

LABORATORY DATA CONSULTANTS, INC.

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August 11, 2008

ERM 2525 Natomas Park Drive, Suite 350

Sacramento, CA 95833

ATTN: Ms. Maria Barajas-Albalawi

SUBJECT: BRC Tronox Parcel G, Data Validation

Dear Ms. Barajas-Albalawi

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on July 11, 2008. Attachment 1 is a summary of the samples that were reviewed for each analysis.

### **LDC Project # 19097:**

SDG#	<u>Fraction</u>
F8F120137, F8F120167	Volatiles, Semivolatiles, Chlorinated Pesticides, Polychlorinated Biphenyls, Metals, Wet Chemistry, Gasoline Range Organics, Diesel Range Organics, Polynuclear Aromatic Hydrocarbons, Dioxins/Dibenzofurans

The data validation was performed under EPA Level III guidelines. The analyses were validated using the following documents, as applicable to each method:

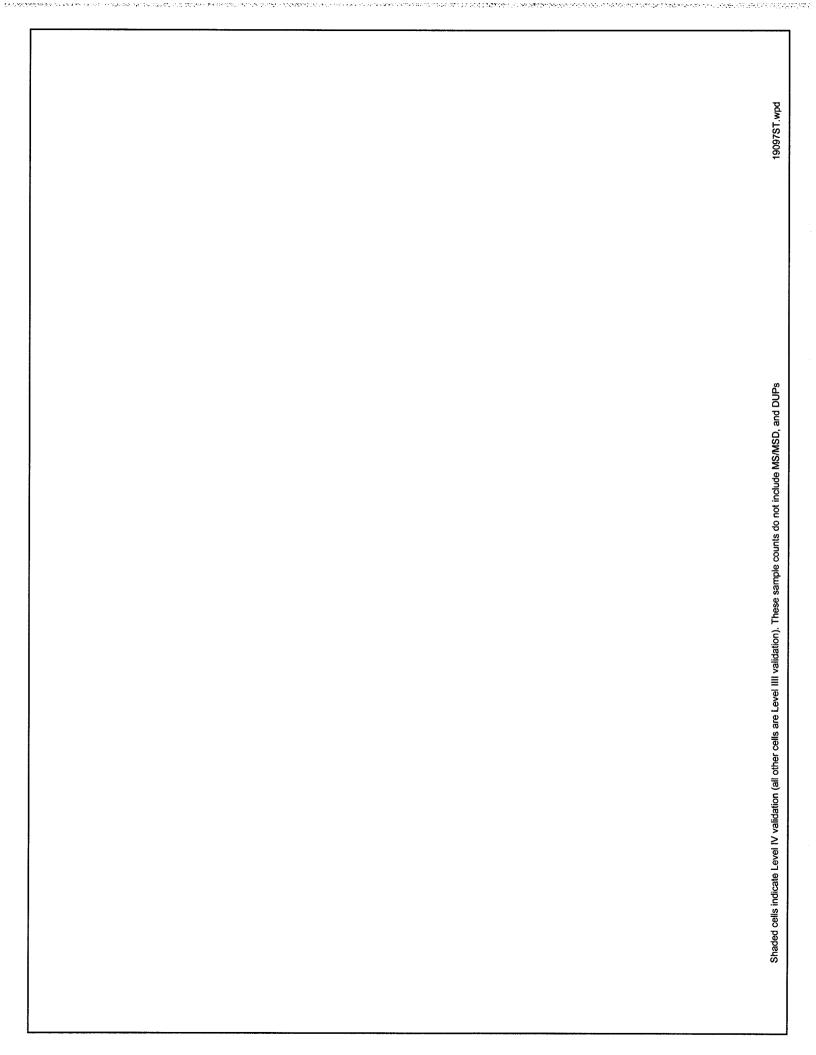
- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, October 2004
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

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

Sincerely,

Shila Carro for Erlinda T. Rauto

Operations Manager/Senior Chemist



### Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name:

**BRC Tronox Parcel G** 

**Collection Date:** 

June 11, 2008

LDC Report Date:

July 22, 2008

Matrix:

Water

Parameters:

Volatiles

Validation Level:

EPA Level III

Laboratory:

TestAmerica, Inc.

Sample Delivery Group (SDG): F8F120137

RINSATE 1

TB-3

### Introduction

This data review covers 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) 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.
- R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- 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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

### III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

In the case where %RSD was greater than 15.0%, the laboratory used a calibration curve to evaluate the compound. All coefficients of determination ( $r^2$ ) were greater than or equal to 0.990.

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

Average relative response factors (RRF) for all volatile target compounds and system performance check compounds (SPCCs) were within method and validation criteria.

### IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
6/19/08 (LCAL0317)	lodomethane	67.71684	TB-3 F8F200000-125	J+ (all detects)	A
6/20/08 (LCAL0344)	Bromomethane	30.34074	RINSATE 1 F8F200000-539	J+ (all detects)	А

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
5/28/08 (LICV9881)	lodomethane	31.67513	All samples in SDG F8F120137	J+ (all detects)	А
5/28/08 (LICV9881)	2-Hexanone	25.04476	All samples in SDG F8F120137	J- (all detects) UJ (all non-detects)	А

All of the continuing calibration RRF values were within method and validation criteria.

### V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample TB-3 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Sampling Date	Compound	Concentration	Associated Samples
TB-3	6/11/08	Acetone Chloroform	3.1 ug/L 0.12 ug/L	RINSATE 1

Sample "RINSATE 1" was identified as a rinsate. No volatile contaminants were found in this blank with the following exceptions:

Rinsate Blank ID	Sampling Date	Compound	Concentration	Associated Samples
RINSATE 1	6/11/08	Dichloromethane	3.3 ug/L	No associated samples in this SDG

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

### VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
RINSATE 1	Bromofluorobenzene	116 (66-115)	All TCL compounds	J+ (all detects)	А
F8F200000-125	Bromofluorobenzene	117 (79-115)	All TCL compounds	J+ (all detects)	А

### VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Although the MS/MSD relative percent differences (RPD) were not within QC limits for one compound, the MS/MSD percent recoveries (%R) were within QC limits and no data were qualified.

### VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Although the percent recoveries (%R) and relative percent differences (RPD) for some compounds in the LCS/D were not within QC limits, the LCS and MS/MSD percent recoveries (%R) were within QC limits and no data were qualified.

### IX. Regional Quality Assurance and Quality Control

Not applicable.

### X. Internal Standards

All internal standard areas and retention times were within QC limits.

### XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

### XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

### XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

### XIV. System Performance

Raw data were not reviewed for this SDG.

### XV. Overall Assessment of Data

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

### XVI. Field Duplicates

No field duplicates were identified in this SDG.

### BRC Tronox Parcel G Volatiles - Data Qualification Summary - SDG F8F120137

SDG	Sample	Compound	Flag	A or P	Reason
F8F120137	TB-3	lodomethane	J+ (all detects)	A	Continuing calibration (%D)
F8F120137	RINSATE 1	Bromomethane	J+ (all detects)	А	Continuing calibration (%D)
F8F120137	RINSATE 1 TB-3	lodomethane	J+ (all detects)	А	Continuing calibration (ICV %D)
F8F120137	RINSATE 1 TB-3	2-Hexanone	J- (all detects) UJ (all non-detects)	А	Continuing calibration (ICV %D)
F8F120137	RINSATE 1	All TCL compounds	J+ (all detects)	А	Surrogate recovery (%R)

BRC Tronox Parcel G Volatiles - Laboratory Blank Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

BRC Tronox Parcel G Volatiles - Field Blank Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

•	19097A1 <b>VALIDATIOI</b> F8F120137		PLETENESS WORKSHEET  Level III  Page:
abora	ory: Test America		Reviewer: 7 2nd Reviewer: 0
ETH	DD: GC/MS Volatiles (EPA SW 846 Meth	nod 8260E	<del></del>
	mples listed below were reviewed for ear d validation findings worksheets.	ch of the f	following validation areas. Validation findings are noted in
	Validation Area		Comments
I.	Technical holding times	Α	Sampling dates: 6/1//08
II.	GC/MS Instrument performance check	A	'
III.	Initial calibration	Α	% PSD, 12 20.990
IV.	Continuing calibration/ICV	SW	
V.	Blanks	A	
VI.	Surrogate spikes	رىسى	
VII.	Matrix spike/Matrix spike duplicates	حىرب	Rinsate - 2
VIII.	Laboratory control samples	SW	Lesip
IX.	Regional Quality Assurance and Quality Control	N	
Χ.	Internal standards	А	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	Δ	
XVI.	Field duplicates	A	W
XVII.	Field blanks	SW	R=1 TB=3
lote:	A = Acceptable N = Not provided/applicable R = Rir	lo compound	ds detected D = Duplicate TB = Trip blank

Wall		
1 / RINSATE 1 , 11	21	31
2 2 TB-3 12	22	32
3   F8 F200000-539 13 / 81	72539 23 6/20	33
42 F8F200000-15 142 81	72125 24 6/19	34
3   F8 F20000-33 / 13 / 8 / 42 F8 F200000-15 142 8 / 5 3 F8 F200000-36 / 153 8 /	7236/ 25 6/19	35
6 16	26	36
7 17	27	37
8 18	28	38
9 19	29	39
10 20	30	40

Les comes LDC # 19097A / SDG#:

### VALIDATION FINDINGS WORKSHEET Continuing Calibration

2nd Reviewer:\_ Page: Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

N/A ¥ ¥ ¥

Aegase see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ? Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

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Qualifications	1+/A det	1-/42/4	/			1+/Adet				1+/A det										
Associated Samples	+//+	F8F20000-537,	P8F20004 1x			F8F20000014)	8			FXF200000-539										
Finding RRF (Limit: >0.05)																				
Finding %D (Limit: <25.0%)	31.67513	25.04476				L3-111684				20.3407Y										
Compound	Iodome thank	4				To olome thane				B										
Standard ID	L I e 1988					LCA L0317				1eg10344										
# Date	80/x1/s	•				30/61/9			•	2/20/08										
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Field Blanks

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Reviewer:\_\_ 2nd Reviewer:\_\_

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y M N/A Were target compound blanks: 49/L

Blank units: 44/L Associated sample units: 49/L

Field blank type:/(circle one) Field Blank / Rinsate / Trip Blank / Other: N X X

Were field blanks identified in this SDG?

Q

Associated Samples:

Compound	Blank ID /	Blank ID				Sample Identification	ıtification			
A TANDAR STORY OF THE STORY	691177									
Dichloromethane Methytene Chloride	3.3									
Acetone										
Chloroform										
CRQL										
Blank units: ピネル Associated sample units: ペタレー Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: TB	ociated samp 9) Field Blank	ile units: "A / Rinsate / Trip	// 5 Blank / Other:	7.8	Associa	Associated Samples:	••	) ( #	1(ND)	

Sample identification Associated Samples: eld blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other. Blank ID Blank ID 2 0.12 · m Methylene chloride Acetone

Chloroform

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 190974 /

### VALIDATION FINDINGS WORKSHEET Surrogate Spikes

ţ Page: Reviewer: 2nd Reviewer:\_

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Were all surrogate %R within QC limits?

If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

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Qualifications	J*/A da	J+/A det															
nits)	( 66-115)	(211-64)	( )		( )	( )	( )	( )	( )	( )	( )	<u> </u>	( )	( )	(	( )	(
%Recovery (Limits)	1/6	1.17															
Surrogate	BFB	7															
Sample ID		F8F20000-125															
Date																	
*																	

QC Limits (Soil)	81-117	74-121	80-120	80-120
8	SMC1 (TOL) = Toluene-d8	SMC2 (BFB) = Bromofluorobenzene	SMC3 (DCE) = 1,2-Dichloroethane-d4	SMC4 (DFM) = Dibromofluoromethane

18240K1 # 307 SDG #:

### VALIDATION FINDINGS WORKSHEET Matrix Spike/Matrix Spike Duplicates

, o Page: Reviewer: 2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y/N N/A

Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

Was a MS/MSD analyzed every 20 samples of each matrix? Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

		Z.	COM			
	Compound	%R (Limits)	%R (Limits)	RPD (Limits)	Associated Samples	Qualifications
Rinsate-2011/11	Iodomethane	( )	)	) 22 ( 20	) Rusate 2	no great MS/D,1
		( )	Ú	)		1
		( )	)	)		
		( )	<u> </u>	)		
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		( )		)		-
		( )	)	)		
		( )	)	)		
		( )	)	) (	)	
Compound	ρι	QC Lim	Limits (Soll)	RPD (Soil)	QC Limits (Water)	RPD (W#(e))
1,1-Dichloroethene		. 88.	59.172%	< 22%	61-145%	%\$₽ <b>&gt;</b>
			126	< 24%	71-120%	% \$ ₹
			700	> 21%	76:127%	7,54
				7¢\$€ \$	1, v2, r3,	
					37.54.17	200

SDG #: 1-10-71 M

### VALIDATION FINDINGS WORNSHEET Laboratory Control Samples (LCS)

rage: \_\_\_or\_\_\_ Reviewer: 2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

N/A

Was a LCS required? Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

		2				<del></del>		<del></del> -	5		<del></del> -		<del></del>					T	— <del>т</del>	- 1	— <sub>7</sub>	<del></del>	<del></del> T	<del>-</del>
Qualifications	no ouallesin	10 aug 1 MS/Pin	-						no 044 145,	7				٠										
Associated Samples	F8 F200000-125	2							F8 F20000-539,	/														
RPD (Limits)	112 ( 20 )	( )	( )	( )	( )	( )	( )	( )	77 (20)	( 02 ) 78	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	)	( )		( )
LCSD %R (Limits)	( )	(OHI-Sh ) [8]	( )	( )	( )	( )	( )	(	(0h/-kh) L91	(O)/-Sh ) 751	( )	( )	( )	( )	· ·	( )	( )	( )	( )	( )		( )	( )	
LCS %R (Limits)	( ahl-eh ) ebz	(OH-Sh) 991	( )	( )	( )	( )	( )	(		```	( )			( )			( )	( )	)	)	( )	)	( )	( )
Compound	7	adomethand 166				·			<u>/</u>	TodomHank														
TCS/TCSD ID	9/201-2012118	•							1/207-68 SEL18															
Date																								
*							<u> </u>		<u> </u>				<u> </u>	<u> </u>		<u></u>			L	<u> </u>	<u></u>	<u></u>		<u></u>

### Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name:

BRC Tronox Parcel G

**Collection Date:** 

June 11, 2008

LDC Report Date:

July 23, 2008

Matrix:

Water

Parameters:

Semivolatiles

Validation Level:

EPA Level III

Laboratory:

TestAmerica, Inc.

Sample Delivery Group (SDG): F8F120137

Sample Identification

**RINSATE 1** 

**RINSATE 1MS** 

**RINSATE 1MSD** 

### Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) 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.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- 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. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

### III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

In the case where %RSD was greater than 15.0%, the laboratory used a calibration curve to evaluate the compound. All coefficients of determination ( $r^2$ ) were greater than or equal to 0.990.

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

Average relative response factors (RRF) for all semivolatile target compounds and system performance check compounds (SPCCs) were greater than or equal to 0.05 as required with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
6/18/08	Phthalic acid	0.01422 (≥0.05)	All samples in SDG F8F120137	J (all detects) UJ (all non-detects)	Α
	n-(Hydroxymethyl)phthalimide	0.04408 (≥0.05)		J (all detects) UJ (all non-detects)	

### IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
6/19/08	Phthalic acid	25.06818	RINSATE 1 RINSATE 1MS RINSATE 1MSD	J- (all detects) UJ (all non-detects)	A

The percent difference (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

All of the continuing calibration RRF values were within method and validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
6/18/08	Phthalic acid n-(Hydroxymethyl)phthalimide	0.01330 (≥0.05) 0.04331 (≥0.05)	F8F130000-441	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	А
6/19/08	Phthalic acid n-(Hydroxymethyl)phthalimide	0.01066 (≥0.05) 0.04523 (≥0.05)	RINSATE 1 RINSATE 1MS RINSATE 1MSD	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	А

### V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

Sample "RINSATE 1" was identified as a rinsate. No semivolatile contaminants were found in this blank.

### VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

### VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Although the MS/MSD percent recoveries (%R) and relative percent differences (RPD) were not within QC limits for some compounds, the MS/MSD and LCS percent recoveries (%R) were within QC limits and no data were qualified.

### VIII. Laboratory Control Samples (LCS)

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

### IX. Regional Quality Assurance and Quality Control

Not applicable.

### X. Internal Standards

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
RINSATE 1	Perylene-d12	243167 (281395-1125580)	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J (all detects) UJ (all non-detects)	A

### XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

### XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

### XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

### XIV. System Performance

Raw data were not reviewed for this SDG.

### XV. Overall Assessment of Data

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

### XVI. Field Duplicates

No field duplicates were identified in this SDG.

### BRC Tronox Parcel G Semivolatiles - Data Qualification Summary - SDG F8F120137

SDG	Sample	Compound	Flag	A or P	Reason
F8F120137	RINSATE 1	Phthalic acid n-(Hydroxymethyl)phthalimide	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Initial calibration (RRF)
F8F120137	RINSATE 1	Phthalic acid	J- (all detects) UJ (all non-detects)	А	Continuing calibration (%D)
F8F120137	RINSATE 1	Phthalic acid n-(Hydroxymethyl)phthalimide	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	А	Continuing calibration (RRF)
F8F120137	RINSATE 1	Di-n-octylphthalate Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene Benzo(g,h,i)perylene	J (all detects) UJ (all non-detects)	A	Internal standards (area)

BRC Tronox Parcel G Semivolatiles - Laboratory Blank Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

BRC Tronox Parcel G Semivolatiles - Field Blank Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

LDC #: 19097A2	VALIDATION COMPLETENESS WORKSHEET
SDG #: F8F120137	Level III
Laboratory: Test America	

Date: 1/w/08

Page: 6f/
Reviewer: 7

2nd Reviewer: 7

METHOD: GC/MS Semivolatiles (EPA SW 846 Method 8270C)

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
l.	Technical holding times	Δ	Sampling dates: 6/11/0 ¥
11.	GC/MS Instrument performance check	A	(
≡.	Initial calibration	رسۍ	% RSD, (2 20.990)
IV.	Continuing calibration/ICV	SW	1CV EXT
V.	Blanks	Δ	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	ડ W	
VIII.	Laboratory control samples	Α	LC>
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	SW	
XI.	Target compound identification	N	
XII.	Compound quantitation/CRQLs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	ND	R = 1

Note:

A = Acceptable

N = Not provided/applicable

SW = See worksheet

ND = No compounds detected

R = Rinsate

FB = Field blank

D = Duplicate

TB = Trip blank

EB = Equipment blank

Validated Samples:

Water

	Wall						
1	RINSATE 1	11	F8F130000-44/	21	8165441	31	
2	RINSATE 1MS	12		22		32	
3	RINSATE 1MSD	13		23		33	
4		14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

# VALIDATION FINDINGS WORKSHEET

# METHOD: GC/MS BNA (EPA SW 846 Method 8270C)

PRY

A. Phenol**	P. Bis(2-chloroethoxy)methane	EE. 2,6-Dinitrotoluene	TT. Pentachlorophenol**	III. Benzo(a)pyrene**
B. Bis (2-chloroethyl) ether	Q. 2,4-Dichlorophenol**	FF. 3-Nitroaniline	UU. Phenanthrene	JJJ. Indeno(1,2,3-cd)pyrene
C. 2-Chlorophenol	R. 1,2,4-Trichlorobenzene	GG. Acenaphthene**	VV. Anthracene	KKK. Dibenz(a,h)anthracene
D. 1,3-Dichlorobenzene	S. Naphthalene	HH. 2,4-Dinitrophenol*	WW. Carbazole	LLL. Benzo(g,h,i)perylene
E. 1,4-Dichlorobenzene**	T. 4-Chloroaniline	II. 4-Nitrophenol*	XX. Di-n-butylphthalate	MMM. Bis(2-Chloroisopropyl)ether
F. 1,2-Dichlorobenzene	U. Hexachlorobutadiene**	JJ. Dibenzofuran	YY. Fluoranthene**	NNN. Aniline
G. 2-Methylphenol	V. 4-Chloro-3-methylphenol**	KK. 2,4-Dinitrotoluene	ZZ. Pyrene	OOO. N-Nitrosodimethylamine
H. 2,2'-Oxybis(1-chloropropane)	W. 2-Methylnaphthalene	LL. Diethylphthalate	AAA. Butylbenzylphthalate	PPP. Benzoic Acid
I. 4-Methylphenol	X. Hexachlorocyclopentadiene*	MM. 4-Chlorophenyl-phenyl ether	BBB. 3,3'-Dichlorobenzidine	QQQ. Benzyl alcohol
J. N-Nitroso-di-n-propylamine*	Y. 2,4,6-Trichlorophenol**	NN. Fluorene	CCC. Benzo(a)anthracene	RRR. Pyridine
K. Hexachloroethane	Z. 2,4,5-Trichlorophenol	OO. 4-Nitroaniline	DDD. Chrysene	SSS. Benzidine
L. Nitrobenzene	AA. 2-Chloronaphthalene	PP. 4,6-Dinitro-2-methylphenol	EEE. Bis(2-ethylhexyl)phthalate	111.
M. Isophorone	BB. 2-Nitroaniline	QQ. N-Nitrosodiphenylamine (1)**	FFF. Di-n-octylphthalate**	ກດດ
N. 2-Nitrophenoi**	CC. Dimethylphthalate	RR. 4-Bromophenyl-phenylether	GGG. Benzo(b)fluoranthene	WW.
O. 2,4-Dimethylphenol	DD. Acenaphthylene	SS. Hexachlorobenzene	HHH. Benzo(k)fluoranthene	www.

Notes:\* = System performance check compound (SPCC) for RRF; \*\* = Calibration check compound (CCC) for %RSD.

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SDG #:

## **VALIDATION FINDINGS WORKSHEET**

2nd Reviewer:\_\_ Reviewer:

Initial Calibration

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A". METHODYGC/MS BNA (EPA SW 846 Method 8270) N/N N/A

Did the laboratory conduct an acceptable 5 point calibration prior to sample analysis?

Were percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?

N/A

Was a curve fit used for evaluation? If yes, what was the acceptance criteria used for evaluation?

Were all %RSDs and RRFs within the validation criteria of ≤30 %RSD and ≥0.05 RRF? Did the initial calibration meet the acceptance criteria? N/A/N/A /N/A

Qualifications	1/43/18	7																
Associated Samples	A11+81K	7															_	
Finding RRF (Limit: >0.05)	7.5670 7	19160:0	gohho o											•		•		
Finding %RSD (Limit: <30.0%)		,													•	•		
Compound	Phthalic Acid	M-CAY drosymethy	phthalimide)															
Standard ID	J368187EC																	
Date	80/81/0																	
*																		

1409742 LDC#: SDG #:

VALIDATION FINDINGS WORKSHEET

Continuing Calibration

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Was a continuing calibration standard analyzed at least once every 12 hours of sample analysis for each instrument? Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ? Were all %D and RRFs within the validation criteria of ≤25 %D and ≥0.05 RRF ?

Reviewer: 2nd Reviewer:

<del></del>	-,-		_			 <del></del>		-,,			 		 		 		 			
	Qualifications	2/40/4							, 7	3-143/4	,									
Accordated Camples	Section Campies	18F13000-44/						A11 except B1/K	7	3										
Finding RRF (Limit: >0.05)		0.01330	0.0433/					0.01066	0.04523											
Finding %D (Limit: <25.0%)			/							2/8 30 . 8 /0										
Compound	Mithall's Asis	السالية المال	N- ( Andro & ymc Hy)	phthalimide	ſ					Phthalic Hab/	-									
Standard ID								JCA L 5229												
Date	80/8//2						1	80/61/9												
*									$\int$	V		$\int$								

190 9742 Cons LDC #:\_ SDG #:

### Matrix Spike/Matrix Spike Duplicates VALIDATION FINDINGS WORKSHEET

Page: 2nd Reviewer: Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

| NA | N/A | Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an

Y N N/A

associated MS/MSD. Soil / Water.

Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits? Was a MS/MSD analyzed every 20 samples of each matrix?

															<u></u>		
Qualifications	no qual Milloin	*	1	1 10 grad 1051"	1 1	À									-		
Associated Samples	- / #			/_		<i>\frac{1}{2}</i>											
RPD (Limits)	1 ( 20 )	1 1 2	31 ( 1 )	`	(		( )	( )	(	( )		( )	( )	( )	( )	( )	
MSD %R (Umits)	( )	( )	( )	E01-12, 801	(	100 (27-99)	( )	( )	•	( )	( )	( )	( )	( )	( )		)
MS %R (Lmits)		· )	( )	(801-18) 011	(601-60) 911	102 (27-99)	( )	(	( )	( )	( )	( )	( )	( )	( )	( )	(
Compound	dd	нн	888	666	HHH	ノフエ											
DI DEW/WED ID	243																
Date																	
*																	

		QC Limits	RPD	QC Limits	RPD			QC Limits	RPD	QC Limits	RPD
	Compound	(Soil)	(Soil)	(Water)	(Water)		Compound	(Soil)	(Soil)	(Water)	(Water)
Ä	Phenol	26-90%	≥ 35%	12-110%	<u>&lt;</u> 42%	GG.	Acenaphthene	31-137%	≥ 19%	46-118%	≥ 31%
ΰ	2-Chlorophenol	25-102%	%0g <del>&gt;</del>	27-123%	≥ 40%	≓	4-Nitrophenol	11-114%	< 50%	10-80%	%05 ≥
шi	1,4-Dichlorobenzene	28-104%	< 27%	. 36-97%	≥ 28%	축	2,4-Dinitrotoluene	28-89%	< 47%	24-96%	≥ 38%
ار.	N-Nitroso-di-n-propylamine	41-126%	%8€ ⋝	41-116%	×38%	Ë	Pentachlorophenol	17-109%	≤ 47%	9-103%	≥ 50%
œ.	1,2,4-Trichlorobenzene	38-107%	%62 ≥	39-98%	≥ 28%	72.	Pyrene	35-142%	~36% ≥	26-127%	≥ 31%
۷.	4-Chloro-3-methylphenol	26-103%	%& ⋝	23-97%	42%						

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*	*
LDC	SDG

### VALIDATION FINDINGS WORKSHEET Internal Standards

Reviewer:

Page:

2nd Reviewer:

METHOD: GC/MS BNA (EPA SW 846 Method 8270)

Y)N N/A

Were all internal standard area counts within -50 to +100 of the associated calibration standard? Plegse see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Were the retention times of the internal standards within +/- 30 seconds of the retention times of the associated calibration standard?

*	Date	Sample ID	Internal Standard	Area (Limits)	RT (Limits)	Qualifications
		/	gRY	243/1-56 18c) L7/8/2	( 08	J/W/4
			,			al AL
			-			
					-	

\* QC limits are advisory

IS1 (DCB) = 1,4-Dichlorobenzene-d4 IS2 (NPT) = Naphthalene-d8 IS3 (ANT) = Acenaphthene-d10

IS4 (PHN) = Phenanthrene-d10 IS5 (CRY) = Chrysene-d12 IS6 (PRY) = Perylene-d12

### Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name:

BRC Tronox Parcel G

**Collection Date:** 

June 11, 2008

LDC Report Date:

August 11, 2008

Matrix:

Water

Parameters:

Chlorinated Pesticides

Validation Level:

**EPA Level III** 

Laboratory:

TestAmerica, Inc.

Sample Delivery Group (SDG): F8F120137

Sample Identification

RINSATE 1 RINSATE 1MS RINSATE 1MSD

### Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8081A for Chlorinated Pesticides.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) 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 XIV.

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.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- 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. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

### III. Initial Calibration

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

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

### IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

The individual 4,4'-DDT and Endrin breakdowns (%BD) were less than or equal to 15.0%.

### V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide contaminants were found in the method blanks.

Sample "RINSATE 1" was identified as a rinsate. No chlorinated pesticide contaminants were found in this blank.

### VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
F8F170000-189	Tetrachloro-m-xylene	58 (72-135)	All TCL compounds	J- (all detects) UJ (all non-detects)	Р

### VII. 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.

### VIII. Laboratory Control Samples (LCS)

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

### IX. Regional Quality Assurance and Quality Control

Not applicable.

### X. Pesticide Cleanup Checks

### a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

### b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

### XI. Target Compound Identification

Raw data were not reviewed for this SDG.

### XII. Compound Quantitation and Reported CRQLs

Raw data were not reviewed for this SDG.

### XIII. Overall Assessment of Data

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

### XIV. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel G Chlorinated Pesticides - Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

BRC Tronox Parcel G Chlorinated Pesticides - Laboratory Blank Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

BRC Tronox Parcel G Chlorinated Pesticides - Field Blank Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

LDC #: 19097A3a	VALIDATION COMPLETENESS WORKSHEET
SDG #: F8F120137	Level III
Laboratory: Test America	

Reviewer: 2nd Reviewer:

METHOD: GC Chlorinated Pesticides (EPA SW 846 Method 8081A)

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
l.	Technical holding times	4	Sampling dates: 4/11/0 ¥
II.	GC/ECD Instrument Performance Check	Δ	
111.	Initial calibration	Δ	
IV.	Continuing calibration/ICV	SW	1CV = 15
V.	Blanks	Δ	
VI.	Surrogate spikes	5 <b>N</b>	
VII.	Matrix spike/Matrix spike duplicates	Δ	
VIII.	Laboratory control samples	A	LCS
IX.	Regional quality assurance and quality control	N	
Xa.	Florisil cartridge check	N	
Xb.	GPC Calibration	N	
XI.	Target compound identification	N	
XII.	Compound quantitation and reported CRQLs	N	
XIII.	Overall assessment of data	Δ	
XIV.	Field duplicates	N	
XV.	Field blanks	ND	R= 1

Note:

A = Acceptable N = Not provided/applicable

SW = See worksheet

ND = No compounds detected

R = Rinsate

FB = Field blank

D = Duplicate

TB = Trip blank

EB = Equipment blank

Validated Samples:

	water						
1	RINSATE 1	11	F8F170000-189	21	8/69/89	31	
2	RINSATE 1MS	12		22		32	
3	RINSATE 1MSD	13		23		33	
4		14		24	W	34	
5		15		25	waren	35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

# VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

		GG.			r E							KK.					KK			NN.
	V Asset - 1	1. Arogior-1242		Z. Aroclor-1248	4. Arocior-1248		A. Arocior-1254		BB. Aroclor-1260		200 000	CC. DB 608		DD. DB 1701			ij		T. L.	•
	4. Endrin ketone		R. Endrin sidehvae			S. alpha-Chlordane		T. gamma-Chiordane			U. Toxaphene		V. Aroclos. 1016			W. Aroclor-1221		×	A. Auctior-1232	
I. Dieldrin			J. 4,4".DDE		K. Endrin		fordcessifer :			M. 4,4'-DDD			N. Endosulfan sulfate		0. 4,4'-DDT			P. Methoxychlor		
A. alpha-BHC		B. beta-BHC		C. delta. Du?			D. gamma-BHC		E. Hentachlor			F. Aldrin			G. neptachlor epoxide		H. Endoenien			

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Notes:

LDC #: 19097A SDG #: 10 Cm

### VALIDATION FINDINDS WORKSHEET Surrogate Recovery

Page: Reviewer:\_\_ 2nd Reviewer:

METHOD: //Gc \_\_ HPLC
Are surrogates required by the method? Yes \_\_\_ or No \_\_\_.
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Were surrogates spiked into all samples and blanks?
Did all surrogate recoveries (%R) meet the QC limits?

	Sample ID	<b>ီ</b> ပိ	Detector/ Column	Surrogate Compound		%R (Limits)				Qualifications	
	681-000011184	hot	notspecker	TCMX	$\vdash$	es es		72-135)	d/ (n/-1	0	
_			, ,			)		)	1		
								)			
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					$\sqcup$	)		) (			
-					$\dashv$			(			
						)		)			
					$\dashv$			)			
					$\dashv$			(			
(1)					$\dashv$	)		(			
	Surrogate Compound		Surrogate	Surrogate Compound		Surrogate Compound		Surrogate Compound	pun		
	Chlorobenzene (CBZ)	ပ		Octacosane	Σ	Benzo(e)Pyrene	S	1-Chloro-3-Nitrobenzene	tene Y	Tetrachloro-m- xylene	ane
	4-Bromofluorobenzene (BFB)	I		Ortho-Terphenyl	z	Terphenyl-D14	⊢	3,4-Dinitrotoluene			
	a,a,a-Trifluorotoluene	-	Fluorobe	Fluorobenzene (FBZ)	0	Decachlorobiphenyl (DCB)	)	Tripentyltin			
_	Bromochlorobenene	1	n-Tria	n-Triacontane	٩	1-methylnaphthalene	>	Td-n-propyttin			
	1,4-Dichlorobutane	¥		Hexacosane	σ	Dichlorophenyl Acetic Acid (DCAA)	3	Tributyl Phosphate			
	1.4-Difluorobenzene (DFB)	1	. Bromc	Bromobenzene	œ	4-Nitrophenol	X	Triphenyl Phosphate	a		

## Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name:

BRC Tronox Parcel G

**Collection Date:** 

June 11, 2008

LDC Report Date:

July 22, 2008

Matrix:

Water

Parameters:

Polychlorinated Biphenyls

Validation Level:

**EPA Level III** 

Laboratory:

TestAmerica, Inc.

Sample Delivery Group (SDG): F8F120137

Sample Identification

**RINSATE 1** 

**RINSATE 1MS** 

RINSATE 1MSD

## Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) 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 XIV.

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.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- 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. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

## III. Initial Calibration

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

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

## IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

### V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

Sample "RINSATE 1" was identified as a rinsate. No polychlorinated biphenyl contaminants were found in this blank.

## VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Although the MS/MSD relative percent difference (RPD) was not within QC limits for one compound, the MS/MSD percent recoveries (%R) were within QC limits and no data were qualified.

## VIII. Laboratory Control Samples (LCS)

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

## IX. Regional Quality Assurance and Quality Control

Not applicable.

## X. Pesticide Cleanup Checks

## a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

## b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

## XI. Target Compound Identification

Raw data were not reviewed for this SDG.

## XII. Compound Quantitation and Reported CRQLs

Raw data were not reviewed for this SDG.

## XIII. Overall Assessment of Data

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

## XIV. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel G
Polychlorinated Biphenyls - Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

BRC Tronox Parcel G
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG
F8F120137

No Sample Data Qualified in this SDG

BRC Tronox Parcel G
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG
F8F120137

No Sample Data Qualified in this SDG

LDC #: 19097A3b	VALIDATION COMPLETENESS WORKSHEET
SDG #: F8F120137	Level III
Laboratory: Test America	_ _

Date: 10/08
Page: <u>/</u> of <u>_/</u>
Reviewer: <u>^</u>
2nd Reviewer:
<del></del>

METHOD: GC Polychlorinated Biphenyls (EPA SW 846 Method 8082)

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
l.	Technical holding times	A	Sampling dates: 6/11/6%
II.	GC/ECD Instrument Performance Check	NA	
111.	Initial calibration	A	
IV.	Continuing calibration/ICV	4	1cv = 15
V.	Blanks	1	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	5W	
VIII.	Laboratory control samples	A	Les
IX.	Regional quality assurance and quality control	N	
Xa.	Florisil cartridge check	N	
Xb.	GPC Calibration	N	
XI.	Target compound identification	N	
XII.	Compound quantitation and reported CRQLs	N	
XIII.	Overall assessment of data	A	
XIV.	Field duplicates	~	
XV.	Field blanks	ND	R = 1

Note:

A = Acceptable N = Not provided/applicable

SW = See worksheet

ND = No compounds detected

R = Rinsate

FB = Field blank

D = Duplicate TB = Trip blank

EB = Equipment blank

Validated Samples:

Alalan

	Water				
1	RINSATE 1	11		21	31
2	RINSATE 1MS	12		22	32
3	RINSATE 1MSD	13		23	33
4	F8F170000-093	14	8169093	24	34
5		15		25	35
6		16		26	36
7		17		27	37
8		18		28	38
9		19		29	39
10		20		30	40

# VALIDATION FINDINGS WORKSHEET

METHOD: Pesticide/PCBs (EPASW 846 Method 8081/8082)

		.00		HH.					31.		72			LL,			MM.		NN.
	Y. Aroclor-1242		7	Z. Arocior-1248		AA. Aroclor-1254		BR Amelia see	0921-3000-3-5		CC. DB 608		700.00	10% 80.50		EE.			
O Endels Leaves			R. Endrin aldehyde		S. alpha-Chlordane			I. gamma-Chlordane		U. Toxaphene			V. Arocior-1016		W. Aroclos. 1221			X. Aroclor-1232	
i. Dieldrin		J. 4,4'-DDE					L. Endosulfan II		1000	. 4,4 .m		N. Endosulfan sulfate			0. 4,4*-DDT		P. Methorychics		
A. alpha-BHC		D. Deta-BHC		C. delta-BHC		D. gamma-auc			E. Heptachlor		F Alder			G. Heptachlor epoxide			H. Endosuljan i		

C:\docs\Work\Pesticides\COMPLST-3S.wpd

Notes:

19097436	see coul
LDC #:	SDG #:

## Matrix Spike/Matrix Spike Duplicates VALIDATION FINDINGS WORKSHEET

Page: Reviewer: 2nd Reviewer:

METHOD: LGC HPLC
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Y N N/A Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

Y N N/A Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

# MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
243	88	( )	( )	22 ( 20 )	7	noount wooin
		( )	( )	( )		
		( )	( )	( )		
		( )	( )	( )		
		( )	( )			
		( )	( )	( )		
		( )	( )			
		( )	( )	( )		
		( )	( )	( )		
		( )	( )	( )		
		( )	( )	( )		
		( )	(			
		( )	( )	( )		
		( )	( )	( )		
		( )	( )	( )		
		( )	( )	( )		
		( )	( )	( )		
		( )	( )			
		( )	( )	( )		
		( )	( )	( )		
		( )	( )	( )		
		( )	( )	( )		
		( )				
		( )	( )	( )		
		)				

## Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name:

BRC Tronox Parcel G

**Collection Date:** 

June 11, 2008

LDC Report Date:

July 24, 2008

Matrix:

Water

Parameters:

Metals

Validation Level:

EPA Level III

Laboratory:

TestAmerica, Inc.

Sample Delivery Group (SDG): F8F120137

Sample Identification

RINSATE 1

RINSATE 1MS

RINSATE 1MSD

## Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010B, 6020, and 7000 for Metals. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Mercury, Nickel, Niobium, Palladium, Phosphorus, Platinum, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Sulfur, Thallium, Tin, Titanium, Tungsten, Uranium, Vanadium, Zinc, and Zirconium.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) as there are no current guidelines for the methods 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.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

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.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- 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

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met with the following exceptions:

Date	Lab. Reference/ID	Analyte	%R (Limits)	Associated Samples	Flag	A or P
6/25/08	CCV (2230)	Thallium Uranium	113.4 (90-110) 115.8 (90-110)	All samples in SDG F8F120137	J+ (all detects) J+ (all detects)	Р

### III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Antimony Iron	0.89 ug/L 21.5 ug/L	All samples in SDG F8F120137
ICB/CCB	Antimony Cadmium Vanadium	1.3 ug/L 0.1 ug/L 2.7 ug/L	All samples in SDG F8F120137

Sample concentrations were compared to concentrations detected in the method blanks as required by the QAPP. No sample data was qualified.

Sample "RINSATE 1" was identified as a rinsate. No metal contaminants were found in this blank with the following exceptions:

Rinsate ID	Sampling Date	Analyte	Concentration	Associated Samples
RINSATE 1	6/11/08	Calcium Iron Magnesium Manganese Silicon Sodium Strontium	131 ug/L 154 ug/L 17.9 ug/L 0.84 ug/L 38.6 ug/L 39.2 ug/L 1.5 ug/L	No associated samples in this SDG

## IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met with the following exceptions:

ICS ID	Analyte	%R (Limits)	Associated Samples	Flag	A or P
ICSAB	Sulfur	120.2 (80-120)	All samples in SDG F8F120137	None	Р

## V. Matrix Spike Analysis

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.

## VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

## VII. Laboratory Control Samples (LCS)

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

LCS ID	Analyte	%R (Limits)	Associated Samples	Flag	A or P
LCS	Palladium	81.0 (85-115)	All samples in SDG F8F120137	J- (all detects) UJ (all non-detects)	Р

## VIII. Internal Standards (ICP-MS)

Raw data were not reviewed for this SDG.

## IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

## X. ICP Serial Dilution

ICP serial dilution analysis was performed by the laboratory. The analysis criteria were met.

## XI. Sample Result Verification

Raw data were not reviewed for this SDG.

## XII. Overall Assessment of Data

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

## XIII. Field Duplicates

No field duplicates were identified in this SDG.

## BRC Tronox Parcel G Metals - Data Qualification Summary - SDG F8F120137

SDG	Sample	Analyte	Flag	A or P	Reason
F8F120137	RINSATE 1	Thallium Uranium	J+ (all detects) J+ (all detects)	Р	Calibration (%R)
F8F120137	RINSATE 1	Sulfur	None	Р	ICP interference check (%R)
F8F120137	RINSATE 1	Palladium	J- (all detects) UJ (all non-detects)	Р	Laboratory control samples (%R)

BRC Tronox Parcel G Metals - Laboratory Blank Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

BRC Tronox Parcel G Metals - Field Blank Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

SDG #	t: 19097A4 t: F8F120137 atory: Test America	VALIDATIOI — ——		LETENESS WO evel III		Date: 1 page: 1 of 1  Reviewer: 6
ИЕТН	IOD: Metals (EPA SW 8	346 Method 6020/	6010B/700	0)	2	2nd Reviewer: (/~
	amples listed below wer tion findings worksheets		ch of the fo	ollowing validation a	reas. Validation findings	are noted in attached
	Validation	) Area			Comments	
I.	Technical holding times		A	Sampling dates: b /	1/18	
II.	Calibration		5W	, , , , , , , , , , , , , , , , , , ,		
III.	Blanks		SW			
IV.	ICP Interference Check Sa	mple (ICS) Analysis	5w			
V.	Matrix Spike Analysis		A	7 MS/ MSD		
VI.	Duplicate Sample Analysis	,	N	<b>,</b> , , , ,		
VII.	Laboratory Control Sample	es (LCS)	5W	Les		
VIII.	Internal Standard (ICP-MS	)	N	Not bent	med	
IX.	Furnace Atomic Absorption	ı QC	<b>V</b>	Not being	Jr J	
Χ.	ICP Serial Dilution		A		¥	
XI.	Sample Result Verification		N			
XII.	Overall Assessment of Dat	ta	A			
XIII.	Field Duplicates		N			
XIV.	Field Blanks		5n/	R21		
lote:	A = Acceptable N = Not provided/applicab SW = See worksheet	le R = Rin	o compounds sate eld blank	TB =	Duplicate - Trip blank - Equipment blank	
/alidate	ed Samples:					
1	RINSATE 1	11		21	31	
2	RINSATE 1MS	12		22	32	
3	RINSATE 1MSD	13		23	33	
4	PB	14		24	34	
5		15		25	35	
6		16		26	36	
7		17		27	37	
8		18		28	38	
9		19		29	39	
10		20		30	40	

LDC#: \ 9097 Art SDG#: <u>see</u> ine

## VALIDATION FINDINGS WORKSHEET Sample Specific Element Reference

Page:_	<u>l_of_/</u>
Reviewer:_	MU
2nd reviewer:	

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1	As_	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si,
	N	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si,
213	A2	Al, Sb. As. Ba. Be, Cd. Ca. Cr. Co. Cu. Fe, Pb. Mg. Mn. Hg. Ni, K, Se, Ag, Na, Tl, V, Zn. Mo, B, Si,
- ()	110	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si,
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si,
· · · · · · · · · · · · · · · · · · ·		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si,
	,	
1	As	Nb, Pd, P, Pt, Sn, Sr, Ti, W. U, Li, S, Zr
		Nb, Pd, P, Pt, Sn, Sr, Ti, W, U, Li, S, Zr,
ハンノ	As	Nb, Pd, P, Pt, Sn, Sr, Ti, W, U, Li, S, Zr,
		Nb, Pd, P, Pt, Sn, Sr, Ti, W, U, Li, S, Zr,
		Nb, Pd, P, Pt, Sn, Sr, Ti, W, U, Li, S, Zr,
		Nb, Pd, P, Pt, Sn, Sr, Ti, W, U, Li, S, Zr,
		Nb, Pd, P, Pt, Sn, Sr, Ti, W, U, Li, S, Zr,
		Nb, Pd, P, Pt, Sn, Sr, Ti, W, U, Li, S, Zr,
		Nb, Pd, P, Pt, Sn, Sr, Ti, W, U, Li, S, Zr,
		Nb, Pd, P, Pt, Sn, Sr, Ti, W, U, Li, S, Zr,
		Nb, Pd, P, Pt, Sn, Sr, Ti, W, U, Li, S, Zr,
		Nb, Pd, P, Pt, Sn, Sr, Ti, W, U, Li, S, Zr,
		Analysis Method
CP		Li, S
CP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, S),
CP-MS		Nb, Pd, P, Pt, Sn, Sr, Ti, W, U, Zr,
GFAA		Al Sh. As. Ba. Be, Cd, Ca. Cr. Co. Cu. Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, CN.

Comments: Mercury by CVAA if performed	
Comments: Mercury by CVAA if performed Nb: Niobium, Pd: Palladium, P: Phosphorus, Pt: Platinum, S: Sulfur, W: Tungsten, U: Uranium, Zr: Zirconium	
ND. NIODIUM, 1 G. 1 GIIIGIGI, 1 T. 1 TOPEN	

(9.97 AL

## VALIDATION FINDINGS WORKSHEET Calibration

2nd Reviewer:\_\_ Page: Reviewer:

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Were all instruments calibrated daily, each set-up time, and were the proper number of standards used?

Were all initial and continuing calibration verification percent recoveries (%R) within the control limits of 90-110% for all analytes except mercury (80-120%) and cyanide (85-115%)? Y NA NA

LEVEL IX ONLY:

Was a midrange cyanide standard distilled? Y N KI/A

Are all correlation coefficients >0.995? N N N

Were recalculated results acceptable? See Level IV Initial and Continuing Calibration Recalculation Worksheet for recalculations.

7	Cl notherdien	Ansivta	H**	Associated Samples	Qualification of Data
\$ / Jx / 5 / #	(0% / (7% )	41	7.811	A-11	J+ 1176
0 7.0		3	475	4	<u> </u>
		3		•	
				*	
Commonte					

LDC #: 19097A4 SDG #: See Cover

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000) Sample Concentration units, unless otherwise noted: ug/L

VALIDATION FINDINGS WORKSHEET PRICE/CCB QUALIFIED SAMPLES

Associated Samples: All (ND or > RL) Soil preparation factor applied:

Page:\_\_\_ Reviewer:\_\_\_ 2nd Reviewer:

tification																
Sample Identification																
	Blank Action I imit															
	Maximum ICB/CCB <sup>a</sup> (uq/l)	1.3	0.1		2.7											
	Maximum PB <sup>a</sup> (uq/l.)	0.89		21.5												
	Maximum PB <sup>a</sup> (mq/Kq)															
	Analyte	Sb	P	Fe	>											

Samples with analyte concentrations within tive unless the associated ICB, CCB of the concentration are listed above with the qualified as not defected, "U".

Note: a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 19097A4

SDG #: See Cover

VALIDATION FINDINGS WORKSHEET

Field Blanks

2nd Reviewer:\_\_ Reviewer.\_

METHOD: Trace Metals (EPA SW846 6010B/6020/7000)

Were field blanks identified in this SDG? N N/A

Were target analytes detected in the field blanks?

 $\mathbf{\alpha}$ Field blank type: (circle one) Field Blank / Rinsate / Other. Soil factor applied Blank units: ug/L Associated sample units: Sampling date: 6/11/08 Soil factor applied

Associated Samples: none

Sample Identification Action Level Blank ID 17.9 0.84 38.6 39.2 1.5 154 131 Analyte g င္ပ Fe β 툴 ï ര്

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: Samples with analyte concentrations within five times the associated field blank concentration are listed above, these sample results were qualified as not detected, "U".

see couer (909744 LDC #: SDG #:\_\_

## **VALIDATION FINDINGS WORKSHEET** ICP Interference Check Sample

2nd Reviewer: Reviewer: MH Page: of

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

| Y N N/A | Were the AB solution percent recoveries (%R) within the control limits of 80-120%?

| LEVEL IV ONLY:
| Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations.

6/17/08	*	Date	ICS Identification	Analyte	Findina	Associated Samples	Qualifications
		80/41/9	X 20948		~ (X)	An	has to ( Rosett No moture
	$\overline{}$						
	-						
	_						
	31						
	1						
			-				
mments:							
mments:							
mments:							
mments:							
mments:							
		nments:					

LDC #: 1 9097 A. SDG #:

# VALIDATION FINDINGS WORKSHEET Laboratory Control Samples (LCS)

Reviewer: MH Page: 2nd Reviewer:

METHOD: Trace Metals (EPA SW 846 Method 6010/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

| N N/A | Was a laboratory control sample (LCS) analyzed for each matrix in this SDG?

| N N/A | Were all aqueous LCS percent recoveries (%R) within the control limits of 80-129% and all soil LCS %R within laboratory established control limits.

 $\mathcal{L}b$   $\mathcal{L}b$  . Were recalculated results acceptable? See Level IV Recalculation Worksheet for recalculations. LEVEL IN ONLY:

	Qualifications	J- /4 / 2													
	Associated Samples	<u> </u>													
		81.0 (85-1165													
	Analyte	Pd													
-1-1-1	Mairix	44													
#	# CC3 ID	7.2					-								Comments:

## Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name:

BRC Tronox Parcel G

**Collection Date:** 

June 11, 2008

LDC Report Date:

July 23, 2008

Matrix:

Water

Parameters:

Wet Chemistry

Validation Level:

EPA Level III

Laboratory:

TestAmerica, Inc.

Sample Delivery Group (SDG): F8F120137

Sample Identification

**RINSATE 1** 

RINSATE 1MS

RINSATE 1DUP

## Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Bromide, Bromine, Chlorate, Chloride, Chorine, Fluoride, Nitrate as Nitrogen, Nitrite as Nitrogen, Orthophosphate as Phosphorus, and Sulfate and EPA Method 1664A for Oil & Grease.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (October 2004) 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 III.

Field duplicates are summarized in Section IX.

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.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- 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

All criteria for the initial calibration of each method were met.

## b. Calibration Verification

Calibration verification frequency and analysis criteria were met for each method when applicable.

## III. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks with the following exceptions:

Method Blank ID	Analyte	Concentration	Associated Samples
ICB/CCB	Orthophosphate as P	0.167 mg/L	All samples in SDG F8F120137

Sample concentrations were compared to concentrations detected in the method blanks as required by the QAPP. No sample data was qualified.

Sample "RINSATE 1" was identified as a rinsate. No contaminant concentrations were found in this blank with the following exceptions:

Rinsate ID	Sampling Date	Analyte	Concentration	Associated Samples
RINSATE 1	6/11/08	Sulfate	0.12 mg/L	No associated samples in this SDG

## IV. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

## V. Duplicates

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

## VI. Laboratory Control Samples

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

## VII. Sample Result Verification

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.

BRC Tronox Parcel G Wet Chemistry - Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

BRC Tronox Parcel G Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

BRC Tronox Parcel G Wet Chemistry - Field Blank Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

SDG	#:19097A6 #:F8F120137	_ <b>VA</b> I 	LIDATIOI		PLETEN Level III	ESS V	VORKSH	EET	Date: ガタンパー Page: <u>l</u> of <u>)</u> Reviewer: トケ
METI	atory: <u>Test America</u> HOD: (Analyte) <u>Bromide</u> and 300.0), O & G (EPA N	, Bromi Method	– <u>ne, Chlorat</u> 1664A)	e, Chloride	e, Chorine	, Fluoric	de, Nitrate, I	Nitrite, Orthor	2nd Reviewer:
	amples listed below wel tion findings worksheets		wed for ea	ch of the f	ollowing v	alidatio	n areas. Va	alidation findi	ngs are noted in attached
	Validation	n Area					(	Comments	
1.	Technical holding times			A	Sampling	dates: 6		<u> </u>	
lla.	Initial calibration			Δ			1 1		
IIb.	Calibration verification			7					
III.	Blanks			5W					
IV	Matrix Spike/Matrix Spike	Duplicate	es	A	3 Mg	Muso			
V	Duplicates			A					
VI.	Laboratory control sample	s		12	Les	usp			
VII.	Sample result verification			N	,				
VIII.		a		A					
IX.	Field duplicates			W					
x	Field blanks		· Marce	5W	R=	)			
Note:	A = Acceptable N = Not provided/applicab SW = See worksheet	ile	R = Rin	o compound sate eld blank	ls detected	•	D = Duplicate TB = Trip blar EB = Equipme	nk	
Valida	ted Samples:								
1	RINSATE 1	11			21			31	
2	RINSATE 1MS	12			22			32	
3	RINSATE 1DUP	13			23			33	
4	MB	14			24			34	
5		15			25			35	
6		16			26			36	
7		17			27			37	
8		18			28			38	
9		19			29			39	
10		20			30			40	
Note	•								

LDC #:_	1909746
SDG #:_	by wier

## VALIDATION FINDINGS WORKSHEET Sample Specific Analysis Reference

Page: \_\_\_of\_\_/ Reviewer: \_\_\_\_\_\_ 2nd reviewer: \_\_\_\_\_\_

All circled methods are applicable to each sample.

Sample ID	Matrix	Parameter
	As	Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate CH O+G)TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
m213	AZ	(Br) Bromine (Cl) Chlorine (E) NO, (NO), (SO) O-PO) Chlorate CIO, O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
	-	Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
	·	Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
		Br Bromine Cl Chlorine F NO <sub>3</sub> NO <sub>2</sub> SO <sub>4</sub> O-PO <sub>4</sub> Chlorate ClO <sub>4</sub> O+G/TPH
	:	

Comments:		
	<u> </u>	

(9091 B LDC #: SDG #:

# VALIDATION FINDINGS WORKSHEET

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Page: of 2nd Reviewer: Reviewer:

METHOD: Inorganics, Method

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(A) N/A Were all samples associated with a given method blank?

(A) N/A Were any inorganic contaminants detected above the reporting limit in the method blanks? If yes, please see qualifications below.

Associated Samples:

Conc. units:

0-P24-P 0,167			Sam	Sample Identification	uo			
191'0								
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		·						
		-						
					-			y
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						-	·	
	·							
							-	
	·							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT: All contaminants within five times the methoc blank concentration were qualified as not detected, "U".

LDC #: SDG #:

# VALIDATION FINDINGS WORKSHEET Field Blanks

Page: of Reviewer:

Were target analytes detected in the field blanks?

Sampling date: 6/11/08 Solfactor applied Field blank type: (circle one) Field Blank / Rinsate / Other:

Associated Samples:

																	•
													·				
	ation						 1										
	Sample Identification						 1		,							Associated Samples:	
	Sa						 1									- Associated	
									-			+			_	<u> </u>	
														inits:	tor applied	sate / Othe	
														d sample t	Soil fac	one) Field Blank / Rinsate / Other:	
Š	Clank	Action	Limit											Associate		one) Field	
21.210	DIAIIA ID	-		(	110										e:	pe: (circle	
Anshro	and in			1.00	+					-				ank units:	mpling dat	Fleid blank type: (circle one) Field Blank /	
-							 _	 -	_	_	 _	 	ك	ä	Sa	≝ [	==

	Analyte	Blank ID	Blank	Sample Ideals Marsha
ARCIED RESULTS WERE NOT OUT HEREIL SENTENTIAL STATES.			Action	
ORCLED HESULIS WERE NOT QUALIFIED. ALI HESIII 15 NOT CHEATER THE CONTRIBUTION OF THE C			Limit	
CROLED RESULTS WERE NOT QUALIFIED. ALT BESTILTS WOTT STEAM OF THE STEA				
CHOLED RESULTS WERE NOT QUALIFIED. ALT BESTILTS MOTTATION.				
CHOLED RESULTS WERE NOT QUALIFIED. ALT BESTILTS NOT CHEW CONTINUED TO THE				
GROLED RESULTS WERE NOT QUALIFIED. ALT BESITTS NOT CHEM EXPERITY.				
SYCLED HESULTS WERE NOT QUALIFIED. All BESIII TS NOT CHEM ENTERINGENEES.				
CROLED RESULTS WERE NOT QUALIFIED. ALT RESULTS NOT CHEM EXPLICATION OF ALL BESTILTS N				
ARCIED RESULTS WERE NOT QUALIFIED. AT BESILTS MOT PREVIOUS				
ARCIED RESULTS WERE NOT OUALIFIED. AT I RESULTS MOT PREVIOUS				
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ARCLED RESULTS WERE NOT QUALIFIED. AT I BESILT'S MOT CHEM EN WERE TO THE SHOP OF THE SHOP				
ARCLED RESULTS WERE NOT QUALIFIED. ATT RESULTS MOT CABA' EN UTTATION OF A STATE OF A STA				
ARCLED RESULTS WERE NOT COLALIFIED. AT I RESULTS MOT CHEM EN WITH SHIPS				
CIRCLED RESULTS WERE NOT QUALIFIED. ATT RESULTS MOT CIRCLE SHOPE S				
JACLED HESULIS WERE NOT QUALIFIED. ALT RESILITS MOT PUBLIC SHARE S				
	ARCLED RES	JLTS WERE NOT	OUALIFIED.	. ALL RESULTS NOT CIRCLED WITH DAY OF STATES BY STATES OF STATES BY STATES OF STATES O

## Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name:

BRC Tronox Parcel G

**Collection Date:** 

June 11, 2008

**LDC Report Date:** 

July 22, 2008

Matrix:

Water

Parameters:

Gasoline Range Organics

Validation Level:

EPA Level III

Laboratory:

TestAmerica, Inc.

Sample Delivery Group (SDG): F8F120137

Sample Identification

**RINSATE 1** 

RINSATE 1MS

**RINSATE 1MSD** 

## Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Gasoline Range Organics.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) 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 III.

Field duplicates are summarized in Section IX.

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.
- R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- 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 as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than 20.0%.

## b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

## III. Blanks

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

Sample "RINSATE 1" was identified as a rinsate. No gasoline range organic contaminants were found in this blank.

## IV. Accuracy and Precision Data

## a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## 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. Compound Quantitation and CRQLs

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 have been summarized at the end of this report if data has been qualified.

## IX. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel G Gasoline Range Organics - Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

BRC Tronox Parcel G Gasoline Range Organics - Laboratory Blank Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

BRC Tronox Parcel G
Gasoline Range Organics - Field Blank Data Qualification Summary - SDG
F8F120137

No Sample Data Qualified in this SDG

SDG : Labor	#:19097A7 #:F8F120137 ratory:_Test America			Le	evel III		WORKSHEE	ĒΤ	Date: 7/20/0 8/ Page: _/of _/ Reviewer:/2 2nd Reviewer:/2
The s	HOD: GC Gasoline Rang amples listed below wer ation findings worksheets	e revie	•			,	on areas. Valida	ation fin	dings are noted in attached
	Validation	Area					Con	nments	
1.	Technical holding times			<b>∧</b> s	Sampling d	ates:		28	
lla.	Initial calibration			Δ			7		
IIb.	Calibration verification/ICV			A	ICV	= 1	5		
III.	Blanks			A					
IVa.	Surrogate recovery			Α					
IVb.	Matrix spike/Matrix spike d	uplicate	s	Ą		., ., .,			
IVc.	Laboratory control samples	<b>;</b>		A	LCT				
V.	Target compound identifica	ition		N					
VI.	Compound Quantitation an	d CRQL	_S	N					
VII.	System Performance			N					
VIII.	Overall assessment of data	a		4					
ix.	Field duplicates			N	, ,				
X.	Field blanks			ND	R	= /			
Note: Validat	A = Acceptable N = Not provided/applicab SW = See worksheet sed Samples:	le R =	Rinsate FB = Fie	o compounds o	detected TE	3 = Trip	D = Duplicate blank EB = Equipment t	blank	
1	RINSATE 1	11	F8F130	0000-27	U 21	8/	65270	31	
2	RINSATE 1MS	12			22			32	
3	RINSATE 1MSD	13			23			33	
4		14			24			34	
5		15			25			35	
6		16			26			36	
7		17			27			37	
8		18			28			38	
9		19			29			39	
10		20			30			40	

Notes:\_

### Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name:

BRC Tronox Parcel G

**Collection Date:** 

June 11, 2008

LDC Report Date:

July 22, 2008

Matrix:

Water

Parameters:

Diesel Range Organics

Validation Level:

EPA Level III

Laboratory:

TestAmerica, Inc.

Sample Delivery Group (SDG): F8F120137

Sample Identification

**RINSATE 1** 

RINSATE 1MS

RINSATE 1MSD

#### Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015B for Diesel Range Organics.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) 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 III.

Field duplicates are summarized in Section IX.

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.
- R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- 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 as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than 20.0%.

#### b. Calibration Verification

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds.

#### III. Blanks

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

Sample "RINSATE 1" was identified as a rinsate. No diesel range organic contaminants were found in this blank.

#### IV. Accuracy and Precision Data

#### a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

#### 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. Compound Quantitation and CRQLs

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 have been summarized at the end of this report if data has been qualified.

#### IX. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel G Diesel Range Organics - Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

BRC Tronox Parcel G Diesel Range Organics - Laboratory Blank Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

BRC Tronox Parcel G
Diesel Range Organics - Field Blank Data Qualification Summary - SDG
F8F120137

No Sample Data Qualified in this SDG

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	: F8F120137	_		L	_evel II	l			Page: /of /
Labora	tory: Test America	-							Reviewer: 7
METH	<b>OD:</b> GC Diesel Range (	Organ	nics (EPA SV	V846 Metl	hod 801	5B)			Zila Noviowor.
The ea	mples listed below were	rovi	awad far ag	ah of the fe	allovina	volida	otion aroon \	/alidation find	inan are noted in attached
	imples listed below were ion findings worksheets.		ewed for eac	on or the id	ollowing	valida	ation areas. V	/alloation find	ings are noted in attached
<u> </u>									
	Validation	Area						Comments	
I.	Technical holding times			$\Delta$	Sampling	dates	6/1	1/08	
lla.	Initial calibration			A			/		
IIb.	Calibration verification/ICV			A	101	· 4	15		
111.	Blanks			A					
IVa.	Surrogate recovery			A					
IVb.	Matrix spike/Matrix spike du	plicate	s	A					
IVc.	Laboratory control samples			A	LC	>			
V.	Target compound identificat	ion		N					
VI.	Compound Quantitation and	CRQ	Ls	N					
VII.	System Performance			N					
VIII.	Overall assessment of data			Δ				, .	
IX.	Field duplicates			$\mathcal{N}_{f}$					
X.	Field blanks			~7	R	=1			
Note:	A = Acceptable	·	ND = No	compounds	s detected	,	D = Duplica	te	
	N = Not provided/applicable SW = See worksheet	e R	= Rinsate FB = Fie	eld blank		TB = T	rip blank EB = Equipr	nent blank	
Validate	d Samples: water	/							
	RINSATE 1	11			21			31	
	RINSATE 1MS	12			22		· · · · · · · · · · · · · · · · · · ·	32	
	RINSATE 1MSD	13			23			33	
	MINOATE IMOD	14	816544	/ み	24				
4		15	8 16 > 7 7	· /		+		34	
5				<del></del>	25	_		35	
6		16			26			36	
7		17			27			37	
8		18			28	-		38	
9		19			29			39	
10		20	1		30			40	
Notes:									

### Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name:

BRC Tronox Parcel G

**Collection Date:** 

June 11, 2008

LDC Report Date:

July 22, 2008

Matrix:

Water

Parameters:

Polynuclear Aromatic Hydrocarbons

Validation Level:

EPA Level III

Laboratory:

TestAmerica, Inc.

Sample Delivery Group (SDG): F8F120137

Sample Identification

**RINSATE 1** 

RINSATE 1MS

RINSATE 1MSD

#### Introduction

This data review covers 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8310 for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) 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 III.

Field duplicates are summarized in Section IX.

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.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- 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 as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

#### b. Calibration Verification

Calibration verification was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 15.0% for all compounds with the following exceptions:

Date	Detector	Compound	%D	Associated Samples	Flag	A or P
6/4/08	Not specified	Benzo(k)fluoranthene	16.6	All samples in SDG F8F120137	J+ (all detects)	А

#### III. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

Sample "RINSATE 1" was identified as a rinsate. No polynuclear aromatic hydrocarbon contaminants were found in this blank.

#### IV. Accuracy and Precision Data

#### a. Surrogate Recovery

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Column	Surrogate	%R (Limits)	Compound	Flag	A or P
RINSATE 1	Not specified	p-Terphenyl	60 (70-130)	All TCL compounds	J- (all detects) UJ (all non-detects)	Р
F8F170000-094	Not specified	p-Terphenyl	58 (70-130)	All TCL compounds	J- (all detects) UJ (all non-detects)	Р

#### b. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Although the MS/MSD percent recoveries (%R) were not within QC limits for some compounds, the MS/MSD percent recoveries (%R) were within QC limits and no data were qualified.

#### 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. Compound Quantitation and CRQLs

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.

#### BRC Tronox Parcel G Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG F8F120137

SDG	Sample	Compound	Flag	A or P	Reason
F8F120137	RINSATE 1	Benzo(k)fluoranthene	J+ (all detects)	А	Continuing calibration (ICV %D)
F8F120137	RINSATE 1	All TCL compounds	J- (all detects) UJ (all non-detects)	Р	Surrogate recovery (%R)

BRC Tronox Parcel G
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary
- SDG F8F120137

No Sample Data Qualified in this SDG

BRC Tronox Parcel G
Polynuclear Aromatic Hydrocarbons - Field Blank Data Qualification Summary SDG F8F120137

No Sample Data Qualified in this SDG

Labo	#: 19097A9 #: F8F120137 ratory: Test America HOD: GC Polynuclear Ar	- 		L	LETENESS Level III SW 846 Meth	-	Date: 7/20/08 Page: _/of/ Reviewer: 2nd Reviewer:	
	samples listed below wer ation findings worksheets		ewed for eac	ch of the fo	ollowing validat	ion areas. Validati	on find	dings are noted in attached
	Validation	Area				Comn	nents	
I.	Technical holding times			Δ	Sampling dates:	6/11/08		
lla.	Initial calibration			Δ				
llb.	Calibration verification/ICV			SW				
III.	Blanks			Δ	-			
IVa	Surrogate recovery			5W				
IVb		uplicate	s	رسى				
IVc	Laboratory control samples	5		A	LCS		•	
V.	Target compound identifica	ition		N				
VI.	Compound Quantitation an	d CRQI	_S	N				
VII.	System Performance			N				
VIII	Overall assessment of data	3		A				
IX.	Field duplicates			$\mathcal{N}$				
X.	Field blanks			ND	R=1			
Note:	A = Acceptable N = Not provided/applicabl SW = See worksheet	e	R = Rins	o compounds sate eld blank	detected	D = Duplicate TB = Trip blank EB = Equipment bla	nk	
Valida	ted Samples: wa Ter							7
1	RINSATE 1	11			21		31	
2	RINSATE 1MS	12			22		32	
3	RINSATE 1MSD	13			23		33	
4		14	81690	94	24		34	
5		15			25		35	
6		16			26	· · · · · · · · · · · · · · · · · · ·	36	
7		17			27		37	
8		18			28		38	
9		19	<u> </u>		29		39	
10		20			30		40	

Notes:\_

# VALIDATION FINDINGS WORKSHEET

METHOD: GC HPLC

			:		
8310	8330	8151	8141	8141(con't)	8021B
A. Acenaphthene	A. HMX	A. 2,4-D	A. Dichlorvos	V. Fensuifothion	V Bonzan
B. Acenaphthylene	B. RDX	B. 2,4-DB	B Mevinchoe	- M	- [ '
C. Anthracene	C. 1,3,5-Trinitrobenzene	C. 2.4 5.T	C. Hevrillones	W. Bolstar	.
de Composition de Com			C. Demeton-O	X. EPN	EE. Ethyl Benzene
D. Denzo(a)anunacene	D. 1,3-Dinitrobenzene	D. 2,4,5-TP	D. Demeton-S	Y. Azinphos-methyi	SSS. O-Xylene
E. Benzo(a)pyrene	E. Tetryl	E. Dinoseb	E. Ethoprop	Z. Coumaphos	RRR. MP-Xylene
F. Benzo(b)fluoranthene	F. Nitrobenzene	F. Dichlorprop	F. Naled	AA Parathion	GG. Total Xvlene
G. Benzo(g,h,l)perylene	G. 2.4.6-Trinitrotoluene	G. Dicamba	G. Sulfotep	BB. Trichloronate	
H. Benzo(k)fluoranthene	H. 4-Amino-2,6-dinitrotoluene	H. Dalapon	H. Phorate	CC. Trichlorinate	
I. Chrysene	I. 2-Amino-4,6-dinitrotoluene	I. MCPP	1. Dimethoate	DD. Trifluralin	
J. Dibenz(a,h)anthracene	J. 2,4-Dinitrotolune	J. MCPA	J. Diazinon	EE. Def	
K. Fluoranthene	K. 2,6-Dinitrotoluene	K. Pentachlorophenol	K. Disulfoton	FF. Prowl	
L. Fluorene	L. 2-Nitrotoluene	L 2,4,5-TP (silvex)	L. Parathion-methyl	GG. Ethion	
M. Indeno(1,2,3-cd)pyrene	M. 3-Nitrotoluene	M. Silvex	M. Ronnel	HH. Tetrachlorvinohos	
N. Naphthalene	N. 4-Nitrotoluene		N. Malathion	II. Sulprofos	
O. Phenanthrene	О.		O. Chlorpyrifos		
P. Pyrene	ď		P. Fenthion		
ď	D		Q. Parathion-ethyl		
ж.			R. Trichloronate		
·Si	·		S. Merphos		
			T. Stirofos		
			U. Tokuthion		

Notes:

LDC #: 1909149 ၁၅ Ay con METHOD:

HPLC

# VALIDATION FINDINGS WORKSHEET Continuing Calibration

2nd Reviewer: Reviewer:

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y NIA Y NIA Level IV Only

Were the retention times for all calibrated compounds within their respective acceptance windows?

Qualifications	1+/Adut															
Associated Samples	A11 + B1K										THE REAL PROPERTY AND ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY AND ADDRESS OF THE PROPERTY ADDRESS OF THE PROPERTY AND ADDRESS OF THE PROPERTY ADDRESS OF T					
RT (limit)	(			)	( )		(	)	(	)	(			,	)	)
%D / RPD (Limit ≤ 15.0)	16.6															
Compound	Ħ		•													
Detector/ Column	not specifical	,														
Standard ID	Q I CV 168															
Date	20/17/2															
* .	+															

LDC #: 1909749 SDG#: 10 cm

## VALIDATION FINDINDS WORKSHEET Surrogate Recovery

Page: Reviewer. 2nd Reviewer:

METHOD: LGC HPLC
Are surrogates required by the method? Yes or No
Are surrogates required by the method? Yes or No
Are surrogates required by the method? Yes or No N N/A

Were surrogates spiked into all samples and blanks?
Did all surrogate recoveries (%R) meet the QC limits?

	ſ	T	T		I	I	T	T	T	T	T	T	T	T	T		T		T		ſ	Τ	Γ	T		Γ
Qualifications	d/ 5m	<b>——</b>			d/5m/																Y Tetrachloro-m- xylene					
	) 77		) (		7				(			(		(			(			Surrogate Compound	1-Chloro-3-Nitrobenzene	3,4-Dinitrotoluene	Tripentyltin	Trl-n-propyttin	Tributyl Phosphate	
	70-130																				S	⊢	)	^	3	^
%R (Limits)	31			)	25											)		)		Surrogate Compound	Benzo(e)Pyrene	Terphenyl-D14	Decachlorobiphenyl (DCB)	1-methylnaphthalene	Dichlorophenyl Acetic Acid (DCAA)	4-Nitropheno!
	/ F						·										-				Σ	z	0	a	σ	œ
Surrogate Compound	P-terphony/				1															Surrogate Compound	Octacosane	Ortho-Terphenyl	Fluorobenzene (FBZ)	n-Triacontane	Нехасовале	Bromobenzene
or/ nr	4/1:00	0																		Surre		0	Fluc			
Detector/ Column	1 speul	`			21																O	Ι	-		¥	
Sample ID	tou 1				F8F17000-034															Surrogate Compound	Chlorobenzene (CBZ)	4-Bromofluorobenzene (BFB)	a,a,a-Trifluorotoluene	Bromochlorobenene	1,4-Dichlorobutane	1.4-Difluorobenzene (DFB)
#																					∢	8	O	۵	ш	<u> </u>

190 9749	us coul
LDC #:	SDG #:

# VALIDATION FINDINGS WORKSHEET Matrix Spike/Matrix Spike Duplicates

Page: Reviewer:\_ 2nd Reviewer:

METHOD: GC\_\_\_ HPLC
Properties see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG?

Was an MS/MSD analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

A/N/ N/N/A

Were the MS/MSD percent recoveries (%R) and relative percent differences (RPD) within QC limits?

Qualifications	no and resp in	7	MS17																					
Associated Samples			1																					
RPD (Limits)		( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )		( )	( )	( )	( )		· ·	,
MSD %R (Limits)	( )		(2) (70-134)	( )	( )			( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	
MS %R (Limits)	OSY 07 70 730		( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )		( )	
Compound	8	$^{\prime\prime}$	7																					
# MS/MSD ID	243																							

### Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** 

BRC Tronox Parcel G

**Collection Date:** 

June 11, 2008

LDC Report Date:

July 23, 2008

Matrix:

Water

Parameters:

Dioxins/Dibenzofurans

Validation Level:

**EPA** Level III

Laboratory:

TestAmerica, Inc.

Sample Delivery Group (SDG): F8F120137

Sample Identification

**RINSATE 1** 

#### Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8290 for Polychlorinated Dioxins/Dibenzofurans.

This review follows USEPA Contract Laboratory Program National Functional Guidelines for Polychlorinated Dioxins/Dibenzofurans Data Review (September 2005) 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 XIV.

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.
- R Data are qualified as rejected. There is a significant potential for the reporting of false negatives or false positives.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- 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. HRGC/HRMS Instrument Performance Check

Instrument performance was checked at the required daily frequency.

Retention time windows were established for all homologues. The chromatographic resolution between 2,3,7,8-TCDD and peaks representing any other unlabeled TCDD isomer was less than or equal to 25%.

#### III. Initial Calibration

A five point initial calibration was performed as required by the method.

Percent relative standard deviations (%RSD) were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

#### IV. Routine Calibration (Continuing)

Routine calibration was performed at the required frequencies.

All of the routine calibration percent differences (%D) between the initial calibration RRF and the routine calibration RRF were less than or equal to 20.0% for unlabeled compounds and less than or equal to 30.0% for labeled compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 25.0% for all compounds.

The ion abundance ratios for all PCDDs and PCDFs were within validation criteria.

#### V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated dioxin/dibenzofuran contaminants were found in the method blanks.

Sample RINSATE 1 was identified as a rinsate. No polychlorinated dioxin/dibenzofuran contaminants were found in this blank.

#### VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable.

#### VII. Laboratory Control Samples (LCS)

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

#### VIII. Regional Quality Assurance and Quality Control

Not applicable.

#### IX. Internal Standards

All internal standard recoveries were within QC limits.

#### X. Target Compound Identifications

Raw data were not reviewed for this SDG.

#### XI. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

#### XII. System Performance

Raw data were not reviewed for this SDG.

#### XIII. Overall Assessment of Data

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

#### XIV. Field Duplicates

No field duplicates were identified in this SDG.

BRC Tronox Parcel G Dioxins/Dibenzofurans - Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

BRC Tronox Parcel G
Dioxins/Dibenzofurans - Laboratory Blank Data Qualification Summary - SDG
F8F120137

No Sample Data Qualified in this SDG

BRC Tronox Parcel G Dioxins/Dibenzofurans - Field Blank Data Qualification Summary - SDG F8F120137

No Sample Data Qualified in this SDG

OD. HPGC/HPMS Diavi						Reviewer: 2nd Reviewer:	
mples listed below were on findings worksheets.	revie			V 846 Method ollowing validat		ation findin	(
Validation	Area				Cor	nments	
Technical holding times			4	Sampling dates:	6/11/08		
	nce ch	eck	4				
Initial calibration			À				
Routine calibration/ICV	$\propto$		4				
Blanks			A				
Matrix spike/Matrix spike du	olicates	S	7	Fac			
			<b>A</b>	LCS			
	and qu	ality control	N				
Internal standards			4				
Target compound identificati	ions		N				
		s	N				
			N				
Overall assessment of data			4				
Field duplicates	,		1				
				R=1			
A = Acceptable N = Not provided/applicable SW = See worksheet		R = Rin	o compounds	<u> </u>	D = Duplicate TB = Trip blank EB = Equipment	blank	
	11	816942	2MP	21		31	
		1.				32	
				23		33	
				24		34	
	15			25		35	
	16			26		36	
	17			27		37	
	18			28		38	
	19			29		39	
	20			30		40	
	Validation  Technical holding times  GC/MS Instrument performation and Initial calibration  Routine calibration/IteV  Blanks  Matrix spike/Matrix spike duplicatory control samples  Regional quality assurance and Internal standards  Target compound identificate  Compound quantitation and System performance  Overall assessment of data  Field duplicates  Field blanks  A = Acceptable N = Not provided/applicable SW = See worksheet	Validation Area  Technical holding times  GC/MS Instrument performance che Initial calibration  Routine calibration/fev  Blanks  Matrix spike/Matrix spike duplicates Laboratory control samples  Regional quality assurance and questing internal standards  Target compound identifications  Compound quantitation and CRQL  System performance  Overall assessment of data  Field duplicates  Field blanks  A = Acceptable N = Not provided/applicable SW = See worksheet  Samples:  WALEA  INSATE 1 11  12  13  14  15  16  17  18  19	Validation Area  Technical holding times  GC/MS Instrument performance check Initial calibration Routine calibration/ftev   CV  Blanks  Matrix spike/Matrix spike duplicates Laboratory control samples Regional quality assurance and quality control Internal standards  Target compound identifications Compound quantitation and CRQLs System performance Overall assessment of data  Field duplicates  Field blanks  A = Acceptable N = Not provided/applicable SW = See worksheet  B Samples:  RINSATE 1  11  12  13  14  15  16  17  18  19	Technical holding times  GC/MS Instrument performance check Initial calibration Routine calibration/fex Blanks  Matrix spike/Matrix spike duplicates Laboratory control samples Regional quality assurance and quality control Internal standards Target compound identifications Compound quantitation and CRQLs System performance Overall assessment of data Field duplicates Field blanks  A = Acceptable N = Not provided/applicable SW = See worksheet  Samples: WALX  RINSATE 1  11  8/6943>MP  12  13  14  15  16  17  18  19	Validation Area  Technical holding times  GC/MS Instrument performance check Initial calibration Routine calibration/NEW CV Blanks  Matrix spike/Matrix spike duplicates Laboratory control samples Regional quality assurance and quality control Internal standards Target compound identifications Compound quantitation and CRQLs N System performance Overall assessment of data Field duplicates Field duplicates Field duplicates  A = Acceptable N = Not provided/applicable SW = See worksheet  Samples: WAREA  RINSATE 1  11  866943>MP3  21  12  22  13  23  14  14  24  15  26  17  27  18  18  28  19  29	Technical holding times  GC/MS Instrument performance check Initial calibration Routine calibration/New   C/V   A   Blanks Matrix spike/Matrix spike duplicates Laboratory control samples Regional quality assurance and quality control   N   Internal standards Target compound identifications N   Compound quantitation and CRQLs System performance N   N   System performance N   N   Field duplicates  A = Acceptable N = Not provided/applicable SW = See worksheet  B = Field blank  A = Acceptable N = Not provided/applicable SW = See worksheet  B = Field blank  B = Field blank  B = Field blank  Compound quantitation and CRQLs N   N   R =   R = Rinsate FB = Field blank  B = Equipment  B = Trip blank EB = Equipment	Validation Area   Comments

LDC #: 19097A21 VALIDATION COMPLETENESS WORKSHEET

Date: 7/19/08