

Laboratory Report

for

Tronox LLC - Henderson PO Box 55

Henderson , NV 89009

Attention: Susan Crowley Fax: (405) 302-4607

DATE OF ISSUE Jun 26 2009 MWH LABORATORIES

ADE Andy Eaton Project Manager nelac 1

Report#: 270992 Project: CLO4 PO#: Susan Crowle

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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 Comments, QC Report, QC Summary, Data Report, Hits Report, totaling 7 page[s].



June 26, 2009

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

Subject: Case Narrative report 270992

Sample receipt: The samples arrived at MWH on May 20, 2009, 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:

Nitrate was analyzed past hold time by the colorimetric method out of an unpreserved bottle due to significant interferences with the RCRA IC method. This method change was approved by NDEP.

TDS was run within hold time and then rerun past hold time due inconsistent results.

Note that for ion chromatography tests such as perchlorate, the exact analysis time is not shown on the report. Only the date of analysis appears. The time normally defaults to 00:00.

If you have any questions, do not hesitate to contact us.

Endrey Eaton

Sincerely yours,

Andrew Eaton, PhD Project Manager

> 750 Royal Oaks Drive Suite 100 Monrovia, CA 91016

TEL 626-3865-1100 FAX 626-386-1101 www.mwhiabs.com

CHAIN OF CUSTODY RECORD

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MONTGOMERY WATSON LABORATORIES	

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From: Origin ID: LASA (702) 651-2234

Susan Crowley

Tronox

560 West Lake Mead Parkway

Henderson, NV 89015



J98110901302023

SHIP TO: (626) 386-1100

BILL SENDER

Sample Receiving **MWH Labs**

750 ROYAL OAKS DR STE 100

MONROVIA, CA 91016



Delivery Address Bar Code

Ref# Invoice # PO# Dept#

Ship Date: 19MAY09 ActWgt: 50.0 LB CAD: 7219287/INET9011 Account#: S *********

TRK# 0201

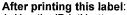
7966 2072 5820

WED - 20MAY **A2 PRIORITY OVERNIGHT**

QZ WHPA

91016 CA-US **BUR**





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MWH Laboratories

750 Royal Oaks Drive, Monrovia, CA 91016 PHONE: 626-386-1100/FAX: 626-386-1101

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Tronox LLC - Henderson

PO Box 55

Henderson, NV 89009

Attn: Susan Crowley Phone: 702-651-2234 Customer Code: KERRMCGEE-MP

PO#: Susan Crowley PO

Group#: 270992 Project#: CLO4

Proj Mgr: Andrew Eaton Phone: (626) 386-1125

The following samples were received from you on 05/20/09. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using MWH Laboratories.

Sample#	Sample	Id	Matrix	Sample Date
1	-	Tests Scheduled		
290520014	0 M-39		Water	19-may-2009 13:35:00
		CLO39056 CLO4 TDS	CR6010 NO39056	
290520014	1 FB M-39		Water	19-may-2009 00:00:00
	***************************************	CLO39056 CLO4	CR6010 NO39056	Р Т
		TDS		
		Test Acronym	Description	
Test A	cronym	Description		
CL	039056	Chlorate by IC		
	04	Perchloraté		
CR	6010	Chromium, Total, ICAP		
NO	39056	Nitrate as Nitrogen by	IC	
P		Metals sample pH	ersonvesvinsensk eksinning (kuss) - U. Nuthind (1960) v. miljá (j. 1946) (h. 1946).	
,		Metals Turbidity		
\mathtt{TD}	S	Total Dissolved Solid	(TDS)	



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:

Group Comments

TDS. Original run on 5/26 was within holding time. But the result was $8060 \, \text{mg/L}$ which had the TDS/EC ratio of 0.99. The normal range is 0.55 to 0.7. Rerun on 6/2 had result of $7760 \, \text{mg/L}$ with ratio of 0.94.

(NO3RFA) Sample was initially run by 300.0, but could not be reported dur to extreme matrix interference. The sample was analyzed by 353.2 out of hold time. No preserved bottle was available so an unpreserved was used.

(OC Ref#: 2905200140)

Test: Total Dissolved Solid (TDS) (E160.1/SM2540C)

HA - Initial analysis within holding time. Reanalysis was past holding time.



Tronox LLC - Henderson Susan Crowley PO Box 55 Henderson , NV 89009 Samples Received 20-may-2009 17:41:19

Analyzed	Sample#	Sample ID	Result	Federal MCL	UNITS	MRL
	2905200140	M-39				
06/04/09	Chlorate by	IC	137000	00	ug/l	50000
06/09/09	Chromium, T	otal, ICAP	4.7		mg/1	0.020
06/08/09	Metals dige	stion performed.	Y		Yes/No	
06/25/09		itrite as N by RFA	9.96	10	mg/1	1.0
06/09/09		_	434000)	ug/l	20000
06/02/09		lved Solid (TDS)	7760	500	mg/l	10
	2905200141	FB M-39				



Tronox LLC - Henderson Susan Crowley PO Box 55 Henderson , NV 89009 Samples Received 05/20/09

Prepared Anal	yzed QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
M-39 (29	05200140)	Sampled or	n 05/19/09 13:35				
06/0	4/09 00:00 487113	(ML/EPA 9056)	Chlorate by IC	1370000	ug/l	50000	5000
06/0	9/09 00:00 487261	(EPA 314)	Perchlorate	434000	ug/l	20000	5000
06/09/09 06/0	9/09 18:49 487360	(ML/EPA 6010B)	Chromium, Total, ICAP	4.7	mg/l	0.020	2
06/0	8/09 13:47	(EPA 200 Prep)	Metals digestion performed.	Y	Yes/No	0	1
06/2	5/09 17:17 488823	(EPA 353.2)	Nitrate + Nitrite as N by RFA	9.96	mg/l	1.0	20
06/02/09 06/0	2/09 18:35 487326	(E160.1/SM2540C)	Total Dissolved Solid (TDS)	7760 (HA)	mg/l	10	1
FB M-39	(2905200141)	Sample	d on 05/19/09 00:00				
06/0	4/09 00:00 487113	(ML/EPA 9056)	Chlorate by IC	ND	ug/l	10	1
06/0	9/09 00:00 487685	(EPA 314)	Perchlorate	ND	ug/l	4.0	1
06/09/09 06/0	9/09 18:49 487360	(ML/EPA 6010B)	Chromium, Total, ICAP	ND	mg/l	0.010	1
05/2	0/09 17:34 485620	(ML/EPA 9056)	Nitrate as Nitrogen by IC	ND	mg/l	0.10	1
05/26/09 05/2	6/09 16:10 486585	(E160.1/SM2540C)	Total Dissolved Solid (TDS)	ND	mg/l	10	1





Tronox LLC - Henderson

QC Ref #485620 - Nitrate as Nitrogen by IC Analysis Date: 05/20/2009

2905200141 FB M-39 Analyzed by: vxt

QC Ref #486585 - Total Dissolved Solid (TDS) Analysis Date: 05/26/2009

2905200141 FB M-39 Analyzed by: jrf

QC Ref #487113 - Chlorate by IC Analysis Date: 06/04/2009

2905200140 M-39 Analyzed by: ser 2905200141 FB M-39 Analyzed by: ser

QC Ref #487261 - Perchlorate Analysis Date: 06/09/2009

2905200140 M-39 Analyzed by: ser

QC Ref #487326 - Total Dissolved Solid (TDS) Analysis Date: 06/02/2009

2905200140 M-39 Analyzed by: jrf

QC Ref #487360 - Chromium, Total, ICAP Analysis Date: 06/09/2009

2905200140 M-39 Analyzed by: csk 2905200141 FB M-39 Analyzed by: csk

QC Ref #487685 - Perchlorate Analysis Date: 06/09/2009

2905200141 FB M-39 Analyzed by: ser

QC Ref #488823 - Nitrate + Nitrite as N by RFA Analysis Date: 06/25/2009

2905200140 M-39 Analyzed by: azs

Tronox LLC - Henderson

QC Ref	#485620	Nitrate	as	Nitrogen	by	IC
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QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%) RPD (%)
AASPKSMP	Spiked sample	Lab # 29	05200091	MGL		(0-0)
LCS1	Nitrate as Nitrogen by IC	2.5	2.69	MGL	107.6	(90-110)
LCS2	Nitrate as Nitrogen by IC	2.5	2.69	MGL	107.6	(90-110)
MBLK	Nitrate as Nitrogen by IC	ND	<0.10	MGL		
MRL_CHK	Nitrate as Nitrogen by IC	0.050	0.0475	MGL	95.0	(50-150)
MS	Nitrate as Nitrogen by IC	1.25	1.32	MGL	105.6	(87-121)
MSD	Nitrate as Nitrogen by IC	1.25	1.25	MGL	100.0	(87-121)
RPD_LCS	Nitrate as Nitrogen by IC	107.600	107.600	MGL	0.0	(0-20)
RPD_MS	Nitrate as Nitrogen by IC	105.600	100.000	MGL	5.4	(0-20)

QC Ref #486585 Total Dissolved Solid (TDS)

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
AASPKSMP	Spiked sample	Lab # 29	05210034	MGL		(0-0)	
DUP	Total Dissolved Solid (TDS)	436	428	MGL		(0-10)	1.9
LCS1	Total Dissolved Solid (TDS)	175	188	MGL	107.4	(80-114)	
LCS2	Total Dissolved Solid (TDS)	700	692	MGL	98.9	(80-114)	
MBLK	Total Dissolved Solid (TDS)	ND	<10	MGL			
MRL_CHK	Total Dissolved Solid (TDS)	10.0	11	MGL	110.0	(50-150)	
RPD_LCS	Total Dissolved Solid (TDS)	107.429	98.857	MGL	8.3	(0-20)	

QC Ref #487113 Chlorate by IC

QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%) RPD	(%)
AASPKSMP	Spiked sample	Lab # 20	0905200111	UGL		(0-0)	
LCS1	Chlorate by IC	200	194	UGL	97.0	(90-110)	
LCS2	Chlorate by IC	200	198	UGL	99.0	(90-110)	
MBLK	Chlorate by IC	ND	<10	UGL			
MRL_CHK	Chlorate by IC	10.000	9.81	UGL	98.1	(50-150)	
MS	Chlorate by IC	100	102	UGL	102.0	(75-125)	
MSD	Chlorate by IC	100	104	UGL	104.0	(75-125)	

Spikes which exceed Limits and Method Blanks with positive results are highlighted by <u>Underlining</u>. 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.



Tronox LLC - Henderson (continued)

RPD_LCS	Chlorate by IC	97.000	99.000	UGL	2.0	(0-20)	
RPD_MS	Chlorate by IC	102.000	104.000	UGL	1.9	(0-20)	
QC Rei	#487261 Pe	erchlorate					
QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 29	06050173	UGL		(0-0)	
LCS1	Perchlorate	25.0	25.0	UGL	100.0	(85-115)	
LCS2	Perchlorate	25.0	25.3	UGL	101.2	(85-115)	
LCS3	Perchlorate	4	4.51	UGL	112.8	(75-125)	
MBLK	Perchlorate	ND	<4.0	UGL			
MS	Perchlorate	25.0	24.8	UGL	99.2	(80-120)	
MSD	Perchlorate	25.0	24.5	UGL	98.0	(80-120)	
RPD_LCS	Perchlorate	100.000	101.200	UGL	1.2	(0-15)	
RPD_MS	Perchlorate	99.200	98.000	UGL	1.0	(0-15)	
QC Ref	#487326 To	otal Dissolve	ed Solid	(TDS)		
QC Ref	#487326 To	otal Dissolve	ed Solid	(TDS	Yield (%)	Limits (%)	RPD (%)
-				•	-	Limits (%)	RPD (%)
QC	Analyte	Spiked Lab # 29	Recovered	Units	-		RPD (%)
QC AASPKSMP	Analyte Spiked sample	Spiked Lab # 29 DS) 146	Recovered	Units MGL	-	(0-0)	
QC AASPKSMP DUP	Analyte Spiked sample Total Dissolved Solid (TD	Spiked Lab # 29 DS) 146 DS) 175	Recovered 04220209 140	Units MGL MGL	Yield (%)	(0-0)	
QC AASPKSMP DUP LCS1	Analyte Spiked sample Total Dissolved Solid (TD Total Dissolved Solid (TD	Spiked Lab # 29 DS) 146 DS) 175 DS) 700	Recovered 04220209 140 170	Units MGL MGL MGL	Yield (%)	(0-0) (0-10) (80-114)	
QC AASPKSMP DUP LCS1 LCS2	Analyte Spiked sample Total Dissolved Solid (TD Total Dissolved Solid (TD Total Dissolved Solid (TD	Spiked Lab # 29 DS) 146 DS) 175 DS) 700 DS) ND	Recovered 04220209 140 170 688	Units MGL MGL MGL MGL	Yield (%)	(0-0) (0-10) (80-114)	
QC AASPKSMP DUP LCS1 LCS2 MBLK	Analyte Spiked sample Total Dissolved Solid (TD Total Dissolved Solid (TD Total Dissolved Solid (TD Total Dissolved Solid (TD	Spiked Lab # 29 DS) 146 DS) 175 DS) 700 DS) ND DS) 10.0	Recovered 04220209 140 170 688 <10	Units MGL MGL MGL MGL MGL	Yield (%) 97.1 98.3	(0-0) (0-10) (80-114) (80-114)	
QC AASPKSMP DUP LCS1 LCS2 MBLK MRL_CHK RPD_LCS	Analyte Spiked sample Total Dissolved Solid (TD	Spiked Lab # 29 DS) 146 DS) 175 DS) 700 DS) ND DS) 10.0	Recovered 04220209 140 170 688 <10 12 98.286	Units MGL MGL MGL MGL MGL MGL MGL	Yield (%) 97.1 98.3	(0-0) (0-10) (80-114) (80-114)	
QC AASPKSMP DUP LCS1 LCS2 MBLK MRL_CHK RPD_LCS	Analyte Spiked sample Total Dissolved Solid (TD	Spiked Lab # 29 DS) 146 DS) 175 DS) 700 DS) ND DS) 10.0 DS) 97.143	Recovered 04220209 140 170 688 <10 12 98.286	Units MGL MGL MGL MGL MGL MGL MGL	Yield (%) 97.1 98.3 120.0 1.2	(0-0) (0-10) (80-114) (80-114) (50-150) (0-20)	4.2
QC AASPKSMP DUP LCS1 LCS2 MBLK MRL_CHK RPD_LCS QC Ref	Analyte Spiked sample Total Dissolved Solid (TD	Spiked Lab # 29 DS) 146 DS) 175 DS) 700 DS) ND DS) 10.0 DS) 97.143 Aromium, Tota	Recovered 04220209 140 170 688 <10 12 98.286	Units MGL	Yield (%) 97.1 98.3	(0-0) (0-10) (80-114) (80-114) (50-150) (0-20)	
QC AASPKSMP DUP LCS1 LCS2 MBLK MRL_CHK RPD_LCS QC Ref	Analyte Spiked sample Total Dissolved Solid (TD Analyte Spiked sample	Spiked Lab # 29 DS) 146 DS) 175 DS) 700 DS) ND DS) 10.0 DS) 97.143 Aromium, Total Spiked Lab # 29	Recovered 04220209 140 170 688 <10 12 98.286 Al, ICAP Recovered 05210060	Units MGL	Yield (%) 97.1 98.3 120.0 1.2	(0-0) (0-10) (80-114) (80-114) (50-150) (0-20)	4.2
QC AASPKSMP DUP LCS1 LCS2 MBLK MRL_CHK RPD_LCS QC Ref	Analyte Spiked sample Total Dissolved Solid (TD	Spiked Lab # 29 DS) 146 DS) 175 DS) 700 DS) ND DS) 10.0 DS) 97.143 Aromium, Tota	Recovered 04220209 140 170 688 <10 12 98.286	Units MGL	Yield (%) 97.1 98.3 120.0 1.2	(0-0) (0-10) (80-114) (80-114) (50-150) (0-20)	4.2

Spikes which exceed Limits and Method Blanks with positive results are highlighted by <u>Underlining</u>. 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.



Tronox LLC - Henderson (continued)

Nitrate + Nitrite as N by RFA

MSD

MBLK	Chromium, Total, ICAP	ND	<0.010	MGL			
MRL CHK	Chromium, Total, ICAP	0.010	0.0112	MGL	112.0	(50-150)	
_ MS	Chromium, Total, ICAP	1.00	0.977	MGL	97.7	(70-130)	
MS2	Chromium, Total, ICAP	1.00	0.904	MGL	90.4	(70-130)	
MSD	Chromium, Total, ICAP	1.00	1.010	MGL	101.0	(70-130)	
MSD2	Chromium, Total, ICAP	1.00	0.864	MGL	86.4	(70-130)	
QC Ref	#487685 Perchlo	rate					
QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 29	0603044	UGL		(0-0)	
LCS1	Perchlorate	25.0	23.5	UGL	94.0	(85-115)	
LCS2	Perchlorate	25.0	23.2	UGL	92.8	(85-115)	
rcs3	Perchlorate	4	3.02	UGL	75.5	(75-125)	
MBLK	Perchlorate	ND	<4.0	UGL			
MS	Perchlorate	25.0	24.4	UGL	97.6	(80-120)	
MSD	Perchlorate	25.0	24.0	UGL	96.0	(80-120)	
RPD_LCS	Perchlorate	94.000	92.800	UGL	1.3	(0-15)	
RPD_MS	Perchlorate	97.600	96.000	UGL	1.0	(0-15)	
QC Ref	#488823 Nitrate	+ Nitı	rite as	N by	RFA		
QC	Analyte	Spiked	Recovered	Units	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 200	906040267	MGL		(0-0)	
LCS1	Nitrate + Nitrite as N by RFA	1.0	0.997	MGL	99.7	(90-110)	
LCS2	Nitrate + Nitrite as N by RFA	1.0	0.994	MGL	99.4	(90-110)	
MBLK	Nitrate + Nitrite as N by RFA	ND	<0.050	MGL			
MRL_CHK	Nitrate + Nitrite as N by RFA	0.050	0.0334	MGL	66.8	(50-150)	
MS	Nitrate + Nitrite as N by RFA	1.0	0.998	MGL	99.8	(90-110)	

Spikes which exceed Limits and Method Blanks with positive results are highlighted by <u>Underlining</u>. 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.

1.0

1.00

MGL

100.0

(90-110)