

ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories
2425 New Holland Pike
Lancaster, PA 17605-2425

Prepared for:

NLNA
833 North 5th Street
Philadelphia PA 19123

May 10, 2010

Project: NLNA - Cistern Water Testing

Submittal Date: 04/26/2010

Group Number: 1191887

State of Sample Origin: PA

Client Sample Description

Grab Water Sample

Lancaster Labs (LLI) #

5963667

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC Philadelphia Water Department
COPY TO

Attn: Susan Patterson

Questions? Contact Environmental Client Services

Respectfully Submitted,

Diane L. Lockard
Principal Microbiologist Group Leader



Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: Grab Water Sample
NLNA - Cistern Water Testing

LLI Sample # PW 5963667
LLI Group # 1191887
Account # 01907

Project Name: NLNA - Cistern Water Testing

Collected: 04/26/2010 08:05 by SP NLNA
 through 04/26/2010 08:20 833 North 5th Street
 Submitted: 04/26/2010 15:30 Philadelphia PA 19123
 Reported: 05/10/2010 19:50
 Discard: 05/25/2010

NLNAG

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
GC Extractable TPH			SW-846 8015B modified	mg/l	
08093	TPH by GC/FID water C8-C40	n.a.	< 0.58	0.58	1
Metals			EPA 200.7 rev 4.4	mg/l	
07049	Cadmium	7440-43-9	< 0.0050	0.0050	1
The EPA has set a maximum contaminant level of 0.005 mg/l for cadmium.					
01750	Calcium	7440-70-2	16.5	0.200	1
07051	Chromium	7440-47-3	< 0.0150	0.0150	1
The EPA has set a maximum contaminant level of 0.1 mg/l for chromium. The state of Pennsylvania has set a maximum contaminant level of 0.05 mg/l for chromium.					
			EPA 200.8 rev 5.4	mg/l	
06025	Arsenic	7440-38-2	0.0063	0.0020	1
The EPA has set a maximum contaminant level of 0.01 mg/l for arsenic.					
06035	Lead	7439-92-1	0.0022	0.0010	1
The action level for lead in the lead and copper rule is 0.015 mg/l. Because health effects are possible, especially in young children, EPA guidance recommends that corrective action be taken when the action level is met or exceeded.					
			EPA 245.1 rev 3	mg/l	
00259	Mercury	7439-97-6	< 0.00020	0.00020	1
The EPA has set a maximum contaminant level of 0.002 mg/l for mercury.					
Wet Chemistry			EPA 365.1	mg/l	
00227	Total Phosphorus as P (water)	7723-14-0	0.22	0.10	1
			EPA 410.4	mg/l	
04001	Chemical Oxygen Demand	n.a.	69.1	50.0	1
			SM20 2320 B	mg/l as CaCO3	
00202	Alkalinity to pH 4.5	n.a.	220	2.0	1
00201	Alkalinity to pH 8.3	n.a.	13.5	2.0	1
			SM20 4500 H/B	Std. Units	
00200	pH	n.a.	8.9	0.010	1
pH is a measure of hydrogen ion activity. An acceptable range for pH in drinking water is 6.5 - 8.5. This parameter is not generally considered to be directly health related. In combination with solids, alkalinity and calcium levels, pH can give an indication of whether the water is corrosive to plumbing.					
			SM20 4500 NH3 D	mg/l	
06914	Ammonia-Nitrogen Distilled	7664-41-7	0.18	0.15	1
Microbiology			SM20 9223 B	/100ml	

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CAT No.	Analysis Name	CAS Number	As Received Result	As Received Limit of Quantitation	Dilution Factor
	Microbiology	SM20 9223 B	/100ml	/100ml	
08161	Tot Coli/E. coli (Quanti-tray)	n.a.	See Below		n.a.
<p>*****BACTERIOLOGICALLY CONTAMINATED****</p> <p>The water this test result represents is NOT considered bacteriologically safe to drink according to standards established by the Environmental Protection Agency (EPA). It is the presence of coliform bacteria, and not the number, that is significant. If the source of your water supply is a well, we recommend that you disinfect your well and retest the water prior to consuming it. If you need information on disinfecting your well, please contact us to receive our pamphlet, "Information and General Procedures for Testing Your Water". If the well has already been disinfected, you should contact a water treatment company or your plumber for permanent options. We recommend that you retest your well water every 6 to 12 months to verify that it continues to be bacteriologically safe.</p>					
	Total Coliform	> 200.5	/100ml		
	E. coli	< 1.0	/100ml		

General Sample Comments

PA DEP Lab Certification ID 36-00037, Expiration Date: 1/31/11

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08093	TPH by GC/FID water C8-C40	SW-846 8015B modified	1	101170030A	04/29/2010 13:56	Heather E Williams	1
07003	Extraction - DRO (Waters)	SW-846 3510C	1	101170030A	04/28/2010 09:35	Karen R Rettew	1
07049	Cadmium	EPA 200.7 rev 4.4	1	101195716003	05/03/2010 07:30	Joanne M Gates	1
01750	Calcium	EPA 200.7 rev 4.4	1	101195716003	05/03/2010 07:30	Joanne M Gates	1
07051	Chromium	EPA 200.7 rev 4.4	1	101195716003	05/03/2010 07:30	Joanne M Gates	1
06025	Arsenic	EPA 200.8 rev 5.4	1	101267050001A	05/10/2010 14:48	Choon Y Tian	1
06035	Lead	EPA 200.8 rev 5.4	1	101267050001A	05/10/2010 14:48	Choon Y Tian	1
00259	Mercury	EPA 245.1 rev 3	1	101185714002	04/29/2010 19:33	Nelli S Markaryan	1
05716	EPA 600 ICP Digest (tot rec)	EPA 200.7 rev 4.4	1	101195716003	05/02/2010 09:20	James L Mertz	1
07050	ICP/MS EPA-600 Digest	EPA 200.8 rev 5.4	1	101267050001	05/06/2010 14:02	James L Mertz	1
05714	PW/WW Hg Digest	EPA 245.1 rev 3	1	101185714002	04/29/2010 09:50	Denise K Connors	1
00227	Total Phosphorus as P (water)	EPA 365.1	1	10117109101A	04/28/2010 18:01	Joseph E McKenzie	1
08263	Total Phos as P Prep (water)	EPA 365.1	1	10117109101A	04/27/2010 12:00	Nancy J Shoop	1
04001	Chemical Oxygen Demand	EPA 410.4	1	10124400101B	05/04/2010 07:13	Susan A Engle	1
00202	Alkalinity to pH 4.5	SM20 2320 B	1	10124020201A	05/04/2010 12:25	Geraldine C Smith	1
00201	Alkalinity to pH 8.3	SM20 2320 B	1	10124020201A	05/04/2010 12:25	Geraldine C Smith	1
00200	pH	SM20 4500 H/B	1	10116020001B	04/26/2010 22:00	Luz M Groff	1

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NLNAG

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06914	Ammonia-Nitrogen Distilled	SM20 4500 NH3 D	1	10123691401A	05/04/2010 08:50	Michele L Graham	1
04219	Ammonia Distillation	SM20 4500 NH3 B	1	10123691401A	05/03/2010 07:45	Michele L Graham	1
08161	Tot Coli/E. coli (Quantitray)	SM20 9223 B	1	042610LMH	04/27/2010 20:55	Keith A Hoover	n.a.

Quality Control Summary

Client Name: NLNA

Group Number: 1191887

Reported: 05/10/10 at 07:50 PM

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank LOQ</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: 101170030A TPH by GC/FID water C8-C40	Sample number(s): 5963667 < 0.60	0.60	mg/l	86	81	60-120	6	20
Batch number: 101185714002 Mercury	Sample number(s): 5963667 < 0.00020	0.00020	mg/l	112		85-115		
Batch number: 101195716003 Cadmium	Sample number(s): 5963667 < 0.0050	0.0050	mg/l	91		85-115		
Calcium	< 0.200	0.200	mg/l	102		85-115		
Chromium	< 0.0150	0.0150	mg/l	98		85-115		
Batch number: 101267050001A Arsenic	Sample number(s): 5963667 < 0.0020	0.0020	mg/l	100		85-115		
Lead	< 0.0010	0.0010	mg/l	111		85-115		
Batch number: 10117109101A Total Phosphorus as P (water)	Sample number(s): 5963667 < 0.10	0.10	mg/l	98		90-110		
Batch number: 10116020001B pH	Sample number(s): 5963667			100		99-101		
Batch number: 10123691401A Ammonia-Nitrogen Distilled	Sample number(s): 5963667 < 0.15	0.15	mg/l	96	95	81-116	2	5
Batch number: 10124020201A Alkalinity to pH 4.5	Sample number(s): 5963667 < 2.0	2.0	mg/l as CaCO ₃	100		98-103		
Batch number: 10124400101B Chemical Oxygen Demand	Sample number(s): 5963667			100		94-110		

Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: 101185714002 Mercury	Sample number(s): 5963667 116		80-120	UNSPK: 5963667	5963667	BKG: 5963667 < 0.00020	< 0.00020	0 (1)	20
Batch number: 101195716003 Cadmium	Sample number(s): 5963667 97		83-116	UNSPK: P962699	P962699	BKG: P962699 < 0.0050	< 0.0050	0 (1)	20

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: NLNA

Group Number: 1191887

Reported: 05/10/10 at 07:50 PM

Sample Matrix Quality Control

 Unspiked (UNSPK) = the sample used in conjunction with the matrix spike
 Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS</u> <u>%REC</u>	<u>MSD</u> <u>%REC</u>	<u>MS/MSD</u> <u>Limits</u>	<u>RPD</u>	<u>RPD</u> <u>MAX</u>	<u>BKG</u> <u>Conc</u>	<u>DUP</u> <u>Conc</u>	<u>DUP</u> <u>RPD</u>	<u>Dup</u> <u>RPD</u> <u>Max</u>
Calcium	35 (2)		78-125			38.9	37.4	4	20
Chromium	97		81-120			< 0.0150	< 0.0150	0 (1)	20
Batch number: 101267050001A	Sample number(s): 5963667 UNSPK: 5963667 BKG: 5963667								
Arsenic	103		70-130			0.0063	0.0068	8 (1)	20
Lead	108		75-124			0.0022	0.0023	6 (1)	20
Batch number: 10117109101A	Sample number(s): 5963667 UNSPK: P963545 BKG: P963545								
Total Phosphorus as P (water)	92		90-110			< 0.10	< 0.10	0 (1)	3
Batch number: 10116020001B	Sample number(s): 5963667 BKG: P963560								
pH						7.7	7.6	0	1
Batch number: 10123691401A	Sample number(s): 5963667 BKG: P967815								
Ammonia-Nitrogen Distilled						33.6	33.1	2	20
Batch number: 10124020201A	Sample number(s): 5963667 UNSPK: 5963667 BKG: 5963667								
Alkalinity to pH 4.5	100		73-121			220	222	1	5
Alkalinity to pH 8.3						13.5	13.5	0	5
Batch number: 10124400101B	Sample number(s): 5963667 UNSPK: P964788 BKG: P964788								
Chemical Oxygen Demand	90		90-110			3,070	3,160	3	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TPH by GC/FID water C8-C40

Batch number: 101170030A

	Chlorobenzene	Orthoterphenyl
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5963667	76	84
Blank	79	85
LCS	76	92
LCSD	73	86
Limits:	28-152	52-131

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Lancaster Laboratories Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	BMQL	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	MPN	Most Probable Number
IU	International Units	CP Units	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	NTU	nephelometric turbidity units
C	degrees Celsius	F	degrees Fahrenheit
Cal	(diet) calories	lb.	pound(s)
meq	milliequivalents	kg	kilogram(s)
g	gram(s)	mg	milligram(s)
ug	microgram(s)	l	liter(s)
ml	milliliter(s)	ul	microliter(s)
m3	cubic meter(s)	fib >5 um/ml	fibers greater than 5 microns in length per ml
<	less than – The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
>	greater than		
ppm	parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.		

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TICs only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike amount not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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