



LABORATORY DATA CONSULTANTS, INC.

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Northgate Environmental Management, Inc.
1100 Quail Street Ste. 102
New Port Beach, CA 92660
ATTN: Ms. Cindy Arnold

October 30, 2009

SUBJECT: Tronox LLC Facility, 2009 Phase B Investigation, Henderson,
Nevada, Data Validation

Dear Ms. Arnold,

Enclosed is the final validation report for the fraction listed below. This SDG was received on October 28, 2009. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 21844:

<u>SDG #</u>	<u>Fraction</u>
TRX09100150	Organic Acids

The data validation was performed under Stage 2B guidelines. The analyses were validated using the following documents, as applicable to each method:

- Standard Operating Procedures (SOP) 40, Data Review/Validation, BRC 2009
- Quality Assurance Project Plan Tronox LLC Facility, Henderson Nevada, June 2009
- NDEP Guidance, May 2006
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004

Please feel free to contact us if you have any questions.

Sincerely,

Erlinda T. Rauto
Operations Manager/Senior Chemist

EDD CHECKLIST

LDC #: 21844
 SDG #: 09100150,

Page: 1 of 1
 Reviewer: JE
 2nd Reviewer: BC

Tronox Northgate Henderson Worksheet

EDD Area	Yes	No	NA	Findings/Comments
I. Completeness				
Is there an EDD for the associated Tronox validation report?	X			
II. EDD Qualifier Population				
Were all qualifiers from the validation report populated into the EDD?	X			
III. EDD Lab Anomalies				
Were EDD anomalies identified?	X			
If yes, were they corrected or documented for the client?	X			See EDD_discrepancy_ form LDC21844_103009.doc
IV. EDD Delivery				
Was the final EDD sent to the client?	X			

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson
Data Validation Reports
LDC #21844**

Organic Acids

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Tronox LLC Facility, 2009 Phase B Investigation,
Henderson, Nevada

Collection Date: September 24 through September 30, 2009

LDC Report Date: October 29, 2009

Matrix: Water

Parameters: Organic Acids

Validation Level: Stage 2B

Laboratory: Alpha Analytical, Inc.

Sample Delivery Group (SDG): TRX09100150

Sample Identification

M-89B
TR-2B
TR-4B
M-89BMS
M-89BMSD

Introduction

This data review covers 5 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per HPLC Method for Organic Acids.

This review follows the Standard Operating Procedures (SOP) 40, Data Review/Validation (BRC 2009), the Quality Assurance Project Plan Tronox LLC Facility, Henderson, Nevada (June 2009), NDEP guidance (May 2006), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008) as there are no current guidelines for the method stated above.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- J+ Data are qualified as estimated, with a high bias likely to occur. False positives or false negatives are unlikely to have been reported.
- J- Data are qualified as estimated, with a low bias likely to occur. False positives or false negatives are unlikely to have been reported.
- J Data are qualified as estimated; it is not possible to assess the direction of the potential bias. False positives or false negatives are unlikely to have been reported.
- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.
- UU Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- B The analytical result may be a false positive totally attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.
- JB The analytical result may be biased high and partially attributable to blank contamination. This qualifier is applicable to radiochemistry analysis only.
- JK The analytical result is an estimated maximum possible concentration (EMPC).
- X The analytical result is not used for reporting because a more accurate and precise result is reported in its place.
- J-TDS The analytical result is estimated based on failure of the Total Dissolved Solids (TDS) correctness check performed in accordance with the Standard Method 1030E.
- J-CAB The analytical result is estimated based on failure of the cation-anion balance correctness check performed in accordance with Standard Method 1030E.
- J-TDS & CAB The analytical result is unreliable based on the failure of the cation-anion balance and TDS correctness check performed in accordance with standard Method 1030E.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

a. Initial Calibration

Initial calibration of compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990 .

b. Calibration Verification

Calibration verification was performed at the required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 20.0% QC limits.

The percent difference (%D) of the second source calibration standard were less than or equal to 30.0% for all compounds.

III. Blanks

Method blanks were reviewed for each matrix as applicable. No organic acids were found in the method blanks.

No field blanks were identified in this SDG.

IV. Accuracy and Precision Data

a. Surrogate Recovery

Surrogates were not required by the method.

b. Matrix Spike/(Matrix Spike) Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

c. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

V. Target Compound Identification

Raw data were not reviewed for this SDG.

VI. Project Quantitation Limit

All compounds reported below the PQL were qualified as follows:

Sample	Finding	Flag	A or P
All samples in SDG TRX09100150	All compounds reported below the PQL.	J (all detects)	A

Raw data were not reviewed for this SDG.

VII. System Performance

Raw data were not reviewed for this SDG.

VIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

IX. Field Duplicates

No field duplicates were identified in this SDG.

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Organic Acids - Data Qualification Summary - SDG TRX09100150**

SDG	Sample	Compound	Flag	A or P	Reason (Code)
TRX09100150	M-89B TR-2B TR-4B	All compounds reported below the PQL.	J (all detects)	A	Project Quantitation Limit (PQL) (sp)

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Organic Acids - Laboratory Blank Data Qualification Summary - SDG TRX09100150**

No Sample Data Qualified in this SDG

**Tronox LLC Facility, 2009 Phase B Investigation, Henderson, Nevada
Organic Acids - Field Blank Data Qualification Summary - SDG TRX09100150**

No Sample Data Qualified in this SDG

Tronox Northgate Henderson

LDC #: 21844A47

VALIDATION COMPLETENESS WORKSHEET

SDG #: TRX09100150

Stage 2B

Laboratory: Alpha Analytical, Inc.

Date: 10/29/09

Page: 1 of 1

Reviewer: JVG

2nd Reviewer: f

METHOD: HPLC Organic Acids (HPLC Method)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/24 - 30/09
IIa.	Initial calibration	A	r ²
IIb.	Calibration verification/ICV	A	CCV ≤ 20% ICV ≤ 30%
III.	Blanks	A	
IVa.	Surrogate recovery	N	Not req'd.
IVb.	Matrix spike/Matrix spike duplicates	A	
IVc.	Laboratory control samples	A	LCS
V.	Target compound identification	N	
VI.	Compound Quantitation and CRQLs	N	
VII.	System Performance	N	
VIII.	Overall assessment of data	A	
IX.	Field duplicates	N	
X.	Field blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate
 N = Not provided/applicable R = Rinsate TB = Trip blank
 SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: Water

1	M-89B	11		21		31	
2	TR-2B	12		22		32	
3	TR-4B	13		23		33	
4	M-89BMS	14		24		34	
5	M-89BMSD	15		25		35	
6	MBLK - 2279f	16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

Notes: _____

