MWH
LABORATORIES
A Division of MWH Americas, Inc.

750 Royal Oak Dr., Suite 100
Monrovia, California, 91016-3629
Tel: 626 386 1100
Fax: 626 386 1101
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Tronox LLC
PO Box 55
Henderson, NV 89009
Attention: Susan Crowley
Fax: 702-651-2310

Date of Issue
11/08/2010
Linda Geddes
MWH LABORATORIES

ACCREDITED IN ACCORDANCE WITH nelac 01114CA

Report#: 344804
Project: CWA-RCRA
Group: Weekly
Influent-Effluent long TAT

LXG: Linda Geddes
Project Manager

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Hits Reports, Comments, QC Summary, QC Report and Regulatory Forms. This report shall not be reproduced except in full, without the written approval of the laboratory.

MWH LABORATORIES

Acknowledgement of Samples Received

Tronox LLC
PO Box 55
Henderson, NV 89009
Attn: Susan Crowley
Phone: 702-651-2234

Customer Code: TRONOX
Folder #: 344804
Project: CWA-RCRA
Sample Group: Weekly Influent-Effluent long TAT
Project Manager: Linda Geddes
Phone: (626) 386-1163

The following samples were received from you on **September 28, 2010**. They have been scheduled for the tests listed below each sample. If this information is incorrect, please contact your service representative. Thank you for using MWH Laboratories.

Sample #	Sample ID	Sample Date
201009280156	Effluent	Sep 27, 2010 08:30

@ACOPEDD	@R226EDD	@R228EDD
Apparent Color	Chromium Total ICAP	Hexavalent chromium(Dissolved)
Iron Total ICAP	PH (H3=past HT not compliant)	Total Kjeldahl Nitrogen
Total phosphorus as P	Total Suspended Solids (TSS)	

201009280157	Influent	Sep 27, 2010 09:00

Apparent Color	Chromium Total ICAP	Hexavalent chromium(Dissolved)
Total Kjeldahl Nitrogen	Total phosphorus as P	

Test Description

@ACOPEDD -- Gross Alpha by Co-precipitation (Sub)

@R226EDD -- Radium 226 (Sub)

@R228EDD -- Radium 228 (Sub)

750 Royal Oaks Dr., Ste 100, Monrovia, CA 91016 Tel (626) 386-1100 Fax (626) 386-1101 http://MWHLabs.com

MONTGOMERY WATSON LABORATORIES — CHAIN OF CUSTODY RECORD

34/4804

750 Royal Oaks dr. Suite 100 Monrovia, Ca., 91016-3629
(626) 386-1100 (800) 566-5227

MWLABS USE ONLY:

LOGIN COMMENTS: _____

SAMPLES CHECKED/LOGGED IN BY: AOT/ace

SAMPLE TEMP, RECEIPT AT LAB: 3.2

BLUE ICE: FROZEN X PARTIALLY FROZEN ___ THAWED ___

TO BE COMPLETED BY SAMPLER:

COMPANY / PROJECT NAME	PROJECT JOB # / P.O.#
TRONOX	CWA-RCRA

Sampler Signature: Michele Brown
Michele Brown
Susan Crowley (702) 651-2234

Tronox LLC - Henderson Plant
PO Box 55
Henderson, NV 89009

REFER TO ATTACHED BOTTLE ORDER FOR ANALYSES ☐ (check for yes)

ANALYSES REQUIRED (mark an 'X' in all tests required for each sample line)

TIME	DATE	LOCATION	IDENTIFIER, STATE ID#	MATRIX *	GRAB	COMP	CrVI	ALPHA	FE, CR	T-P, TKN	Color	RA228EDD/RA226EDD (2 Bttls.)	CR	pH	@ALPHA	TSS						SAMPLER COMMENTS
8:30 AM	9/27/2010		EFFLUENT	RSW	X		X	X	X	X	X	X		X	X	X						
9:00	9/27/2010		INFLUENT	RSW	X		X			X	X		X									

3127

* MATRIX TYPES:

Reported by Volume:
CFW = Chlor(am)inated Finished Water
FW = Other Finished Water
RGW = Raw Ground Water
RSW = Raw Surface Water
CWW = Chlorinated Waste Water
WW = Other Waste Water
SW = Storm Water

Reported by Weight:
SO = Soil
SL = Sludge

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY:	Michele Brown	Michele Brown	Veolia Water NA for Tronox LLC - Henderson Plant	9/27/2010	12:00 PM
RECEIVED BY:		A Tomaka	MWH LABS	9/28	11:14
RELINQUISHED BY:					
RECEIVED BY:					

C-O-C# _____

MWH Laboratories, a Division of MWH Americas, Inc.
750 Royal Oaks Drive Suite 100
Monrovia, CA 91016 (626) 386-1100 FAX (626) 386-1124

Bottle Order for Tronox LLC

Group#
Date Sampled
Date Received

Linda Geddes Your MWHL Project Manager

BO #: 22394
Created By: LXG
Order Date: 09/10/2010
Bottle Orders

Sampler: please return this paper with your samples

Client Code TRONOX
Project Code CWA-RCRA Bottle Orders
Group Name Weekly Influent-Effluent long TAT
PO# / Job#

Ship By:
08/31/2010

Ship Sample Kits to
Veolia Water-Tronox LLC
Gate 1
560 West Lake Mead Pkwy
Henderson, NV 89015

Attn: Wendy Prescott
Phone:
Fax:

Send Report to
Tronox LLC
PO Box 55
Henderson, NV 89009

Attn: Susan Crowley
Phone: 702-651-2234
Fax: 702-651-2310

Billing Address
Tronox LLC
PO Box 55
Henderson, NV 89009

Attn: Susan Crowley
Phone: 702-651-2234
Fax: 702-651-2310

# of Samples	Tests	Qteline#	Bottles - Qty for each sample, type & preservative if any	UN DOT #
2	4/3		1 sterile 125mL poly Sterile filter + syringe and instructions	
1	@ALPHA		1 500ml poly 2ml 18%HNO3+125ml poly/no pres	
1	@R226EDD		1 1L poly RA_226_4ml HNO3 18%	
1	@R228EDD		1 1L poly 4ml HNO3 (18%)	
2	Apparent Color		1 500ml amber glass no preservative	
1	Chromium Total ICAP		1 250ml acid rinsed 1ml HNO3 (18%)	
1	Chromium Total ICAP, Iron Total ICAP		1 250ml acid rinsed 1ml HNO3 (18%)	
2	Hexavalent Chromium (Dissolved)		1 125ml poly 1ml NH4SO4/NH4OH buffer	
1	PH (H3=past HT not compliant)		1 125ml poly no preservative	
2	Total Kjeldahl Nitrogen, Total phosphorus as P		1 250ml poly 0.5ml H2SO4 (50%)	
1	Total Suspended Solids (TSS)		1 500ml poly TDS - no preservative	

Comments

Weekly influent effluent - long TAT tests

Use sample ID of EFFLUENT and INFLUENT

Effluent gets - alpha, 226/228, color, cr, hex chrome, Fe, PH, TKN, T-P, TSS
Influent gets - color, chormium, hex chrome, TKN, T-P

Code Status Date Shipped Via Tracking # # of Coolers Prepared By

MWH

BUILDING A BETTER WORLD

November 06, 2010

Ms. Susan Crowley
Tronox
PO Box 55
Henderson, NV 89009

Subject: Case Narrative report 344804

Sample receipt: The samples arrived at MWH Laboratories, Monrovia, CA on September 28, 2010 with proper chain of custody. All containers were received without any visible signs of tampering or breakage at proper temperature. Samples are identified on the acknowledgement, which is part of the report package, along with the chain of custody.

Case Narrative:
For the MWH Laboratories data the following issues were observed:

Other Observations:

Gross Alpha and Radium226/228 were submitted by Pace Labs. Please see their case narrative for any issues.

Sincerely,

Linda Geddes
Project Manager

750 Royal Oaks Drive
Suite 100
Monrovia, CA 91016
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FAX 626-386-1101
www.mwhlabs.com

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Laboratory Comments
Report: #344804

Tronox LLC
Susan Crowley
PO Box 55
Henderson, NV 89009

Client specific Comments

I hereby certify that all laboratory analytical data was generated by a laboratory certified by the NDEP for each constituent and media presented herein.

Signature: Linda Seddes

Group Comments

Analytical results for Alpha by Co-precipitation, Radium 226 and Radium 228 are submitted by Pace Analytical Services, Greensburg, PA

The Comments Report may be blank if there are no comments for this report.

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Laboratory
Hits Report: 344804

Tronox LLC
Susan Crowley
PO Box 55
Henderson, NV 89009

Samples Received on:
09/28/2010

Analyzed	Analyte	Sample ID	Result	Federal MCL	Units	MRL
		201009280156 Effluent				
09/28/2010 12:10	Apparent Color		15	15	ACU	3
10/29/2010 22:16	Gross Alpha by Coprecipitation		13.3	15	pCi/L	2.5
10/15/2010 5:50	Iron Total ICAP		3.3	0.3	mg/L	0.02
09/29/2010 18:49	Kjeldahl Nitrogen		5.9		mg/L	0.2
09/29/2010 13:31	PH (H3=past HT not compliant)		6.8		Units	0.1
10/15/2010 15:18	Radium 228		1.00	5	pCi/L	0.83
10/01/2010 15:07	Total phosphorus as P		0.36		mg/L	0.02
09/29/2010 15:22	Total Suspended Solids (TSS)		18		mg/L	10
		201009280157 Influent				
09/28/2010 12:11	Apparent Color		15	15	ACU	3
10/15/2010 5:55	Chromium Total ICAP		0.070		mg/L	0.01
09/28/2010 11:45	Hexavalent chromium(Dissolved)		25		ug/L	0.05
09/29/2010 18:50	Kjeldahl Nitrogen		6.5		mg/L	1
10/01/2010 15:08	Total phosphorus as P		0.062		mg/L	0.02

SUMMARY OF POSITIVE DATA ONLY

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Laboratory Data
Report: 344804

Tronox LLC
Susan Crowley
PO Box 55
Henderson, NV 89009

Samples Received on:
09/28/2010

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MDL	MRL	SQL	Dilution
Effluent (201009280156)								**Sampled on**	**09/27/2010 0830**	
	EPA 903.1 - Radium 226 (Sub)									
10/11/2010	14:12		(EPA 903.1)	Radium 226	<0.621	pCi/L		0.62	0.0000	1
10/11/2010	14:12		(EPA 903.1)	Radium 226 Minimal Detectable	0.621	pCi/L			0.0000	1
10/11/2010	14:12		(EPA 903.1)	Radium 226 Two Sigma Error	0.405	pCi/L			0.0000	1
	EPA 904.0 - Radium 228 (Sub)									
10/15/2010	15:18		(EPA 904.0)	Radium 228	1.00	pCi/L		0.83	0.0000	1
10/15/2010	15:18		(EPA 904.0)	Radium 228 Minimum Detectable	0.835	pCi/L			0.0000	1
10/15/2010	15:18		(EPA 904.0)	Radium 228 Two Sigma Error	0.448	pCi/L			0.0000	1
	SM 7110C - Gross Alpha by Co-precipitation (Sub)									
10/29/2010	22:16		(SM 7110C)	Alpha, Min Detectable Activity	2.45	pCi/L			0.0000	1
10/29/2010	22:16		(SM 7110C)	Alpha, Two Sigma Error	2.19	pCi/L			0.0000	1
10/29/2010	22:16		(SM 7110C)	Gross Alpha by Coprecipitation	13.3	pCi/L		2.5	0.0000	1
	EPA 351.2 - Total Kjeldahl Nitrogen									
09/29/2010	18:49	571292	(EPA 351.2)	Kjeldahl Nitrogen	5.9	mg/L	0.044	0.2	0.044	1
	EPA 200.7 - ICP Metals									
10/15/2010	5::50	572814	(EPA 200.7)	Chromium Total ICAP	0.0059J	mg/L	0.00044	0.01	0.0004	1
10/15/2010	5::50	572814	(EPA 200.7)	Iron Total ICAP	3.3	mg/L	0.0050	0.02	0.0050	1
	EPA 218.6 - Hexavalent chromium(Dissolved)									
09/28/2010	11:36	570854	(EPA 218.6)	Hexavalent chromium(Dissolved)	ND	ug/L	0.033	0.05	0.033	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
10/01/2010	15:07	564619	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.36	mg/L	0.0084	0.02	0.0084	1
	SM4500-HB - PH (H3=past HT not compliant)									
09/29/2010	13:31	570921	(SM4500-HB)	PH (H3=past HT not compliant)	6.8	Units	0.10	0.1	0.100	1
	SM 2540D - Total Suspended Solids (TSS)									
09/29/2010	15:22	570918	(SM 2540D)	Total Suspended Solids (TSS)	18	mg/L	4.4	10	4.4	1
	SM 2120B - Apparent Color									

Rounding on totals after summation.
(c) - indicates calculated results

Sample Quantitation Limit (SQL) = MDL * Dilution Factor

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Laboratory Data
Report: 344804

Tronox LLC
Susan Crowley
PO Box 55
Henderson, NV 89009

Samples Received on:
09/28/2010

Prepared	Analyzed	QC Ref #	Method	Analyte	Result	Units	MDL	MRL	SQL	Dilution
	09/28/2010 12:10	570876	(SM 2120B)	Apparent Color	15	ACU	3	3	3.0	1
Influent (201009280157)							**Sampled on**		**09/27/2010 0900**	
	EPA 351.2 - Total Kjeldahl Nitrogen									
	09/29/2010 18:50	571292	(EPA 351.2)	Kjeldahl Nitrogen	6.5	mg/L	0.044	1	0.22	5
	EPA 200.7 - ICP Metals									
	10/15/2010 5::55	572814	(EPA 200.7)	Chromium Total ICAP	0.070	mg/L	0.00044	0.01	0.0004	1
	EPA 218.6 - Hexavalent chromium(Dissolved)									
	09/28/2010 11:45	570854	(EPA 218.6)	Hexavalent chromium(Dissolved)	25	ug/L	0.033	0.05	0.033	1
	SM4500-PE/EPA 365.1 - Total phosphorus as P (T-P)									
	10/01/2010 15:08	564619	(SM4500-PE/EPA 365.1)	Total phosphorus as P	0.062	mg/L	0.0084	0.02	0.0084	1
	SM 2120B - Apparent Color									
	09/28/2010 12:11	570876	(SM 2120B)	Apparent Color	15	ACU	3	3	3.0	1

Rounding on totals after summation.
(c) - indicates calculated results

Sample Quantitation Limit (SQL) = MDL * Dilution Factor

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Tronox LLC

QC Ref # 564619 - Total phosphorus as P (T-P) — **Analysis Date: 10/01/2010**

201009280156	Effluent	Analyzed by: NJR
201009280157	Influent	Analyzed by: NJR

QC Ref # 570854 - Hexavalent chromium(Dissolved) — **Analysis Date: 09/28/2010**

201009280156	Effluent	Analyzed by: TLH
201009280157	Influent	Analyzed by: TLH

QC Ref # 570876 - Apparent Color — **Analysis Date: 09/28/2010**

201009280156	Effluent	Analyzed by: SAR
201009280157	Influent	Analyzed by: SAR

QC Ref # 570918 - Total Suspended Solids (TSS) — **Analysis Date: 09/29/2010**

201009280156	Effluent	Analyzed by: JRF

QC Ref # 570921 - PH (H3=past HT not compliant) — **Analysis Date: 09/29/2010**

201009280156	Effluent	Analyzed by: NEM

QC Ref # 571292 - Total Kjeldahl Nitrogen — **Analysis Date: 09/29/2010**

201009280156	Effluent	Analyzed by: NJR
201009280157	Influent	Analyzed by: NJR

QC Ref # 572814 - ICP Metals — **Analysis Date: 10/15/2010**

201009280156	Effluent	Analyzed by: NINA
201009280157	Influent	Analyzed by: NINA

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Laboratory
QC Report: 344804

Tronox LLC

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
QC Ref# 564619 - Total phosphorus as P (T-P) by SM4500-PE/EPA 365.1							**Analysis Date: 10/01/2010**		
LCS1	Total phosphorus as P		0.4	0.372	mg/L	93	(90-110)		
LCS2	Total phosphorus as P		0.4	0.373	mg/L	93	(90-110)	20	0.27
MBLK	Total phosphorus as P			<0.02	mg/L				
MRL_CHK	Total phosphorus as P		0.02	0.0182	mg/L	91	(50-150)		
MS_201009230448	Total phosphorus as P	0.13	0.4	0.534	mg/L	102	(90-110)		
MS2_201009300263	Total phosphorus as P	0.090	0.4	0.500	mg/L	103	(90-110)		
MSD_201009230448	Total phosphorus as P	0.13	0.4	0.531	mg/L	102	(90-110)	20	0.0
QC Ref# 570854 - Hexavalent chromium(Dissolved) by EPA 218.6							**Analysis Date: 09/28/2010**		
LCS1	Hexavalent chromium(Dissolved)		2.0	2.02	ug/L	101	(90-110)		
LCS2	Hexavalent chromium(Dissolved)		2.0	2.01	ug/L	100	(90-110)		
MBLK	Hexavalent chromium(Dissolved)			<0.1	ug/L				
MRL_CHK	Hexavalent chromium(Dissolved)		0.05	0.0481	ug/L	96	(50-150)		
MS_201009270154	Hexavalent chromium(Dissolved)	ND	2.0	2.03	ug/L	102	(90-110)		
MS2_201009280049	Hexavalent chromium(Dissolved)	6.7	2.0	8.75	ug/L	104	(90-110)		
MSD_201009270154	Hexavalent chromium(Dissolved)	ND	2.0	2.09	ug/L	104	(90-110)	20	1.9
QC Ref# 570876 - Apparent Color by SM 2120B							**Analysis Date: 09/28/2010**		
DUP_201009280071	Apparent Color	ND		ND	ACU		(0-20)		
DUP1_201009270185	Apparent Color	ND		ND	ACU		(0-20)		
MBLK	Apparent Color			<3	ACU				
QC Ref# 570918 - Total Suspended Solids (TSS) by SM 2540D							**Analysis Date: 09/29/2010**		
DUP_201009270041	Total Suspended Solids (TSS)	10		10.0	mg/L		(0-10)	10	0.0
DUP_201009280156	Total Suspended Solids (TSS)	18		19.0	mg/L		(0-10)	10	5.4
LCS1	Total Suspended Solids (TSS)		175	170	mg/L	97	(71-107)		
LCS2	Total Suspended Solids (TSS)		175	180	mg/L	103	(71-107)	20	5.7
MBLK	Total Suspended Solids (TSS)			<10	mg/L				
MRL_CHK	Total Suspended Solids (TSS)		10	13.0	mg/L	130	(50-150)		
QC Ref# 570921 - PH (H3=past HT not compliant) by SM4500-HB							**Analysis Date: 09/29/2010**		
DUP1_201009290014	PH (H3=past HT not compliant)	8.0		8.02	Units		(0-20)	20	0.0
DUP1_201009300370	PH (H3=past HT not compliant)	8.0		7.97	Units		(0-20)	20	0.0
LCS1	PH (H3=past HT not compliant)		6.0	5.99	Units	100	(98-102)		
LCS2	PH (H3=past HT not compliant)		6.0	6.00	Units	100	(98-102)	20	0.17
QC Ref# 571292 - Total Kjeldahl Nitrogen by EPA 351.2							**Analysis Date: 09/29/2010**		
LCS1	Kjeldahl Nitrogen		4.0	4.23	mg/L	106	(90-110)		
LCS2	Kjeldahl Nitrogen		4.0	4.24	mg/L	106	(90-110)	20	0.24

Spike recovery is already corrected for native results.
Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
(S) Indicates surrogate compound.
(I) Indicates internal standard compound.
RPD not calculated for LCS2 when different a concentration than LCS1 is used
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

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Laboratory
QC Report: 344804

Tronox LLC
(continued)

QC Type	Analyte	Native	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPDLimit (%)	RPD%
MBLK	Kjeldahl Nitrogen			<0.1	mg/L				
MRL_CHK	Kjeldahl Nitrogen		0.2	0.188	mg/L	94	(50-150)		
MS_201009230424	Kjeldahl Nitrogen	0.36	4.0	4.35	mg/L	100	(90-110)		
MSD_201009230424	Kjeldahl Nitrogen	0.36	4.0	4.4	mg/L	101	(90-110)	20	1.3
QC Ref# 572814 - ICP Metals by EPA 200.7							**Analysis Date: 10/15/2010**		
LCS1	Chromium Total ICAP		1.0	1.07	mg/L	107	(85-115)		
LCS2	Chromium Total ICAP		1.0	1.02	mg/L	102	(85-115)	20	4.8
MBLK	Chromium Total ICAP			<0.01	mg/L				
MRL_CHK	Chromium Total ICAP		0.01	0.00905	mg/L	91	(50-150)		
MS_201009300444	Chromium Total ICAP	ND	1.0	1.02	mg/L	102	(70-130)		
MS2_201009300445	Chromium Total ICAP	ND	1.0	1.04	mg/L	104	(70-130)		
MSD_201009300444	Chromium Total ICAP	ND	1.0	1.04	mg/L	104	(70-130)	20	1.9
MSD2_201009300445	Chromium Total ICAP	ND	1.0	1.05	mg/L	105	(70-130)	20	0.96
LCS1	Iron Total ICAP		5.0	5.55	mg/L	111	(85-115)		
LCS2	Iron Total ICAP		5.0	5.48	mg/L	110	(85-115)	20	1.3
MBLK	Iron Total ICAP			<0.02	mg/L				
MRL_CHK	Iron Total ICAP		0.02	0.0212	mg/L	106	(50-150)		
MS_201009300444	Iron Total ICAP	0.18	5.0	5.79	mg/L	112	(70-130)		
MS2_201009300445	Iron Total ICAP	2.4	5.0	8.33	mg/L	118	(70-130)		
MSD_201009300444	Iron Total ICAP	0.18	5.0	5.79	mg/L	112	(70-130)	20	0.0
MSD2_201009300445	Iron Total ICAP	2.4	5.0	8.42	mg/L	120	(70-130)	20	1.7

Spike recovery is already corrected for native results.
Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and Dup are advisory only, batch control is based on LCS. Criteria for duplicates are advisory only, unless otherwise specified in the method.
(S) Indicates surrogate compound.
(I) Indicates internal standard compound.
RPD not calculated for LCS2 when different a concentration than LCS1 is used
RPD not calculated for Duplicates when the result is not five times the MRL (Minimum Reporting Level)

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

November 03, 2010

Ms. Jaclyn L. Contreras
MWH Americas, Inc.
Royal Oaks Dr.
Suite 100
Monrovia, CA 910163629

RE: Project: PACE-PA 344804
Pace Project No.: 3035914

Dear Ms. Contreras:
Enclosed are the analytical results for sample(s) received by the laboratory on October 21, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jacquelyn Collins

jacquelyn.collins@pacelabs.com
Project Manager

Enclosures

cc: Mr. Aleksandar D. Tomovich, MWH Americas, Inc.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: PACE-PA 344804
Pace Project No.: 3035914

Pennsylvania Certification IDs
1638 Roseytown Road Suites 2,3&4, Greensburg, PA 15601
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/NELAC Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH 0694
Delaware Certification
Florida/NELAC Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/NELAC Certification #: E-10358
Kentucky Certification #: 90133
Louisiana/NELAC Certification #: LA080002
Louisiana/NELAC Certification #: 4086
Maine Certification #: PA0091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nevada Certification
New Hampshire/NELAC Certification #: 2976
New Jersey/NELAC Certification #: PA 051
New Mexico Certification
New York/NELAC Certification #: 10888
North Carolina Certification #: 42706
Oregon/NELAC Certification #: PA200002
Pennsylvania/NELAC Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/NELAC Certification #: T104704188-09 TX
Utah/NELAC Certification #: ANTE
Virgin Island/PADEP Certification
Virginia Certification #: 00112
Washington Certification #: C1941
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: PACE-PA 344804
Pace Project No.: 3035914

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3035914001	**201009280156**	Drinking Water	09/27/10 08:30	10/21/10 10:00

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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: PACE-PA 344804
Pace Project No.: 3035914

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3035914001	**201009280156**	SM 7110C	JC2	1	PASI-PA

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Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: PACE-PA 344804
Pace Project No.: 3035914

Method: **SM 7110C**
Description: 7110C Gross Alpha
Client: MWH Laboratories
Date: November 03, 2010

General Information:
1 sample was analyzed for SM 7110C. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, Inc.
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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: PACE-PA 344804
Pace Project No.: 3035914

Sample: 201009280156 **Lab ID: 3035914001** Collected: 09/27/10 08:30 Received: 10/21/10 10:00 Matrix: Drinking Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Gross Alpha	SM 7110C	**13.3 ± 2.19 (2.45)**	pCi/L	10/29/10 22:16	12587-46-1	

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(724)850-5600

QUALITY CONTROL DATA

Project: PACE-PA 344804
Pace Project No.: 3035914

QC Batch: RADC/6587
QC Batch Method: SM 7110C
Analysis Method: SM 7110C
Analysis Description: 7110C Gross Alpha
Associated Lab Samples: 3035914001

METHOD BLANK: 232669
Matrix: Water
Associated Lab Samples: 3035914001

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Gross Alpha	-0.431 ± 0.687 (2.16)	pCi/L	10/29/10 05:58	

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Greensburg, PA 15601
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QUALIFIERS

Project: PACE-PA 344804
Pace Project No.: 3035914

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty

(MDC) - Minimum Detectable Concentration

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

Quality Control Sample Performance Assessment

Test:	Gross Alpha
Analyst:	JMC
Date:	10/29/2010
Worklist:	6587
Matrix (DW, W, F, Solid):	DW

Method Blank Assessment

MB concentration:	-0.431
M/B Counting Uncertainty:	0.682
MB MDC:	2.157
MB Numerical Performance Indicator:	-1.24
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment

	LCS	LSCD
Count Date:	10/29/2010	10/29/2010
Spike I.D.:	08-026	08-026
Spike Concentration (pCi/mL):	30.198	30.198
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.200	0.200
Target Conc. (pCi/L, g, F):	15.099	15.099
Uncertainty (Calculated):	0.947	0.947
Result (pCi/L, g, F):	16.788	17.261
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	2.636	2.761
Numerical Performance Indicator:	1.18	1.45
Percent Recovery:	111.19%	114.32%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass

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Sample Matrix Spike Control Assessment

Sample Collection Date:	9/10/2010
Sample I.D.	3035061002
Sample MS I.D.	3035061002MS
Sample MSD I.D.	
Spike I.D.:	08-026
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	30.198
Spike Volume Used in MS (mL):	0.20
Spike Volume Used in MSD (mL):	
MS Aliquot (L, g, F):	0.050
MS Target Conc.(pCi/L, g, F):	120.793
MSD Aliquot (L, g, F):	
MSD Target Conc. (pCi/L, g, F):	
Spike uncertainty (calculated):	7.576
Sample Result:	52.280
Sample Result Counting Uncertainty (pCi/L, g, F):	3.531
Sample Matrix Spike Result:	144.882
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	15.833
Sample Matrix Spike Duplicate Result:	
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
MS Numerical Performance Indicator:	-3.086
MSD Numerical Performance Indicator:	
MS Percent Recovery:	76.66%
MSD Percent Recovery:	
MS Status vs Numerical Indicator:	N/A
MSD Status vs Numerical Indicator:	
MS Status vs Recovery:	Pass
MSD Status vs Recovery:	

Duplicate Sample Assessment

Sample I.D.:	LCS
Duplicate Sample I.D.	LSCD
Sample Result (pCi/L, g, F):	16.788
Sample Result Counting Uncertainty (pCi/L, g, F):	2.636
Sample Duplicate Result (pCi/L, g, F):	17.261
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	2.761
Are sample and/or duplicate results below MDC?	No
Duplicate Numerical Performance Indicator:	-0.243
Duplicate RPD:	2.78%
Duplicate Status vs Numerical Indicator:	N/A
Duplicate Status vs RPD:	Pass

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Matrix Spike/Matrix Spike Duplicate Sample Assessment

Sample I.D.	
Sample MS I.D.	
Sample MSD I.D.	
Sample Matrix Spike Result:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Duplicate Numerical Performance Indicator:	
MS/ MSD Duplicate RPD:	
MS/ MSD Duplicate Status vs Numerical Indicator:	
MS/ MSD Duplicate Status vs RPD:	

Comments:

Om 11/3/10

MWH Laboratories
A Division of MWH Americas, Inc.
750 Royal Oaks Drive Suite 100
Monrovia, CA 91016-3629
Ph (626) 386-1100 Fax (626) 386-1095

Ship To

1638 Roseytown Road, Suite 2
PACE Analytical Services, Inc.

Greensburg, PA 15601

724-850-5600 Fax 724-850-5601

Date 10/20/2010 **Submittal Form & Purchase Order 99-06570**

*REPORTING REQUIRMENTS: *Do Not Combine Report with any other samples submitted under different MWH project numbers!*
Report & Invoice must have the MWH Project Number **344804** Sub PO# **99-06570** and Job # **1000014**

Report all quality control data according to Method. Include dates analyzed. date extracted (if extracted) and Method reference on the report.
Results must have Complete data & QC with Approval Signature. See reverse side for List of Terms and Conditions

Reports: Jackie Contreras Sub-Contracting Administrator
EMAIL TO: mwhlabs-subcontractreports@mwhglobal.com
MWH Laboratories 750 Royal Oaks Dr. Ste. 100, Monrovia, CA 91016
Phone (626) 386-1165 Fax (626) 386-1122
Invoices to: MWH LABORATORIES
Accounts Payable PO BOX 6610, Broomfield, CO 80021

Provide in each Report the Specified State Certification # & Exp Date for requested tests + matrix.

Samples from the State of :NEVADA

2 week Rush

3035914

MWH Project #	Report Due:	Sub PO#
344804	11/04/2010	99-06570

JLS

Pace QWS WO# Sample # for ID

		Client Sample ID for reference only	Analysis Requested	Sample Date & Time	Matrix	PWS Systemcode	PWSID
EPA 900.0	22 ALPHA	201009280156 Effluent	Gross Alpha (Sub)	09/27/10 0830	Water		

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001

Relinquished by: _____ Sample Control Date 10/20/10 Time 1400 MUST HAVE NOTIFICATION IF TEMP IS GREATER THAN 6 OR LESS THAN CELSIUS

Received by: _____ Date 10/21/10 Time 1000 An Acknowledgement of Receipt is requested to attn: **Christine Lewis**

3MB

Sample Condition Upon Receipt

Pace Analytical

Client Name: MWH Project # 30359/4

Courier: [X] Fed Ex [ ] UPS [ ] USPS [ ] Client [ ] Commercial [ ] Pace Other _____

Tracking #: 4294872718

Optional
Proj. Due Date:
Proj. Name:

Custody Seal on Cooler/Box Present: [ ] yes [X] no Seals intact: [ ] yes [ ] no

Packing Material: [ ] Bubble Wrap [ ] Bubble Bags [X] None [ ] Other _____

Thermometer Used 3 5 Type of Ice: Wet Blue (None) [ ] Samples on ice, cooling process has begun

Cooler Temperature NA Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: SmB 10/21/10

Temp should be above freezing to 6°C

		Comments:
Chain of Custody Present:	[X]Yes [ ]No [ ]N/A	1.
Chain of Custody Filled Out:	[X]Yes [ ]No [ ]N/A	2.
Chain of Custody Relinquished:	[X]Yes [ ]No [ ]N/A	3.
Sampler Name & Signature on COC:	[ ]Yes [X]No [ ]N/A	4.
Samples Arrived within Hold Time:	[X]Yes [ ]No [ ]N/A	5.
Short Hold Time Analysis (<72hr):	[ ]Yes [X]No [ ]N/A	6.
Rush Turn Around Time Requested:	[X]Yes [ ]No [ ]N/A	7. 2wk
Sufficient Volume:	[X]Yes [ ]No [ ]N/A	8.
Correct Containers Used:	[X]Yes [ ]No [ ]N/A	9.
-Pace Containers Used: SmB 10/21/10	[X]Yes [X]No [ ]N/A	
Containers Intact:	[X]Yes [ ]No [ ]N/A	10.
Filtered volume received for Dissolved tests	[ ]Yes [ ]No [X]N/A	11.
Sample Labels match COC:	[X]Yes [ ]No [ ]N/A	12.
-Includes date/time/ID/Analysis Matrix: DW		
All containers needing preservation have been checked.	[X]Yes [ ]No [ ]N/A	13. 10/21/10 @ 1046
All containers needing preservation are found to be in compliance with EPA recommendation.	[ ]Yes [X]No [ ]N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	[ ]Yes [X]No	Initial when completed SmB Lot # of added preservative RF10-0282-2
Samples checked for dechlorination:	[ ]Yes [ ]No [X]N/A	14.
Headspace in VOA Vials (>6mm):	[ ]Yes [ ]No [X]N/A	15.
Trip Blank Present:	[ ]Yes [ ]No [X]N/A	16.
Trip Blank Custody Seals Present	[ ]Yes [ ]No [X]N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** 10/21/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

F-ALLC003-4 23Feb2010

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

October 19, 2010

Ms. Jaclyn L. Contreras
MWH Americas, Inc.
Royal Oaks Dr.
Suite 100
Monrovia, CA 910163629

RE: Project: PACE-PA 344804
Pace Project No.: 3034744

Dear Ms. Contreras:
Enclosed are the analytical results for sample(s) received by the laboratory on September 30, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jacquelyn Collins

jacquelyn.collins@pacelabs.com
Project Manager

Enclosures

cc: Mr. Aleksandar D. Tomovich, MWH Americas, Inc.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: PACE-PA 344804
Pace Project No.: 3034744

Pennsylvania Certification IDs
1638 Roseytown Road Suites 2,3&4, Greensburg, PA 15601
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California/NELAC Certification #: 04222CA
Colorado Certification
Connecticut Certification #: PH 0694
Delaware Certification
Florida/NELAC Certification #: E87683
Guam/PADEP Certification
Hawaii/PADEP Certification
Idaho Certification
Illinois/PADEP Certification
Indiana/PADEP Certification
Iowa Certification #: 391
Kansas/NELAC Certification #: E-10358
Kentucky Certification #: 90133
Louisiana/NELAC Certification #: LA080002
Louisiana/NELAC Certification #: 4086
Maine Certification #: PA0091
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification
Missouri Certification #: 235
Montana Certification #: Cert 0082
Nevada Certification
New Hampshire/NELAC Certification #: 2976
New Jersey/NELAC Certification #: PA 051
New Mexico Certification
New York/NELAC Certification #: 10888
North Carolina Certification #: 42706
Oregon/NELAC Certification #: PA200002
Pennsylvania/NELAC Certification #: 65-00282
Puerto Rico Certification #: PA01457
South Dakota Certification
Tennessee Certification #: TN2867
Texas/NELAC Certification #: T104704188-09 TX
Utah/NELAC Certification #: ANTE
Virgin Island/PADEP Certification
Virginia Certification #: 00112
Washington Certification #: C1941
West Virginia Certification #: 143
Wisconsin/PADEP Certification
Wyoming Certification #: 8TMS-Q

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Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: PACE-PA 344804
Pace Project No.: 3034744

Lab ID	Sample ID	Matrix	Date Collected	Date Received
3034744001	**201009280156**	Drinking Water	09/27/10 08:30	09/30/10 10:00

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Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: PACE-PA 344804
Pace Project No.: 3034744

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3034744001	**201009280156**	EPA 903.1	RMD	1	PASI-PA
		EPA 904.0	DJL	1	PASI-PA

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PROJECT NARRATIVE

Project: PACE-PA 344804
Pace Project No.: 3034744

Method: **EPA 903.1**
Description: 903.1 Radium 226
Client: MWH Laboratories
Date: October 19, 2010

General Information:
1 sample was analyzed for EPA 903.1. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: PACE-PA 344804
Pace Project No.: 3034744

Method: **EPA 904.0**
Description: 904.0 Radium 228
Client: MWH Laboratories
Date: October 19, 2010

General Information:
1 sample was analyzed for EPA 904.0. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS

Project: PACE-PA 344804
Pace Project No.: 3034744

Sample: 201009280156 **Lab ID: 3034744001** Collected: 09/27/10 08:30 Received: 09/30/10 10:00 Matrix: Drinking Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC)	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 903.1	**0.338 ± 0.405 (0.621)**	pCi/L	10/11/10 14:12	13982-63-3	
Radium-228	EPA 904.0	**1.00 ± 0.448 (0.835)**	pCi/L	10/15/10 15:18	15262-20-1	

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: PACE-PA 344804
Pace Project No.: 3034744

QC Batch: RADC/6343
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Associated Lab Samples: 3034744001

METHOD BLANK: 222762
Matrix: Water
Associated Lab Samples: 3034744001

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-226	-0.061 ± 0.266 (0.652)	pCi/L	10/11/10 13:05	

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Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL DATA

Project: PACE-PA 344804
Pace Project No.: 3034744

QC Batch: RADC/6344
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Associated Lab Samples: 3034744001

METHOD BLANK: 222763
Matrix: Water
Associated Lab Samples: 3034744001

Parameter	Act ± Unc (MDC)	Units	Analyzed	Qualifiers
Radium-228	0.252 ± 0.362 (0.771)	pCi/L	10/15/10 15:17	

Pace Analytical Services, Inc.
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: PACE-PA 344804
Pace Project No.: 3034744

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty

(MDC) - Minimum Detectable Concentration

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-PA Pace Analytical Services - Greensburg

Quality Control Sample Performance Assessment

Pace Analytical
www.pacelabs.com

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test:	Ra-226
Analyst:	RMD
Date:	10/5/2010
Worklist:	6343
Matrix:	DW

Method Blank Assessment

MB Sample ID	222762
MB concentration:	-0.061
M/B Counting Uncertainty:	0.265
MB MDC:	0.652
MB Numerical Performance Indicator:	-3.30
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment

	LCSD (Y or N)?	Y
	LCS6343	LCSD6343
Count Date:	10/11/2010	10/11/2010
Spike I.D.:	09-036	09-036
Spike Concentration (pCi/mL):	59.750	59.750
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.500	0.500
Target Conc. (pCi/L, g, F):	11.950	11.950
Uncertainty (Calculated):	0.287	0.287
Result (pCi/L, g, F):	11.802	13.955
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	1.817	2.114
Numerical Performance Indicator:	-0.16	1.84
Percent Recovery:	98.76%	116.78%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass

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Sample Matrix Spike Control Assessment

Sample Collection Date:	9/29/2010
Sample I.D.	3034832001
Sample MS I.D.	3034832001MS
Sample MSD I.D.	
Spike I.D.:	09-036
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	59.751
Spike Volume Used in MS (mL):	0.20
Spike Volume Used in MSD (mL):	
MS Aliquot (L, g, F):	0.500
MS Target Conc.(pCi/L, g, F):	23.900
MSD Aliquot (L, g, F):	
MSD Target Conc. (pCi/L, g, F):	
Spike uncertainty (calculated):	0.574
Sample Result:	0.093
Sample Result Counting Uncertainty (pCi/L, g, F):	0.182
Sample Matrix Spike Result:	20.647
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	2.424
Sample Matrix Spike Duplicate Result:	
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
MS Numerical Performance Indicator:	-2.626
MSD Numerical Performance Indicator:	
MS Percent Recovery:	86.00%
MSD Percent Recovery:	
MS Status vs Numerical Indicator:	N/A
MSD Status vs Numerical Indicator:	
MS Status vs Recovery:	Pass
MSD Status vs Recovery:	

Duplicate Sample Assessment

Sample I.D.:	LCS6343	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD6343	
Sample Result (pCi/L, g, F):	11.802	
Sample Result Counting Uncertainty (pCi/L, g, F):	1.817	
Sample Duplicate Result (pCi/L, g, F):	13.955	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	2.114	
Are sample and/or duplicate results below MDC?	NO	
Duplicate Numerical Performance Indicator:	-1.514	
Duplicate RPD:	16.72%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment

Sample I.D.	
Sample MS I.D.	
Sample MSD I.D.	
Sample Matrix Spike Result:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Duplicate Numerical Performance Indicator:	
MS/ MSD Duplicate RPD:	
MS/ MSD Duplicate Status vs Numerical Indicator:	
MS/ MSD Duplicate Status vs RPD:	

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

CMM 10/18/10

Quality Control Sample Performance Assessment

Analyst Must Manually Enter All Fields Highlighted in Yellow.

Test:	Ra-228
Analyst:	DJL
Date:	9/21/2010
Worklist:	6344
Matrix:	DW

Method Blank Assessment

MB Sample ID	222763
MB concentration:	0.252
M/B Counting Uncertainty:	0.359
MB MDC:	0.771
MB Numerical Performance Indicator:	1.37
MB Status vs Numerical Indicator:	N/A
MB Status vs. MDC:	Pass

Laboratory Control Sample Assessment

	LCSD (Y or N)?	Y
	LCS6344	LCSD6344
Count Date:	10/15/2010	10/15/2010
Spike I.D.:	09-037	09-037
Spike Concentration (pCi/mL):	78.891	78.891
Volume Used (mL):	0.10	0.10
Aliquot Volume (L, g, F):	0.800	0.800
Target Conc. (pCi/L, g, F):	9.861	9.861
Uncertainty (Calculated):	0.306	0.306
Result (pCi/L, g, F):	9.045	9.440
LCS/LCSD Counting Uncertainty (pCi/L, g, F):	0.826	0.815
Numerical Performance Indicator:	-1.82	-0.95
Percent Recovery:	91.72%	95.72%
Status vs Numerical Indicator:	N/A	N/A
Status vs Recovery:	Pass	Pass

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Sample Matrix Spike Control Assessment

Sample Collection Date:	9/29/2010
Sample I.D.	3034832001
Sample MS I.D.	3034832001MS
Sample MSD I.D.	
Spike I.D.:	09-037
MS/MSD Decay Corrected Spike Concentration (pCi/mL):	79.314
Spike Volume Used in MS (mL):	0.20
Spike Volume Used in MSD (mL):	
MS Aliquot (L, g, F):	0.800
MS Target Conc.(pCi/L, g, F):	19.828
MSD Aliquot (L, g, F):	
MSD Target Conc. (pCi/L, g, F):	
Spike uncertainty (calculated):	0.615
Sample Result:	0.435
Sample Result Counting Uncertainty (pCi/L, g, F):	0.351
Sample Matrix Spike Result:	21.456
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	1.281
Sample Matrix Spike Duplicate Result:	
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
MS Numerical Performance Indicator:	1.596
MSD Numerical Performance Indicator:	
MS Percent Recovery:	106.01%
MSD Percent Recovery:	
MS Status vs Numerical Indicator:	N/A
MSD Status vs Numerical Indicator:	
MS Status vs Recovery:	Pass
MSD Status vs Recovery:	

Duplicate Sample Assessment

Sample I.D.:	LCS6344	Enter Duplicate sample IDs if other than LCS/LCSD in the space below.
Duplicate Sample I.D.	LCSD6344	
Sample Result (pCi/L, g, F):	9.045	
Sample Result Counting Uncertainty (pCi/L, g, F):	0.826	
Sample Duplicate Result (pCi/L, g, F):	9.440	
Sample Duplicate Result Counting Uncertainty (pCi/L, g, F):	0.815	
Are sample and/or duplicate results below MDC?	NO	
Duplicate Numerical Performance Indicator:	-0.666	
Duplicate RPD:	4.27%	
Duplicate Status vs Numerical Indicator:	N/A	
Duplicate Status vs RPD:	Pass	

Matrix Spike/Matrix Spike Duplicate Sample Assessment

Sample I.D.	
Sample MS I.D.	
Sample MSD I.D.	
Sample Matrix Spike Result:	
Matrix Spike Result Counting Uncertainty (pCi/L, g, F):	
Sample Matrix Spike Duplicate Result:	
Matrix Spike Duplicate Result Counting Uncertainty (pCi/L, g, F):	
Duplicate Numerical Performance Indicator:	
MS/ MSD Duplicate RPD:	
MS/ MSD Duplicate Status vs Numerical Indicator:	
MS/ MSD Duplicate Status vs RPD:	

Evaluation of duplicate precision is not applicable if either the sample or duplicate results are below the MDC.

Comments:

DM 10/18/10

MWH Laboratories
A Division of MWH Americas, Inc.
750 Royal Oaks Drive Suite 100
Monrovia, CA 91016-3629
Ph (626) 386-1100 Fax (626) 386-1095

Date 9/29/2010

Submittal Form & Purchase Order 99-06299

*REPORTING REQUIRMENTS: *Do Not Combine Report with any other samples submitted under different MWH project numbers!*
Report & Invoice must have the MWH Project Number **344804** Sub PO# **99-06299** and Job # **1000014**

Report all quality control data according to Method. Include dates analyzed. date extracted (if extracted) and Method reference on the report.
Results must have Complete data & QC with Approval Signature. See reverse side for List of Terms and Conditions

Reports: Jackie Contreras Sub-Contracting Administrator
EMAIL TO: mwhlabs-subcontractreports@mwhglobal.com
MWH Laboratories 750 Royal Oaks Dr. Ste. 100, Monrovia, CA 91016
Phone (626) 386-1165 Fax (626) 386-1122
Invoices to: MWH LABORATORIES
Accounts Payable PO BOX 6610, Broomfield, CO 80021

Provide in each Report the Specified State Certification # & Exp Date for requested tests + matrix.

Samples from the State of: **NEVADA**

Ship To
1638 Roseytown Road, Suite 2
PACE Analytical Services, Inc.

Greensburg, PA 15601

724-850-5600 Fax 724-850-5601

MWH Project # 344804 | **Report Due:** 10/21/2010 | **Sub PO#** 99-06299

3034744

JLS	Use MWH Lab Sample # for ID	Client Sample ID for reference only	Analysis Requested	Sample Date & Time	Matrix	PWS Systemcode	PWSID
EPA 903.1 @R226EDD	201009280156	Effluent	Radium 226 (Sub)	09/27/10 0830	Water	001	
EPA 904.0 @R228EDD	201009280156	Effluent	Radium 228 (Sub)	09/27/10 0830	Water		

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Relinquished by: [signature] Sample Control Date 9/29/10 Time 1500 MUST HAVE NOTIFICATION IF TEMP IS GREATER THAN 6 OR LESS THAN CELSIUS

Received by: [signature] Date 9/30/10 Time 1000 An Acknowledgement of Receipt is requested to attn: **Christine Lewis**

SMB

Sample Condition Upon Receipt

Pace Analytical

Client Name: MWH Project # 30347744

Courier: [X] Fed Ex [ ] UPS [ ] USPS [ ] Client [ ] Commercial [ ] Pace Other _____

Tracking #: 4294267205 10

Custody Seal on Cooler/Box Present: [ ] yes [X] no Seals intact: [ ] yes [ ] no

Optional
Proj. Due Date:
Proj. Name:

Packing Material: [ ] Bubble Wrap [X] Bubble Bags [ ] None [ ] Other _____

Thermometer Used 3 5 Type of Ice: Wet Blue (None) [ ] Samples on ice, cooling process has begun

Cooler Temperature NA Biological Tissue is Frozen: Yes No

Date and Initials of person examining contents: SMB 9/30/10

Temp should be above freezing to 6°C Comments:

Chain of Custody Present:	[X]Yes	[ ]No	[ ]N/A	1.
Chain of Custody Filled Out:	[X]Yes	[ ]No	[ ]N/A	2.
Chain of Custody Relinquished:	[X]Yes	[ ]No	[ ]N/A	3.
Sampler Name & Signature on COC:	[ ]Yes	[X]No	[ ]N/A	4.
Samples Arrived within Hold Time:	[X]Yes	[ ]No	[ ]N/A	5.
Short Hold Time Analysis (<72hr):	[ ]Yes	[X]No	[ ]N/A	6.
Rush Turn Around Time Requested:	[ ]Yes	[X]No	[ ]N/A	7.
Sufficient Volume:	[X]Yes	[ ]No	[ ]N/A	8.
Correct Containers Used:	[X]Yes	[ ]No	[ ]N/A	9.
-Pace Containers Used:	[ ]Yes	[X]No	[ ]N/A	
Containers Intact:	[X]Yes	[ ]No	[ ]N/A	10.
Filtered volume received for Dissolved tests	[ ]Yes	[ ]No	[X]N/A	11.
Sample Labels match COC:	[X]Yes	[ ]No	[ ]N/A	12.
-Includes date/time/ID/Analysis Matrix: WT				
All containers needing preservation have been checked.	[X]Yes	[ ]No	[ ]N/A	13. all bottles 9/30/10 @ 1510
All containers needing preservation are found to be in compliance with EPA recommendation.	[ ]Yes	[X]No	[ ]N/A	
exceptions: VOA, coliform, TOC, O&G, WI-DRO (water)	[ ]Yes	[X]No		Initial when completed SMB Lot # of added preservative M4-94-3
Samples checked for dechlorination:	[ ]Yes	[ ]No	[X]N/A	14.
Headspace in VOA Vials (>6mm):	[ ]Yes	[ ]No	[X]N/A	15.
Trip Blank Present:	[ ]Yes	[X]No	[ ]N/A	16.
Trip Blank Custody Seals Present	[ ]Yes	[ ]No	[X]N/A	
Pace Trip Blank Lot # (if purchased): _____				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: _____ **Date:** 10/1/10

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

F-ALLC003-4 23Feb2010