

September 21, 2009

Mr. Frank Hagar  
Northgate Environmental  
1100 Quail Street  
Suite 102  
Newport Beach, CA 92660

Re: Tronox LLC Henderson #2027.001  
Service Request #R0903918

Dear Mr. Hagar:

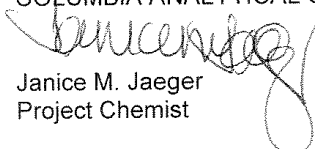
Enclosed is the analytical data report for the above referenced facility. A total of twenty samples were received by our laboratory on July 15-22, 2009.

Any problems encountered with this project are addressed in a case narrative section which is presented later in this report.

This report consists of two (2) packages: the sample data package and the sample data summary package. All data presented in this package has been reviewed prior to report submission. If you should have any questions or concerns, please contact me at (585) 288-5380.

Thank you for your continued use of our services.

Sincerely,  
COLUMBIA ANALYTICAL SERVICES

  
Janice M. Jaeger  
Project Chemist

enc.

cc: Ms. Cindy Arnold  
Northgate Environmental  
2501 Geigel Avenue  
Orlando, FL 32806

This report contains a total of 219 pages.

## CASE NARRATIVE

COMPANY: Northgate Environmental  
Tronox LLC Henderson Project #2027.001  
SERVICE REQUEST #: R0903918

Northgate samples were collected on 07/14-21/09 and received at CAS on 07/15-22/09 in good condition except 1 TOC vial for TR-8B, all 8260 vials for TB071409-GW1 and TB071609-GW1 and 1 8260 vial for EB072009-SO had significant headspace and 1 8270C amber was received broken for M-92B. Columbia Analytical Services' (CAS) reporting limit has been expressed as the Method Reporting Limit (MRL) rather than the Practical Quantitation Limit (PQL). At the client's request, all results have been reported to the Method Detection Limit (MDL) where an MDL is performed on that parameter. The MDL reported for the Alkalinity Carbonate, Alkalinity Carbonate and Alkalinity Hydroxide is the Alkalinity MDL. The software used for the 1030E calculations is Rockware AqQA. All data has been checked and verified.

### INORGANICS

Eight water samples were analyzed for a site specific list of inorganics. Please see attached data pages for method numbers.

Site specific QC was performed on M-92B and M-77B. All MS recoveries were within limits except Surfactants for M-92B and Surfactants and Cyanide for M-77B. All Blank spike recoveries were within limits. All RPD's were within limits except Surfactants for M-92B and Bromide for M-77B. All outlying QC has been flagged with an "\*\*".

Hexavalent chromium for TR-6B was not preserved at the proper pH and since the coolers were received 1 hour prior to the 24 hour holding time, the sample could not be preserved at the proper pH within holding time.

The Laboratory blanks associated with these analyses were free of contamination except the 07/24/09 and 07/30/09 blanks had low level hits for Alkalinity and Bicarbonate alkalinity, the 07/29/09, 08/03/09 blanks had a low level hit for Ammonia, the 08/05/09 blank had a low level hit for Phosphorus, the 07/16/09 blank had a low level hit for Bromide, the 07/22/09 blank had a low level hit for TOC and the 07/20/09 blank had a low level hit for Sulfate. All affected data has been flagged with a "B".

All samples were analyzed within holding except as mentioned above.

No other analytical or QC problems were encountered.

### VOLATILE ORGANICS

Eighteen water samples were analyzed for a site specific list of Volatiles by Methods 5030/8260B from SW-846.

All the initial and continuing calibration criteria were met for all analytes.

All internal standard areas were within QC limits.

All surrogate standard recoveries were within Tronox limits.

00002

TR-10B

<b>Water Type</b>	Na-SO <sub>4</sub>		
<b>Dissolved Solids</b>	1722.9 mg/kg	1720 mg/L	Measured
<b>Density</b>	0.99833 g/cm <sup>3</sup>		Calculated
<b>Conductivity</b>	2510 µmho/cm		Measured
<b>Hardness (as CaCO<sub>3</sub>)</b>			
Total	529.77 mg/kg	528.89 mg/L	Calculated
Carbonate	126.03	125.81	
Non-Carbonate	403.75	403.07	

**Primary Tests**

**Anion-Cation Balance**

Anions	19.8	
Cations	23.6	
% Difference	8.736	Not within ± 5%

**Measured TDS = Calculated TDS**

Measured	1722.877	
Calculated	1422.560	
Ratio	1.211	Not within range 1.0 to 1.2

**Measured EC = Calculated EC**

Measured	2510.000	
Calculated	1956.323	
Ratio	1.283	Not within range 0.9 to 1.1

**Secondary Tests**

**Measured EC and Ion Sums:**

Anions	0.790103	Not within preferred range (0.9-1.1)
Cations	0.941371	Within preferred range (0.9-1.1)

**Calculated TDS to EC ratio**

0.567 OK

**Measured TDS to EC ratio**

0.686 OK

**Organic Mass Balance**

**DOC ≥ Sum of Organics**

DOC unavailable

**TR-8B**

<b>Water Type</b>	Na-SO <sub>4</sub>		
<b>Dissolved Solids</b>	1202.5 mg/kg	1200 mg/L	Measured
<b>Density</b>	0.99794 g/cm <sup>3</sup>		Calculated
<b>Conductivity</b>	1890 µmho/cm		Measured
<b>Hardness (as CaCO<sub>3</sub>)</b>			
Total	388.09 mg/kg	387.29 mg/L	Calculated
Carbonate	131.99	131.72	
Non-Carbonate	256.09	255.57	

**Primary Tests**

**Anion-Cation Balance**

Anions	17.5	
Cations	17.7	
% Difference	0.548	OK

**Measured TDS = Calculated TDS**

Measured	1202.479	
Calculated	1174.108	
Ratio	1.024	OK

**Measured EC = Calculated EC**

Measured	1890.000	
Calculated	1658.578	
Ratio	1.140	Not within range 0.9 to 1.1

**Secondary Tests**

**Measured EC and Ion Sums:**

Anions	0.926556	Within preferred range (0.9-1.1)
Cations	0.936771	Within preferred range (0.9-1.1)

**Calculated TDS to EC ratio**

	0.621	OK
--	-------	----

**Measured TDS to EC ratio**

	0.636	OK
--	-------	----

**Organic Mass Balance**

**DOC ≥ Sum of Organics**

DOC unavailable

**M-92B**

<b>Water Type</b>	Na-SO <sub>4</sub>		
<b>Dissolved Solids</b>	1932.9 mg/kg	1930 mg/L	Measured
<b>Density</b>	0.99849 g/cm <sup>3</sup>		Calculated
<b>Conductivity</b>	2840 µmho/cm		Measured
<b>Hardness (as CaCO<sub>3</sub>)</b>			
Total	686.11 mg/kg	685.07 mg/L	Calculated
Carbonate	128.63	128.44	
Non-Carbonate	557.48	556.63	

**Primary Tests**

**Anion-Cation Balance**

Anions	28.4	
Cations	28.1	
% Difference	0.388	OK

**Measured TDS = Calculated TDS**

Measured	1932.923	
Calculated	1875.558	
Ratio	1.031	OK

**Measured EC = Calculated EC**

Measured	2840.000	
Calculated	2504.663	
Ratio	1.134	Not within range 0.9 to 1.1

**Secondary Tests**

**Measured EC and Ion Sums:**

Anions	0.998279	Within preferred range (0.9-1.1)
Cations	0.990563	Within preferred range (0.9-1.1)

**Calculated TDS to EC ratio** 0.660 OK

**Measured TDS to EC ratio** 0.681 OK

**Organic Mass Balance**

**DOC ≥ Sum of Organics**

DOC unavailable

**M-97B**

<b>Water Type</b>	Na-SO <sub>4</sub>		
<b>Dissolved Solids</b>	3431.3 mg/kg	3430 mg/L	Measured
<b>Density</b>	0.99961 g/cm <sup>3</sup>		Calculated
<b>Conductivity</b>	5100 µmho/cm		Measured
<b>Hardness (as CaCO<sub>3</sub>)</b>			
Total	1382.1 mg/kg	1381.6 mg/L	Calculated
Carbonate	191.99	191.92	
Non-Carbonate	1190.1	1189.7	

**Primary Tests**

**Anion-Cation Balance**

Anions	44.4	
Cations	51.8	
% Difference	7.768	Not within ± 5%

**Measured TDS = Calculated TDS**

Measured	3431.324	
Calculated	3039.420	
Ratio	1.129	OK

**Measured EC = Calculated EC**

Measured	5100.000	
Calculated	3760.387	
Ratio	1.356	Not within range 0.9 to 1.1

**Secondary Tests**

**Measured EC and Ion Sums:**

Anions	0.869676	Not within preferred range (0.9-1.1)
Cations	1.016177	Within preferred range (0.9-1.1)

**Calculated TDS to EC ratio**

0.596 OK

**Measured TDS to EC ratio**

0.673 OK

**Organic Mass Balance**

**DOC ≥ Sum of Organics**

DOC unavailable

TR-6B

<b>Water Type</b>	Na-Cl		
<b>Dissolved Solids</b>	14289 mg/kg	14400 mg/L	Measured
<b>Density</b>	1.0078 g/cm <sup>3</sup>		Calculated
<b>Conductivity</b>	16600 µmho/cm		Measured
<b>Hardness (as CaCO<sub>3</sub>)</b>			
Total	5400.6 mg/kg	5442.5 mg/L	Calculated
Carbonate	114.43	115.32	
Non-Carbonate	5286.2	5327.2	

**Primary Tests**

**Anion-Cation Balance**

Anions	237	
Cations	199	
% Difference	8.771	Not within ± 5%

**Measured TDS = Calculated TDS**

Measured	14289.250	
Calculated	12683.916	
Ratio	1.127	OK

**Measured EC = Calculated EC**

Measured	16600.000	
Calculated	13783.684	
Ratio	1.204	Not within range 0.9 to 1.1

**Secondary Tests**

**Measured EC and Ion Sums:**

Anions	1.426672	Not within preferred range (0.9-1.1)
Cations	1.196580	Not within preferred range (0.9-1.1)
<b>Calculated TDS to EC ratio</b>	0.764	Not within preferred range (0.55-0.7)
<b>Measured TDS to EC ratio</b>	0.861	Not within preferred range (0.55-0.7)

**Organic Mass Balance**

**DOC ≥ Sum of Organics**  
 DOC unavailable

**M-77B**

<b>Water Type</b>	Mg-SO <sub>4</sub>		
<b>Dissolved Solids</b>	3291.6 mg/kg	3290 mg/L	Measured
<b>Density</b>	0.99951 g/cm <sup>3</sup>		Calculated
<b>Conductivity</b>	3870 µmho/cm		Measured
<b>Hardness (as CaCO<sub>3</sub>)</b>			
Total	1480 mg/kg	1479.3 mg/L	Calculated
Carbonate	274.07	273.94	
Non-Carbonate	1206	1205.4	

**Primary Tests**

**Anion-Cation Balance**

Anions	46.8	
Cations	46.3	
% Difference	0.540	OK

**Measured TDS = Calculated TDS**

Measured	3291.615	
Calculated	3256.481	
Ratio	1.011	OK

**Measured EC = Calculated EC**

Measured	3870.000	
Calculated	3569.821	
Ratio	1.084	OK

**Secondary Tests**

**Measured EC and Ion Sums:**

Anions	1.209475	Not within preferred range (0.9-1.1)
Cations	1.196484	Not within preferred range (0.9-1.1)

**Calculated TDS to EC ratio**

0.841 Not within preferred range (0.55-0.7)

**Measured TDS to EC ratio**

0.851 Not within preferred range (0.55-0.7)

**Organic Mass Balance**

**DOC ≥ Sum of Organics**

DOC unavailable



**M-33B**

<b>Water Type</b>	Ca-SO <sub>4</sub>		
<b>Dissolved Solids</b>	4717.3 mg/kg	4720 mg/L	Measured
<b>Density</b>	1.0006 g/cm <sup>3</sup>		Calculated
<b>Conductivity</b>	5330 µmho/cm		Measured
<b>Hardness (as CaCO<sub>3</sub>)</b>			
Total	2727.6 mg/kg	2729.2 mg/L	Calculated
Carbonate	386.9	387.12	
Non-Carbonate	2340.7	2342	

**Primary Tests**

**Anion-Cation Balance**

Anions	74.6	
Cations	72	
% Difference	1.830	OK

**Measured TDS = Calculated TDS**

Measured	4717.268	
Calculated	4850.122	
Ratio	0.973	Not within range 1.0 to 1.2

**Measured EC = Calculated EC**

Measured	5330.000	
Calculated	5465.823	
Ratio	0.975	OK

**Secondary Tests**

**Measured EC and Ion Sums:**

Anions	1.400405	Not within preferred range (0.9-1.1)
Cations	1.350074	Not within preferred range (0.9-1.1)
Calculated TDS to EC ratio	0.910	Not within preferred range (0.55-0.7)
Measured TDS to EC ratio	0.885	Not within preferred range (0.55-0.7)

**Organic Mass Balance**

**DOC ≥ Sum of Organics**

DOC unavailable

Name	Unit	TR-10B	TR-8B	M-92B	M-97B	TR-6B	M-77B	M-33B
Sample ID	text	TR-10B	TR-8B	M-92B	M-97B	TR-6B	M-77B	M-33B
IMS ID	text	R0903918-001	R0903918-002	R0903918-004	R0903918-008	R0903918-013	R0903918-015	R0903918-019
calcium	µg/L	131000	86000.0	151000	268000	1.2E6	256000	651000
magnesium	µg/L	49000.0	41900.0	74800.0	173000	594000	204000	266000
potassium	µg/L	13900.0	10300.0	11800.0	16400.0	44100.0	27900.0	14200.0
sodium	µg/L	292000	223000	325000	547000	2.04E6	368000	392000
chlorate	µg/L	20200.0	1260	4450	137000	914	168000	55800.0
perchlorate	µg/L	1870	94.4	883	74800.0	235	267000	52000.0
bicarbonate	mg/L	76.7	80.3	78.3	117	70.3	167	236
carbonate	mg/L	ND	ND	ND	ND	ND	ND	ND
chloride	mg/L	126	138	202	619	7010	270	453
conductivity	µmho/cm	2510	1890	2840	5100	16600.0	3870	5330
fluoride	mg/L							
hydroxide	mg/L	ND	ND	ND	ND	ND	ND	ND
nitrate	mg/L	2.5	2.82	4.47	6.03	2.63	6.85	10.9
phosphorus	mg/L	0.014	0.013	0.019	0.017	0.045	0.133	0.031
dissolved Solids	mg/L	1720	1200	1930	3430	14400.0	3290	4720
sulfate	mg/L	707	588	1020	1080	1820	1520	2720

09/03/09