4/8/09 ccb 03 40 24 %							
09043024-7	21	1.06	4.51	4/8/2009@10:48:57 AM			
09043024-8	22	1.24	5.32	4/8/2009@10:49:37 AM			
09043024-9	23	1.29	5.52	4/8/2009@10:50:18 AM			
09043024-10	24	1.47	6.31	4/8/2009@10:50:59 AM			
09043024-11	25	1.33	5.68	4/8/2009@10:51:39 AM			
09043024-12	26	0.952	4.05	4/8/2009@10:52:22 AM			
rinse	27	0.0446	0.0827	4/8/2009@10:53:06 AM			MB <.1
mb-2	28	0.0325	0.0290	4/8/2009@10:53:51 AM			LCS 101%
lcs-2 03 40 24-03	29	2.02	8.63	4/8/2009@10:54:31 AM			
09043024-13	30	0.894	3.80	4/8/2009@10:55:15 AM			
ccv 4	S10	4.06	17.1	4/8/2009@10:55:55 AM			
Known Conc:		4.00					101.5%
DQM Test: > + Percent Relative Difference							
Result:		1.6 < 10.0					
Message		Pass					
Action		None					
DQM Test: < - Percent Relative Difference							
Result:		1.6 < 10.0					
Message		Pass					
Action		None					
ccb	S11	0.0301	0.0184	4/8/2009@10:57:24 AM			
Known Conc:		0.100					
DQM Test: > + Concentration Limit							
Result:		0.0301 < 0.100					
Message		Pass					
Action		None					
DQM Test: < - Concentration Limit							
Result:		0.0301 > -0.100					
Message		Pass					
Action		None					
09034024-13 ms	31	1.72	7.35	4/8/2009@10:58:55 AM			MS 82.6%
09034024-13 msd	32	1.80	7.69	4/8/2009@10:59:36 AM			MSD 90.6%
03 4024-14 09034024-14	33	0.997	4.25	4/8/2009@11:00:18 AM			RPD 4.5%
09034024-15	34	2.32	9.91	4/8/2009@11:00:58 AM			
18/09 09034024-16	35	0.991	4.23	4/8/2009@11:01:40 AM			
09034024-17	36	0.862	3.66	4/8/2009@11:02:21 AM			
09034024-18	37	0.891	3.79	4/8/2009@11:03:01 AM			
09034024-19	38	0.840	3.57	4/8/2009@11:03:42 AM			
09034024-20	39	0.665	2.81	4/8/2009@11:04:23 AM			
09034024-21	40	0.616	2.59	4/8/2009@11:05:04 AM			
ccv 4	S10	4.07	17.1	4/8/2009@11:05:44 AM			
Known Conc:		4.00					101.8%
DQM Test: > + Percent Relative Difference							
Result:		1.7 < 10.0					
Message		Pass					

Author: lgtth

Date : 4/8/2009

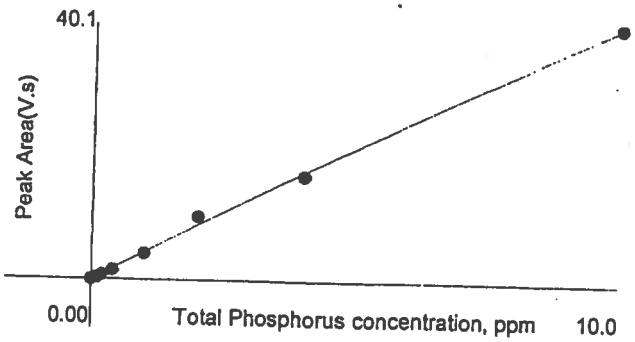
	Action	None					
09041256-1 1/50	101	2.52e+3	4.30	4/8/2009@12:09:47 PM		2500.00	1.00000 g
09041383-1 1/10	102	2.74e+3	22.8	4/8/2009@12:10:29 PM		500.00	1.00000 g
09033844-1	11	15.6	13.3	4/8/2009@12:11:09 PM		5.00	
09041337-4	72	17.2	34.9	4/8/2009@12:11:50 PM		2.00	
09041136-1 1/2	95	778	31.7	4/8/2009@12:12:32 PM		100.00	1.00000 g
09041136-1 ms 1/2	96	794	32.3	4/8/2009@12:13:15 PM		100.00	1.00000 g
09041136-1 msd 1/2	97	853	34.6	4/8/2009@12:13:57 PM		100.00	1.00000 g
ccv 4	S10	4.18	17.6	4/8/2009@12:14:37 PM			
	Known Conc:	4.00					
DQM Test: > + Percent Relative Difference							
	Result:	4.5 < 10.0					
	Message	Pass					
	Action	None					
DQM Test: < - Percent Relative Difference							
	Result:	4.5 < 10.0					
	Message	Pass					
	Action	None					
ccb	S11	0.0322	0.0277	4/8/2009@12:16:07 PM			
	Known Conc:	0.100					
DQM Test: > + Concentration Limit							
	Result:	0.0322 < 0.100					
	Message	Pass					
	Action	None					
DQM Test: < - Concentration Limit							
	Result:	0.0322 > -0.100					
	Message	Pass					
	Action	None					

Spike recovery on the Sample
ms 32%
msd 150%
RPD 7.2%
104.5%

Table 1: Total Phosphorus

	Conc. (ppm)	Rep	Peak Area (Volt-s)	Peak Height (Volts)	% Residual	Detection Date	Detection Time
1	10.0	1	40.1	4.47	-0.2	4/8/2009	10:19:19 AM
2	4.00	1	16.1	1.80	3.9	4/8/2009	10:20:03 AM
3	2.00	1	9.71	1.08	-14.3	4/8/2009	10:20:46 AM
4	1.00	1	4.00	0.439	5.9	4/8/2009	10:21:29 AM
5	0.400	1	1.42	0.158	14.9	4/8/2009	10:22:12 AM
6	0.200	1	0.666	0.0746	17.0	4/8/2009	10:22:54 AM
7	0.100	1	0.319	0.0360	13.4	4/8/2009	10:23:36 AM
8	0.00	1	0.00532	-1.59e-4		4/8/2009	10:24:19 AM

Figure 1: Total Phosphorus



Area = - 0.0339 * Conc^2 + 4.35 * Conc - 0.0663
Conc = 5.72e-4 * Area^2 + 0.226 * Area + 0.0260
Correlation Coefficient (r) = 0.99922

No Weighting

PDC Laboratories, Inc.

High Range - AMMONIA NITROGEN / TKN

EPA 350.1, EPA 351.1,SM 4500 NH_3BH, QuikChem 10-107-06-1-I,10-107-06-1-J

Analysis Date: 04-13-09

Instrument ID: 2 Lachat

Analyst: Tim

WG#: ✓ 185910 NT. ✓ 185841 Dist

Run ID: 239922 239946

Calibration Date: 04-13-09

TRACEABILITY

Sodium Phenolate:	2 Lachat 4-28		
Sodium Nitroprusside:	2 Lachat 4-31		
Sodium Hypochlorite:	2 Lachat 4-37		
Buffer:	2 Lachat 4-34		
Calibration Prep STD:	2 Lachat 4-22		
ICV:	2 Lachat 4-16A	True Value:	15 mg/L
CCV:	2 Lachat 4-16B	True Value:	15 mg/L, 2 mg/L
High Range Matrix Spike:	2 Lachat 4-18B	True Value:	2 mg/L
1M NaOH Soln:	2 Lachat 4-35		
H_2SO_4 Carrier/Diluent:	2 Lachat 4-26		

Analyst: [illegible] Date: 04-13-09

Read & Understood By: _____ Date: _____