



December 05, 2012

Vista Project I.D.: 2110001

Mr. Joseph Houser
ARCADIS U.S., Inc.
6723 Towpath Road
Syracuse, NY 13214-0066

Dear Mr. Houser,

Enclosed are the results for the two soil samples received at Vista Analytical Laboratory on November 26, 2012. These samples were analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans on a rush turn-around time. The work was authorized under your Purchase Order No. B0009964.0002.70004.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com. Thank you for choosing Vista as part of your analytical support team.

Sincerely,

A handwritten signature in blue ink, appearing to read "William J. Luksemburg", is written over a light blue horizontal line.

William J. Luksemburg
Principal



Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAC for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Project No. 2110001
Case Narrative

Sample Condition on Receipt:

Two soil samples were received at 12.7 degrees C. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

EPA Method 1613

These samples were extracted and analyzed for tetra through octa chlorinated dioxins and furans by EPA Method 1613 using a ZB-5 GC column.

Holding Times

The method holding time criteria were met for these sample.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes of interest were detected above the sample quantitation limit in the Method Blank. The OPR recoveries were within the method acceptance criteria.

Labeled standard recoveries for all QC and field samples were within method acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2110001-01	PRR1SOLPC-13	20-Nov-12 14:00	26-Nov-12 08:58	Glass Jar, 120mL
		20-Nov-12 14:00	26-Nov-12 08:58	Glass Jar, 120mL
2110001-02	PRR1SOLPC-14	20-Nov-12 14:30	26-Nov-12 08:58	Glass Jar, 120mL
		20-Nov-12 14:30	26-Nov-12 08:58	Glass Jar, 120mL

ANALYTICAL RESULTS

Sample ID: Method Blank					EPA Method 1613B				
Matrix: Solid		QC Batch: B2K0003		Lab Sample: B2K0003-BLK1					
Sample Size: 10.0 g		Date Extracted: 28-Nov-2012 13:59		Date Analyzed: 01-Dec-12 04:50 Column: Analyst: MAS					
Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers	
2,3,7,8-TCDD	ND	0.107			IS 13C-2,3,7,8-TCDD	93.4	25 - 164		
1,2,3,7,8-PeCDD	ND	0.294			13C-1,2,3,7,8-PeCDD	92.8	25 - 181		
1,2,3,4,7,8-HxCDD	ND	0.125			13C-1,2,3,4,7,8-HxCDD	81.0	32 - 141		
1,2,3,6,7,8-HxCDD	ND	0.157			13C-1,2,3,6,7,8-HxCDD	76.0	28 - 130		
1,2,3,7,8,9-HxCDD	ND	0.151			13C-1,2,3,7,8,9-HxCDD	78.2	32 - 141		
1,2,3,4,6,7,8-HpCDD	ND	0.294			13C-1,2,3,4,6,7,8-HpCDD	71.9	23 - 140		
OCDD	ND	0.670			13C-OCDD	80.1	17 - 157		
2,3,7,8-TCDF	ND	0.152			13C-2,3,7,8-TCDF	91.5	24 - 169		
1,2,3,7,8-PeCDF	ND	0.168			13C-1,2,3,7,8-PeCDF	105	24 - 185		
2,3,4,7,8-PeCDF	ND	0.165			13C-2,3,4,7,8-PeCDF	105	21 - 178		
1,2,3,4,7,8-HxCDF	ND	0.0661			13C-1,2,3,4,7,8-HxCDF	81.1	26 - 152		
1,2,3,6,7,8-HxCDF	ND	0.0688			13C-1,2,3,6,7,8-HxCDF	80.0	26 - 123		
2,3,4,6,7,8-HxCDF	ND	0.0820			13C-2,3,4,6,7,8-HxCDF	78.4	28 - 136		
1,2,3,7,8,9-HxCDF	ND	0.106			13C-1,2,3,7,8,9-HxCDF	79.2	29 - 147		
1,2,3,4,6,7,8-HpCDF	ND	0.0842			13C-1,2,3,4,6,7,8-HpCDF	72.0	28 - 143		
1,2,3,4,7,8,9-HpCDF	ND	0.0933			13C-1,2,3,4,7,8,9-HpCDF	79.8	26 - 138		
OCDF	ND	0.279			13C-OCDF	74.9	17 - 157		
					CRS 37Cl-2,3,7,8-TCDD	77.3	35 - 197		
					Toxic Equivalent Quotient (TEQ) Data				
					TEQMinWHO2005Dioxin	0.00			
TOTALS									
Total TCDD	ND	0.107							
Total PeCDD	ND	0.294							
Total HxCDD	ND	0.215							
Total HpCDD	ND	0.294							
Total TCDF	ND	0.152							
Total PeCDF	ND	0.312							
Total HxCDF	ND	0.124							
Total HpCDF	ND	0.0933							

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL - Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.

Sample ID: OPR **EPA Method 1613B**

Matrix: Solid	QC Batch: B2K0003	Lab Sample: B2K0003-BS1
Sample Size: 10.0 g	Date Extracted: 28-Nov-2012 13:59	Date Analyzed: 01-Dec-12 03:13 Column: Analyst: MAS

Analyte	%R	Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	84.0	67 - 158	IS 13C-2,3,7,8-TCDD	102	20 - 175
1,2,3,7,8-PeCDD	93.7	70 - 142	13C-1,2,3,7,8-PeCDD	93.8	21 - 227
1,2,3,4,7,8-HxCDD	89.3	70 - 164	13C-1,2,3,4,7,8-HxCDD	85.3	21 - 193
1,2,3,6,7,8-HxCDD	91.6	76 - 134	13C-1,2,3,6,7,8-HxCDD	82.1	25 - 163
1,2,3,7,8,9-HxCDD	90.6	64 - 162	13C-1,2,3,7,8,9-HxCDD	82.7	21 - 193
1,2,3,4,6,7,8-HpCDD	91.4	70 - 140	13C-1,2,3,4,6,7,8-HpCDD	71.2	26 - 166
OCDD	88.0	78 - 144	13C-OCDD	76.4	13 - 199
2,3,7,8-TCDF	91.0	75 - 158	13C-2,3,7,8-TCDF	86.4	22 - 152
1,2,3,7,8-PeCDF	103	80 - 134	13C-1,2,3,7,8-PeCDF	82.1	21 - 192
2,3,4,7,8-PeCDF	105	68 - 160	13C-2,3,4,7,8-PeCDF	87.5	13 - 328
1,2,3,4,7,8-HxCDF	97.3	72 - 134	13C-1,2,3,4,7,8-HxCDF	89.4	19 - 202
1,2,3,6,7,8-HxCDF	96.9	84 - 130	13C-1,2,3,6,7,8-HxCDF	85.9	21 - 159
2,3,4,6,7,8-HxCDF	98.9	70 - 156	13C-2,3,4,6,7,8-HxCDF	85.0	22 - 176
1,2,3,7,8,9-HxCDF	97.9	78 - 130	13C-1,2,3,7,8,9-HxCDF	86.6	17 - 205
1,2,3,4,6,7,8-HpCDF	98.6	82 - 122	13C-1,2,3,4,6,7,8-HpCDF	75.0	21 - 158
1,2,3,4,7,8,9-HpCDF	100	78 - 138	13C-1,2,3,4,7,8,9-HpCDF	76.4	20 - 186
OCDF	97.9	63 - 170	13C-OCDF	70.9	13 - 199
			CRS 37Cl-2,3,7,8-TCDD	84.3	31 - 191

LCL-UCL - Lower control limit - upper control limit

Sample ID: PRR1SOLPC-13

EPA Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	ARCADIS U.S., Inc.	Matrix:	Soil	Lab Sample:	2110001-01	Date Received:	26-Nov-2012 8:58
Project:		Sample Size:	9.99 g	QC Batch:	B2K0003	Date Extracted:	28-Nov-2012 13:59
Date Collected:	20-Nov-2012 14:00	% Solids:	99.1	Date Analyzed :	01-Dec-12 08:53	Column:	Analyst: MAS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND		0.102		IS 13C-2,3,7,8-TCDD	107	25 - 164	
1,2,3,7,8-PeCDD	ND	0.346			13C-1,2,3,7,8-PeCDD	102	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.238			13C-1,2,3,4,7,8-HxCDD	88.1	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.282			13C-1,2,3,6,7,8-HxCDD	84.3	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.285			13C-1,2,3,7,8,9-HxCDD	85.9	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.819			13C-1,2,3,4,6,7,8-HpCDD	82.8	23 - 140	
OCDD	7.23				13C-OCDD	110	17 - 157	
2,3,7,8-TCDF	ND	0.236			13C-2,3,7,8-TCDF	102	24 - 169	
1,2,3,7,8-PeCDF	ND	0.188			13C-1,2,3,7,8-PeCDF	118	24 - 185	
2,3,4,7,8-PeCDF	ND		0.104		13C-2,3,4,7,8-PeCDF	120	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.100			13C-1,2,3,4,7,8-HxCDF	85.4	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.187			13C-1,2,3,6,7,8-HxCDF	83.4	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.119			13C-2,3,4,6,7,8-HxCDF	82.6	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.140			13C-1,2,3,7,8,9-HxCDF	84.3	29 - 147	
1,2,3,4,6,7,8-HpCDF	0.457			J	13C-1,2,3,4,6,7,8-HpCDF	78.4	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.191			13C-1,2,3,4,7,8,9-HpCDF	91.0	26 - 138	
OCDF	1.27			J	13C-OCDF	85.4	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	88.4	35 - 197	

Toxic Equivalent Quotient (TEQ) Data	
TEQMinWHO2005Dioxin	0.00712

TOTALS			
Total TCDD	0.264		0.365
Total PeCDD	ND	0.346	
Total HxCDD	ND	0.406	
Total HpCDD	ND	0.819	
Total TCDF	0.632		
Total PeCDF	0.372		0.734
Total HxCDF	ND	0.207	
Total HpCDF	0.457		

DL - Sample specific estimated detection limit
 EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
 The results are reported in dry weight.
 The sample size is reported in wet weight.

Sample ID: PRRISOLPC-14

EPA Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	ARCADIS U.S., Inc.	Matrix:	Soil	Lab Sample:	2110001-02	Date Received:	26-Nov-2012 8:58
Project:		Sample Size:	10.3 g	QC Batch:	B2K0003	Date Extracted:	28-Nov-2012 13:59
Date Collected:	20-Nov-2012 14:30	% Solids:	97.3	Date Analyzed :	01-Dec-12 09:41	Column:	Analyst: MAS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.188			IS 13C-2,3,7,8-TCDD	98.3	25 - 164	
1,2,3,7,8-PeCDD	ND	0.278			13C-1,2,3,7,8-PeCDD	99.6	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.272			13C-1,2,3,4,7,8-HxCDD	88.5	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.294			13C-1,2,3,6,7,8-HxCDD	84.1	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.301			13C-1,2,3,7,8,9-HxCDD	84.5	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.525			13C-1,2,3,4,6,7,8-HpCDD	83.2	23 - 140	
OCDD	2.20			J	13C-OCDD	86.1	17 - 157	
2,3,7,8-TCDF	ND	0.109			13C-2,3,7,8-TCDF	95.0	24 - 169	
1,2,3,7,8-PeCDF	ND	0.180			13C-1,2,3,7,8-PeCDF	119	24 - 185	
2,3,4,7,8-PeCDF	ND	0.182			13C-2,3,4,7,8-PeCDF	115	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0754			13C-1,2,3,4,7,8-HxCDF	88.6	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.0813			13C-1,2,3,6,7,8-HxCDF	84.5	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.0978			13C-2,3,4,6,7,8-HxCDF	83.6	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.121			13C-1,2,3,7,8,9-HxCDF	86.2	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.150			13C-1,2,3,4,6,7,8-HpCDF	80.2	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.162			13C-1,2,3,4,7,8,9-HpCDF	90.7	26 - 138	
OCDF	0.533			J	13C-OCDF	80.7	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	88.3	35 - 197	

Toxic Equivalent Quotient (TEQ) Data	
TEQMinWHO2005Dioxin	0.000820

TOTALS		
Total TCDD	0.130	0.342
Total PeCDD	ND	0.278
Total HxCDD	ND	0.476
Total HpCDD	ND	0.525
Total TCDF	ND	0.109
Total PeCDF	ND	0.349
Total HxCDF	ND	0.133
Total HpCDF	ND	0.200

DL - Sample specific estimated detection limit
 EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
 The results are reported in dry weight.
 The sample size is reported in wet weight.

Method 1613 MDL Study Solid

Compound	MDL	RL
2,3,7,8-TCDD	0.0616	0.5
1,2,3,7,8-PeCDD	0.307	2.5
1,2,3,4,7,8-HxCDD	0.236	2.5
1,2,3,6,7,8-HxCDD	0.331	2.5
1,2,3,7,8,9-HxCDD	0.174	2.5
1,2,3,4,6,7,8-HpCDD	0.330	2.5
OCDD	0.726	5.0
2,3,7,8-TCDF	0.0737	0.5
1,2,3,7,8-PeCDF	0.232	2.5
2,3,4,7,8-PeCDF	0.240	2.5
1,2,3,4,7,8-HxCDF	0.262	2.5
1,2,3,6,7,8-HxCDF	0.261	2.5
2,3,4,6,7,8-HxCDF	0.158	2.5
1,2,3,7,8,9-HxCDF	0.276	2.5
1,2,3,4,6,7,8-HpCDF	0.219	2.5
1,2,3,4,7,8,9-HpCDF	0.315	2.5
OCDF	0.205	5.0

Units: pg/g
19-August-2012

** based on 10 grams of sample. DLs are sample and congener specific.*

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	Dilution
E	The amount detected is above the High Calibration Limit.
P	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
H	Recovery was outside laboratory acceptance limits.
I	Chemical Interference
J	The amount detected is below the Low Calibration Limit.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated detection limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that correspond to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	CA00413
Alabama Dept of Environmental Management	41610
Arizona Department Of Health Services	AZ0639
Arkansas Dept of Environmental Quality	11-035-0
California Dept of Health – NELAP	02102CA
Colorado Dept of Public Health & Environment	N/A
Connecticut Dept of Public Health	PH-0182
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Dept of Health	E87777
Indiana Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Louisiana Department of Health and Hospitals	LA110017
Maine Department of Health	2010021
Michigan Department of Natural Resources	9932
Mississippi Department of Health	N/A
Nevada Division of Environmental Protection	CA004132011-1
New Jersey Dept of Environmental Protection	CA003
New York Department of Health	11411
North Carolina Dept of Health & Human Services	06700
North Dakota Dept of Health	R-078
Oklahoma Dept of Environmental Quality	2011-120
Oregon Laboratory Accreditation Program	CA200001
Pennsylvania Dept of Environmental Protection	68-00490
South Carolina Dept of Health	87002001
Tennessee Dept of Environment and Conservation	TN02996
Texas Commission on Environmental Quality	T104704189-11-2
Utah Dept of Health	CA16400
Virginia Dept of General Services	00013
Washington Department of Ecology	C584
Wisconsin Dept of Natural Resources	998036160

**CHAIN OF CUSTODY & LABORATORY
ANALYSIS REQUEST FORM**

Lab Work Order #

2110001 12.7°C

PROJ. NO. B0009964.0002.70004		PROJECT NAME Tierra Phase I Removal														SDG NUMBER PRR1355	COC Number						
SAMPLERS:						Requested Analyses																	Remarks
SAMPLE ID	DATE	TIME	MATRIX	Composite/Grab	# Containers	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
PRR1SOLPC-13		14:00	soil	Grab	2	X																	
PRR1SOLPC-14		14:30	soil	Grab	2	X																	
Requested Analyses						Special Instructions/Comments:											<input type="checkbox"/> Special QA/QC Instructions						
1	Dioxins (PCDD/PCDFs)					1 extra 4 oz jar submitted in case of sample breakage.																	
2																							
3																							
						Laboratory Information and Receipt																	
4	Lab Name: Vista Analytical - El Dorado Hills, CA											<input type="checkbox"/> Cooler packed with ice						Sample Receipt:					
7	Shipping Tracking #											<input type="checkbox"/> Cooler custody seal intact						Condition/Cooler Temp:					
5	Specify Turnaround Requirements: 14 day TAT																						
6																							
7	Relinquished by:		DATE	TIME	Received by:		Relinquished by:		DATE	TIME	Received by:		Relinquished by:		DATE	TIME	Received by:						
8			11/20/12	1700			Fed Ex		11/26/12	0905													
9	Relinquished by:		DATE	TIME	Received by:		Relinquished by:		DATE	TIME	Received by:		Relinquished by:		DATE	TIME	Received by:						
10																							
11	Relinquished by:		DATE	TIME	Received by:		Relinquished by:		DATE	TIME	Received by:		Relinquished by:		DATE	TIME	Received by:						
12																							
13	Relinquished by:		DATE	TIME	Received by:		Relinquished by:		DATE	TIME	Received by:		Relinquished by:		DATE	TIME	Received by:						
14																							
15	Relinquished by:		DATE	TIME	Received by:		Relinquished by:		DATE	TIME	Received by:		Relinquished by:		DATE	TIME	Received by:						
16																							
17	Relinquished by:		DATE	TIME	Received by:		Relinquished by:		DATE	TIME	Received by:		Relinquished by:		DATE	TIME	Received by:						

SDG TRACKING LOG

SDG Number PRR1355

SDG Open Date 11/20/2012

Sample Matrix Soil

SDG Close Date 11/20/2012

Sample #	Sample ID	MS/MSD	Comments
1	PRR1SOLPC-13		Two 4 oz jars (1 extra in case of breakage)
2	PRR1SOLPC-14		Two 4 oz jars (1 extra in case of breakage)
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

Notes:

1. The SDG must not exceed 20 field samples. Trip or Field Blanks do not count towards the sample total. Check which of the 20 samples has been collected to include extra volume for MS/MSD and assigned as such.
2. 3x the weights listed should be collected for lab QC (i.e., MS/MSD/internal lab duplicate).
3. Field duplicate is a separate sample, not to be confused with "internal lab duplicate."

SAMPLE LOG-IN CHECKLIST



Vista Project #: 2110001 TAT 14

Samples Arrival:	Date/Time <u>11/26/12 0858</u>	Initials: <u>UBB</u>	Location: <u>WR-2</u>
			Shelf/Rack: <u>N/A</u>
Logged In:	Date/Time <u>11/26/12 0939</u>	Initials: <u>UBB</u>	Location: <u>WR-2</u>
			Shelf/Rack: <u>F5</u>
Delivered By:	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> On Trac
		<input type="checkbox"/> DHL	<input type="checkbox"/> Hand Delivered
	<input type="checkbox"/> Other		
Preservation:	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
		<input type="checkbox"/> None	
Temp °C	<u>12.7</u>	Time:	<u>0904</u>
		Thermometer ID:	<u>IR-1</u>

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill			
Trk # <u>7941 2110 0305</u>	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?	✓		
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓
Na ₂ S ₂ O ₃ Preservation Documented?	<u>N/A</u>	<input type="checkbox"/> COC	<input type="checkbox"/> Sample Container
		<input type="checkbox"/> None	
Shipping Container	<input checked="" type="checkbox"/> Vista	<input type="checkbox"/> Client	<input checked="" type="checkbox"/> Retain
		<input type="checkbox"/> Return	<input type="checkbox"/> Dispose

Comments:

Sample label ID: PRR150LPC-13 2 containers
PRR150LPC-14 ↓

Chain of Custody Anomaly/Sample Acceptance Form



Client: ARCADIS U.S., Inc.
Contact: Joseph Houser
Email: joe.houser@arcadis-us.com
Phone: 315-6719226

Workorder Number: 2110001
Date Received: 26-Nov-12 08:58
Documented by/date: Bettina 11/26/12

Please review the following information and complete the Client Authorization section. To comply with NELAC regulations, we must receive authorization before proceeding with sample analysis.

Thank you,

Martha Maier
mmaier@vista-analytical.com
916-673-1520

The following information or item is needed to proceed with analysis:

- | | | |
|----------------------------------------------------|-------------------------------------------------------------|-------------------------------------------|
| <input type="checkbox"/> Complete Chain-of-Custody | <input type="checkbox"/> Preservative | <input type="checkbox"/> Collector's Name |
| <input type="checkbox"/> Test Method Requested | <input type="checkbox"/> Sample Identification | <input type="checkbox"/> Sample Type |
| <input type="checkbox"/> Analyte List Requested | <input type="checkbox"/> Sample Collection Date and/or Time | <input type="checkbox"/> Sample Location |
| <input type="checkbox"/> Other: | | |

The following anomalies were noted. Authorization is needed to proceed with analysis.

- | | |
|---------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| <input checked="" type="checkbox"/> Temperature outside +/-2 C range
Temperature <u>12.7°C</u> | Samples Affected: <u>PRR1SOLPC-13 & PRR1SOLPC-14</u> |
| <input type="checkbox"/> Sample ID Discrepancy | Ice Present? Yes & Melted |
| <input type="checkbox"/> Sample Holding Time Missed | <input type="checkbox"/> Insufficient Sample Size |
| <input type="checkbox"/> Custody Seals Broken | <input type="checkbox"/> Sample Container(s) Broken |
| | <input type="checkbox"/> Incorrect Container Type |

Comments:

Client Authorization	
Proceed with Analysis: <input checked="" type="radio"/> YES <input type="radio"/> NO	Signature and Date <u>Colin Smith 11/28/2012</u>
Client Comments/Instructions <u>per Ryan Shatt proceed.</u>	

From: (732) 575-4275
Michael Pelenski
ARCADIS
80 Lister Ave.

Newark, NJ 07105

Origin ID: VAKA



Ship Date: 20NOV12
ActWgt: 25.0 LB
CAD: 103886297/NET3300
Dims: 24 X 13 X 14 IN

Delivery Address Bar Code



SHIP TO: (916) 673-1520
Martha Maier
Vista
1104 WINDFIELD WAY

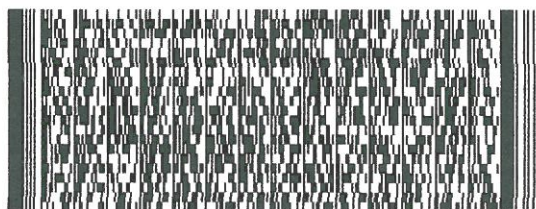
EL DORADO HILLS, CA 95762

BILL SENDER

Ref # B0009966.0002.70004
Invoice #
PO # B0009966.0002.70004
Dept #

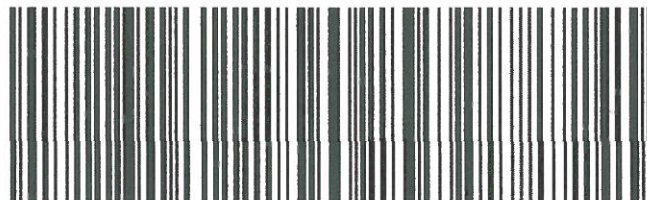
WED - 21 NOV A2
PRIORITY OVERNIGHT

TRK# 7941 2110 0305
0201



XH MHRA

95762
CA-US
SMF



515G3/EE3B/AA44

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December 06, 2012

Vista Project I.D.: 2110013

Mr. Joseph Houser
ARCADIS U.S., Inc.
6723 Towpath Road
Syracuse, NY 13214-0066

Dear Mr. Houser,

Enclosed are the results for the two soil samples received at Vista Analytical Laboratory on November 30, 2012. These samples were extracted and analyzed using EPA Method 1613 for tetra-through-octa chlorinated dioxins and furans. This sample set was analyzed on a rush turn-around time.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com. Thank you for choosing Vista as part of your analytical support team.

Sincerely,

A handwritten signature in blue ink that reads "Martha Maier".

Martha Maier
President



Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAC for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Project No. 2110013
Case Narrative

Sample Condition on Receipt:

Two soil samples were received in good condition and within the temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

EPA Method 1613

These samples were extracted and analyzed for tetra through octa chlorinated dioxins and furans by EPA Method 1613 using a ZB-5 GC column.

Holding Times

The method holding time criteria were met for these samples.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. No analytes of interest were detected above the sample quantitation limit in the Method Blank. The OPR recoveries were within the method acceptance criteria.

Labeled standard recoveries for all QC and field samples were within method acceptance criteria.

A MS/MSD was run on sample PRR1SOLPC-07. All MS/MSD recoveries were within the method acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2110013-01	PRR1SOLPC-04	29-Nov-12 12:25	30-Nov-12 08:40	Glass Jar, 120mL
		29-Nov-12 12:25	30-Nov-12 08:40	Glass Jar, 120mL
2110013-02	PRR1SOLPC-07	29-Nov-12 11:35	30-Nov-12 08:40	Glass Jar, 120mL
		29-Nov-12 11:35	30-Nov-12 08:40	Glass Jar, 120mL
		29-Nov-12 11:35	30-Nov-12 08:40	Glass Jar, 120mL

ANALYTICAL RESULTS

Sample ID: Method Blank					EPA Method 1613B				
Matrix: Solid		QC Batch: B2L0007			Lab Sample: B2L0007-BLK1				
Sample Size: 10.0 g		Date Extracted: 04-Dec-2012 13:54			Date Analyzed: 05-Dec-12 21:19 Column: ZB-5 Analyst: MAS				
Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers	
2,3,7,8-TCDD	ND	0.145			IS 13C-2,3,7,8-TCDD	89.7	25 - 164		
1,2,3,7,8-PeCDD	ND	0.221			13C-1,2,3,7,8-PeCDD	86.1	25 - 181		
1,2,3,4,7,8-HxCDD	ND	0.172			13C-1,2,3,4,7,8-HxCDD	79.1	32 - 141		
1,2,3,6,7,8-HxCDD	ND	0.204			13C-1,2,3,6,7,8-HxCDD	75.6	28 - 130		
1,2,3,7,8,9-HxCDD	ND	0.216			13C-1,2,3,7,8,9-HxCDD	73.4	32 - 141		
1,2,3,4,6,7,8-HpCDD	ND	0.286			13C-1,2,3,4,6,7,8-HpCDD	74.0	23 - 140		
OCDD	ND	0.480			13C-OCDD	76.6	17 - 157		
2,3,7,8-TCDF	ND	0.0765			13C-2,3,7,8-TCDF	94.3	24 - 169		
1,2,3,7,8-PeCDF	ND	0.213			13C-1,2,3,7,8-PeCDF	109	24 - 185		
2,3,4,7,8-PeCDF	ND	0.210			13C-2,3,4,7,8-PeCDF	111	21 - 178		
1,2,3,4,7,8-HxCDF	ND	0.0733			13C-1,2,3,4,7,8-HxCDF	79.6	26 - 152		
1,2,3,6,7,8-HxCDF	ND	0.0716			13C-1,2,3,6,7,8-HxCDF	75.8	26 - 123		
2,3,4,6,7,8-HxCDF	ND	0.0859			13C-2,3,4,6,7,8-HxCDF	75.4	28 - 136		
1,2,3,7,8,9-HxCDF	ND	0.109			13C-1,2,3,7,8,9-HxCDF	75.0	29 - 147		
1,2,3,4,6,7,8-HpCDF	ND	0.0550			13C-1,2,3,4,6,7,8-HpCDF	72.4	28 - 143		
1,2,3,4,7,8,9-HpCDF	ND	0.0671			13C-1,2,3,4,7,8,9-HpCDF	83.5	26 - 138		
OCDF	ND	0.184			13C-OCDF	75.4	17 - 157		
					CRS 37Cl-2,3,7,8-TCDD	85.7	35 - 197		
					Toxic Equivalent Quotient (TEQ) Data				
					TEQMinWHO2005Dioxin		0.00		
TOTALS									
Total TCDD	ND	0.145							
Total PeCDD	ND		0.294						
Total HxCDD	ND	0.372							
Total HpCDD	ND	0.478							
Total TCDF	ND	0.0765							
Total PeCDF	ND		0.0831						
Total HxCDF	ND	0.136							
Total HpCDF	ND	0.107							

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL - Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.

Sample ID: OPR**EPA Method 1613B**

Matrix: Solid	QC Batch: B2L0007	Lab Sample: B2L0007-BS1
Sample Size: 10.0 g	Date Extracted: 04-Dec-2012 13:54	Date Analyzed: 05-Dec-12 18:06 Column: ZB-5 Analyst: MAS

Analyte	%R	Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	85.9	67 - 158	IS 13C-2,3,7,8-TCDD	39.0	20 - 175
1,2,3,7,8-PeCDD	107	70 - 142	13C-1,2,3,7,8-PeCDD	31.7	21 - 227
1,2,3,4,7,8-HxCDD	98.2	70 - 164	13C-1,2,3,4,7,8-HxCDD	37.7	21 - 193
1,2,3,6,7,8-HxCDD	99.9	76 - 134	13C-1,2,3,6,7,8-HxCDD	38.0	25 - 163
1,2,3,7,8,9-HxCDD	100	64 - 162	13C-1,2,3,7,8,9-HxCDD	37.7	21 - 193
1,2,3,4,6,7,8-HpCDD	97.9	70 - 140	13C-1,2,3,4,6,7,8-HpCDD	39.8	26 - 166
OCDD	98.5	78 - 144	13C-OCDD	44.5	13 - 199
2,3,7,8-TCDF	96.2	75 - 158	13C-2,3,7,8-TCDF	36.5	22 - 152
1,2,3,7,8-PeCDF	117	80 - 134	13C-1,2,3,7,8-PeCDF	37.8	21 - 192
2,3,4,7,8-PeCDF	119	68 - 160	13C-2,3,4,7,8-PeCDF	37.4	13 - 328
1,2,3,4,7,8-HxCDF	106	72 - 134	13C-1,2,3,4,7,8-HxCDF	35.4	19 - 202
1,2,3,6,7,8-HxCDF	106	84 - 130	13C-1,2,3,6,7,8-HxCDF	36.0	21 - 159
2,3,4,6,7,8-HxCDF	105	70 - 156	13C-2,3,4,6,7,8-HxCDF	36.3	22 - 176
1,2,3,7,8,9-HxCDF	108	78 - 130	13C-1,2,3,7,8,9-HxCDF	36.5	17 - 205
1,2,3,4,6,7,8-HpCDF	104	82 - 122	13C-1,2,3,4,6,7,8-HpCDF	37.7	21 - 158
1,2,3,4,7,8,9-HpCDF	107	78 - 138	13C-1,2,3,4,7,8,9-HpCDF	40.5	20 - 186
OCDF	105	63 - 170	13C-OCDF	41.2	13 - 199
			CRS 37Cl-2,3,7,8-TCDD	34.8	31 - 191

LCL-UCL - Lower control limit - upper control limit

Client Data		Sample Data		Laboratory Data			
Name:	ARCADIS U.S., Inc.	Matrix:	Soil	Lab Sample:	2110013-01	Date Received:	30-Nov-2012 8:40
Project:		Sample Size:	10.4 g	QC Batch:	B2L0007	Date Extracted:	30-Nov-2012 13:29
Date Collected:	29-Nov-2012 12:25	% Solids:	97.0	Date:	06-Dec-12 02:07	Column:	ZB-5 Analyst: MAS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.181			IS 13C-2,3,7,8-TCDD	92.3	25 - 164	
1,2,3,7,8-PeCDD	ND	0.243			13C-1,2,3,7,8-PeCDD	85.2	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.144			13C-1,2,3,4,7,8-HxCDD	91.3	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.156			13C-1,2,3,6,7,8-HxCDD	91.3	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.153			13C-1,2,3,7,8,9-HxCDD	89.8	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.527			13C-1,2,3,4,6,7,8-HpCDD	83.2	23 - 140	
OCDD	1.73			J	13C-OCDD	78.6	17 - 157	
2,3,7,8-TCDF	ND	0.206			13C-2,3,7,8-TCDF	88.8	24 - 169	
1,2,3,7,8-PeCDF	ND	0.174			13C-1,2,3,7,8-PeCDF	104	24 - 185	
2,3,4,7,8-PeCDF	ND	0.193			13C-2,3,4,7,8-PeCDF	103	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.104			13C-1,2,3,4,7,8-HxCDF	83.0	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.104			13C-1,2,3,6,7,8-HxCDF	78.8	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.113			13C-2,3,4,6,7,8-HxCDF	84.4	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.129			13C-1,2,3,7,8,9-HxCDF	94.3	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND		0.176		13C-1,2,3,4,6,7,8-HpCDF	88.5	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.129			13C-1,2,3,4,7,8,9-HpCDF	88.3	26 - 138	
OCDF	ND		0.557		13C-OCDF	83.1	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	79.3	35 - 197	

Toxic Equivalent Quotient (TEQ) Data

TEQMinWHO2005Dioxin 0.000519

TOTALS				
Total TCDD	0.178			
Total PeCDD	ND	0.243		
Total HxCDD	ND	0.208		
Total HpCDD	ND	0.527		
Total TCDF	ND	0.206		
Total PeCDF	ND	0.339		
Total HxCDF	ND	0.169		
Total HpCDF	ND		0.176	

DL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

The results are reported in dry weight.

The sample size is reported in wet weight.

Client Data		Sample Data		Laboratory Data			
Name:	ARCADIS U.S., Inc.	Matrix:	Soil	Lab Sample:	2110013-02	Date Received:	30-Nov-2012 8:40
Project:		Sample Size:	10.4 g	QC Batch:	B2L0007	Date Extracted:	04-Dec-2012 13:54
Date Collected:	29-Nov-2012 11:35	% Solids:	96.9	Date:	05-Dec-12 23:43	Column:	ZB-5 Analyst: MAS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.157			IS 13C-2,3,7,8-TCDD	89.1	25 - 164	
1,2,3,7,8-PeCDD	ND	0.330			13C-1,2,3,7,8-PeCDD	79.4	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.204			13C-1,2,3,4,7,8-HxCDD	84.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.228			13C-1,2,3,6,7,8-HxCDD	82.1	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.217			13C-1,2,3,7,8,9-HxCDD	86.1	32 - 141	
1,2,3,4,6,7,8-HpCDD	0.183			J	13C-1,2,3,4,6,7,8-HpCDD	97.0	23 - 140	
OCDD	0.828			J	13C-OCDD	111	17 - 157	
2,3,7,8-TCDF	ND	0.112			13C-2,3,7,8-TCDF	86.5	24 - 169	
1,2,3,7,8-PeCDF	ND	0.222			13C-1,2,3,7,8-PeCDF	84.6	24 - 185	
2,3,4,7,8-PeCDF	ND	0.220			13C-2,3,4,7,8-PeCDF	85.9	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0778			13C-1,2,3,4,7,8-HxCDF	82.6	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.0865			13C-1,2,3,6,7,8-HxCDF	78.9	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.0962			13C-2,3,4,6,7,8-HxCDF	80.9	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.108			13C-1,2,3,7,8,9-HxCDF	85.9	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.161			13C-1,2,3,4,6,7,8-HpCDF	87.4	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.0751			13C-1,2,3,4,7,8,9-HpCDF	116	26 - 138	
OCDF	ND	0.267			13C-OCDF	110	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	84.4	35 - 197	

Toxic Equivalent Quotient (TEQ) Data	
TEQMinWHO2005Dioxin	0.00208

TOTALS			
Total TCDD	ND	0.157	
Total PeCDD	ND	0.330	
Total HxCDD	ND	0.319	
Total HpCDD	0.183		0.332
Total TCDF	ND	0.112	
Total PeCDF	ND	0.221	
Total HxCDF	ND	0.155	
Total HpCDF	ND	0.165	

DL - Sample specific estimated detection limit
 EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
 The results are reported in dry weight.
 The sample size is reported in wet weight.

Sample ID: Matrix Spike						EPA Method 1613B			
Matrix: Solid		QC Batch: B2L0007		Lab Sample: B2L0007-MS1/B2L0007-MSD1					
Sample Size: 10.3/10.3 g		Date Extracted: 04-Dec-2012 13:54		Date Analyzed: 06-Dec-12 00:31 Column: ZB-5 Analyst: MAS					
Analyte	Spike-MS pg/g	MS %R	Spike-MSD pg/g	MSD %R	RPD	Labeled Standard	%R	LCL-UCL	
2,3,7,8-TCDD	20.0	94.7	20.1	88.4	6.01	IS 13C-2,3,7,8-TCDD	90.1	20 - 175	
1,2,3,7,8-PeCDD	99.8	111	101	107	2.91	13C-1,2,3,7,8-PeCDD	91.5	21 - 227	
1,2,3,4,7,8-HxCDD	99.8	101	101	99.7	0.441	13C-1,2,3,4,7,8-HxCDD	93.9	21 - 193	
1,2,3,6,7,8-HxCDD	99.8	97.6	101	98.6	1.84	13C-1,2,3,6,7,8-HxCDD	92.8	25 - 163	
1,2,3,7,8,9-HxCDD	99.8	99.6	101	101	2.05	13C-1,2,3,7,8,9-HxCDD	94.5	21 - 193	
1,2,3,4,6,7,8-HpCDD	99.8	107	101	95.8	9.98	13C-1,2,3,4,6,7,8-HpCDD	89.4	26 - 166	
OCDD	200	107	201	109	2.05	13C-OCDD	87.5	13 - 199	
2,3,7,8-TCDF	20.0	92.3	20.1	91.6	0.0559	13C-2,3,7,8-TCDF	86.8	22 - 152	
1,2,3,7,8-PeCDF	99.8	111	101	118	7.39	13C-1,2,3,7,8-PeCDF	93.1	21 - 192	
2,3,4,7,8-PeCDF	99.8	120	101	117	1.63	13C-2,3,4,7,8-PeCDF	101	13 - 328	
1,2,3,4,7,8-HxCDF	99.8	108	101	104	2.13	13C-1,2,3,4,7,8-HxCDF	89.7	19 - 202	
1,2,3,6,7,8-HxCDF	99.8	111	101	107	3.05	13C-1,2,3,6,7,8-HxCDF	84.8	21 - 159	
2,3,4,6,7,8-HxCDF	99.8	110	101	106	2.50	13C-2,3,4,6,7,8-HxCDF	86.6	22 - 176	
1,2,3,7,8,9-HxCDF	99.8	109	101	104	4.19	13C-1,2,3,7,8,9-HxCDF	91.3	17 - 205	
1,2,3,4,6,7,8-HpCDF	99.8	108	101	99.4	7.74	13C-1,2,3,4,6,7,8-HpCDF	91.8	21 - 158	
1,2,3,4,7,8,9-HpCDF	99.8	105	101	104	0.269	13C-1,2,3,4,7,8,9-HpCDF	90.7	20 - 186	
OCDF	200	111	201	104	5.33	13C-OCDF	82.5	13 - 199	
						CRS 37Cl-2,3,7,8-TCDD	78.4	31 - 191	

LCL-UCL - Lower control limit - upper control limit

Method 1613 MDL Study Solid

Compound	MDL	RL
2,3,7,8-TCDD	0.0616	0.5
1,2,3,7,8-PeCDD	0.307	2.5
1,2,3,4,7,8-HxCDD	0.236	2.5
1,2,3,6,7,8-HxCDD	0.331	2.5
1,2,3,7,8,9-HxCDD	0.174	2.5
1,2,3,4,6,7,8-HpCDD	0.330	2.5
OCDD	0.726	5.0
2,3,7,8-TCDF	0.0737	0.5
1,2,3,7,8-PeCDF	0.232	2.5
2,3,4,7,8-PeCDF	0.240	2.5
1,2,3,4,7,8-HxCDF	0.262	2.5
1,2,3,6,7,8-HxCDF	0.261	2.5
2,3,4,6,7,8-HxCDF	0.158	2.5
1,2,3,7,8,9-HxCDF	0.276	2.5
1,2,3,4,6,7,8-HpCDF	0.219	2.5
1,2,3,4,7,8,9-HpCDF	0.315	2.5
OCDF	0.205	5.0

Units: pg/g
19-August-2012

** based on 10 grams of sample. DLs are sample and congener specific.*

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	Dilution
E	The amount detected is above the High Calibration Limit.
P	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
H	Recovery was outside laboratory acceptance limits.
I	Chemical Interference
J	The amount detected is below the Low Calibration Limit.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated detection limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that correspond to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	CA00413
Alabama Dept of Environmental Management	41610
Arizona Department Of Health Services	AZ0639
Arkansas Dept of Environmental Quality	11-035-0
California Dept of Health – NELAP	02102CA
Colorado Dept of Public Health & Environment	N/A
Connecticut Dept of Public Health	PH-0182
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Dept of Health	E87777
Indiana Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Louisiana Department of Health and Hospitals	LA110017
Maine Department of Health	2010021
Michigan Department of Natural Resources	9932
Mississippi Department of Health	N/A
Nevada Division of Environmental Protection	CA004132011-1
New Jersey Dept of Environmental Protection	CA003
New York Department of Health	11411
North Carolina Dept of Health & Human Services	06700
North Dakota Dept of Health	R-078
Oklahoma Dept of Environmental Quality	2011-120
Oregon Laboratory Accreditation Program	CA200001
Pennsylvania Dept of Environmental Protection	68-00490
South Carolina Dept of Health	87002001
Tennessee Dept of Environment and Conservation	TN02996
Texas Commission on Environmental Quality	T104704189-11-2
Utah Dept of Health	CA16400
Virginia Dept of General Services	00013
Washington Department of Ecology	C584
Wisconsin Dept of Natural Resources	998036160

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order #

2110013
1.9°C

PROJ. NO. B0009964.0002.70004		PROJECT NAME Tierra Phase I Removal														SDG NUMBER PRR1356	COC Number						
SAMPLERS:						Requested Analyses																	
SAMPLE ID	DATE	TIME	MATRIX	Composite/Grab	# Containers	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Remarks
PRR1SOLPC-04	11/29/2012	12:25	soil	Grab	2	X																	
PRR1SOLPC-07	11/29/2012	11:35	soil	Grab	3	X																	MS/MSD collected
Requested Analyses						Special Instructions/Comments:											<input type="checkbox"/> Special QA/QC Instructions						
1	Dioxins (PCDD/PCDFs)					1 extra 4 oz jar submitted in case of sample breakage.																	
2																							
3																							
						Laboratory Information and Receipt																	
4	Lab Name: Vista Analytical - El Dorado Hills, CA										<input type="checkbox"/> Cooler packed with ice					Sample Receipt:							
7	Shipping Tracking #										<input type="checkbox"/> Cooler custody seal intact					Condition/Cooler Temp:							
5	Specify Turnaround Requirements: 7 day TAT																						
6																							
7	Relinquished by:		DATE	TIME	Received by:	Relinquished by:		DATE	Received by:														
8	<i>[Signature]</i>		11/29/12	1630	<i>[Signature]</i>																		
9																							
10	Relinquished by:		DATE	TIME	Received by:	Relinquished by:		DATE	Received by:														
11																							
12																							
13	Relinquished by:		DATE	TIME	Received by:	Relinquished by:		DATE	Received by:														
14																							
15																							
16																							
17																							

SDG TRACKING LOG

SDG Number PRR1356

SDG Open Date 11/29/2012

Sample Matrix Soil

SDG Close Date 11/29/2012

Sample #	Sample ID	MS/MSD	Comments
1	PRR1SOLPC-04		Two 4 oz jars (1 extra in case of breakage)
2	PRR1SOLPC-07	X	Three 4 oz jars (1 extra in case of breakage)
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

Notes:

1. The SDG must not exceed 20 field samples. Trip or Field Blanks do not count towards the sample total. Check which of the 20 samples has been collected to include extra volume for MS/MSD and assigned as such.
2. 3x the weights listed should be collected for lab QC (i.e., MS/MSD/internal lab duplicate).
3. Field duplicate is a separate sample, not to be confused with "internal lab duplicate."

SAMPLE LOG-IN CHECKLIST



Vista Project #: 2110013 TAT 7

Samples Arrival:	Date/Time <u>11/30/12 0741</u>	Initials: <u>FEB</u>	Location: <u>WR-2</u>
			Shelf/Rack: <u>N/A</u>
Logged In:	Date/Time <u>11/30/12 0840</u>	Initials: <u>WBo/B</u>	Location: <u>WR-2</u>
			Shelf/Rack: <u>F3</u>
Delivered By:	<u>FedEx</u> UPS	On Trac	DHL Hand Delivered Other
Preservation:	<u>Ice</u> Blue Ice	Dry Ice	None
Temp °C	<u>1.9</u>	Time: <u>0743</u>	Thermometer ID: IR-1

	YES	NO	NA
Adequate Sample Volume Received?	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill	✓		
Trk # <u>7941 8059 0336</u>			
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓
Na ₂ S ₂ O ₃ Preservation Documented? <u>N/A</u>			
COC			Sample Container None
Shipping Container	<u>Vista</u>	Client	<u>Retain</u> Return Dispose

Comments:

From: (732) 575-4275
 Michael Pelenski
 ARCADIS
 117 Blanchard St.
 Newark, NJ 07105

Origin ID: VAKA



Ship Date: 29NOV12
 ActWgt: 20.0 LB
 CAD: 103886297/INET3300
 Dims: 24 X 13 X 14 IN

Delivery Address Bar Code



SHIP TO: (916) 673-1520
Martha Maier
Vista
1104 WINDFIELD WAY

BILL SENDER

Ref # B0009966.0002.70004
 Invoice #
 PO # B0009966.0002.70004
 Dept #

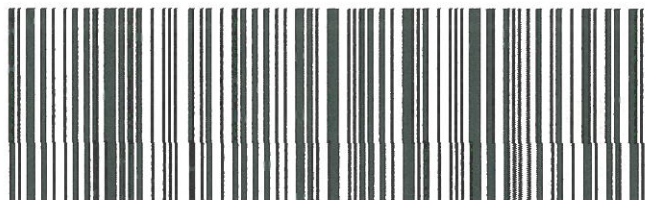
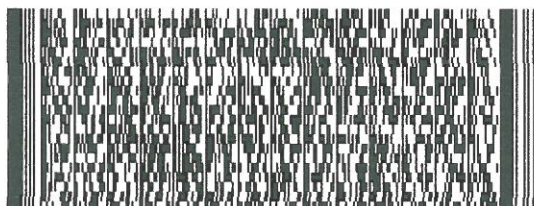
EL DORADO HILLS, CA 95762

FRI - 30 NOV A2
FIRST OVERNIGHT

TRK# 7941 8059 0336
 0201

95762
 CA-US
SMF

X1 MHRA



515G3/EE3B/AA44

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December 18, 2012

Vista Project I.D.: 2120040

Mr. Joseph Houser
ARCADIS U.S., Inc.
6723 Towpath Road
Syracuse, NY 13214-0066

Dear Mr. Houser,

Enclosed are the results for the three soil samples received at Vista Analytical Laboratory on December 14, 2012. These samples were analyzed on a rush turn-around time, under your Project Name: Tierra Phase I Removal. These samples were extracted and analyzed using EPA Method 1613B.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at Calvin@vista-analytical.com. Thank you for choosing Vista as part of your analytical support team.

Sincerely,

A handwritten signature in black ink, appearing to read "Calvin Tanaka".

Calvin Tanaka
Senior Scientist



Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAC for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Project No. 2120040, SDG: PRR1357
Case Narrative

Sample Condition on Receipt:

Three soil samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

EPA Method 1613

These samples were extracted and analyzed for tetra- through octa- chlorinated dioxins and furans by EPA Method 1613 using a ZB-5 GC column.

Holding Times

The method holding time criteria were met for these samples.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. Total HpCDD was detected in the Method Blank. The OPR recoveries were within the method acceptance criteria.

Labeled standard recoveries for all QC and field samples were within method acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2120040-01	PRR1SOLPC-08	10-Dec-12 12:45	14-Dec-12 07:39	Glass Jar, 120mL
		10-Dec-12 12:45	14-Dec-12 07:39	Glass Jar, 120mL
2120040-02	PRR1SOLPC-01	11-Dec-12 14:30	14-Dec-12 07:39	Glass Jar, 120mL
		11-Dec-12 14:30	14-Dec-12 07:39	Glass Jar, 120mL
2120040-03	PRR1SOLPC-02	12-Dec-12 15:15	14-Dec-12 07:39	Glass Jar, 120mL
		12-Dec-12 15:15	14-Dec-12 07:39	Glass Jar, 120mL

ANALYTICAL RESULTS

Sample ID: Method Blank					EPA Method 1613B			
Matrix:	Solid	QC Batch:	B2L0045	Lab Sample:	B2L0045-BLK1			
Sample Size:	10.0 g	Date Extracted:	14-Dec-2012 10:25	Date Analyzed:	17-Dec-12 20:07 Column: ZB-5 Analyst: MAS			
Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.101			IS 13C-2,3,7,8-TCDD	98.4	25 - 164	
1,2,3,7,8-PeCDD	ND	0.106			13C-1,2,3,7,8-PeCDD	102	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.0887			13C-1,2,3,4,7,8-HxCDD	83.6	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.109			13C-1,2,3,6,7,8-HxCDD	78.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.109			13C-1,2,3,7,8,9-HxCDD	81.1	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.119			13C-1,2,3,4,6,7,8-HpCDD	85.3	23 - 140	
OCDD	ND	0.428			13C-OCDD	88.0	17 - 157	
2,3,7,8-TCDF	ND	0.0429			13C-2,3,7,8-TCDF	101	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0697			13C-1,2,3,7,8-PeCDF	89.8	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0755			13C-2,3,4,7,8-PeCDF	87.8	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0576			13C-1,2,3,4,7,8-HxCDF	107	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.0666			13C-1,2,3,6,7,8-HxCDF	97.0	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.0763			13C-2,3,4,6,7,8-HxCDF	93.5	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.0976			13C-1,2,3,7,8,9-HxCDF	96.3	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.0545			13C-1,2,3,4,6,7,8-HpCDF	87.7	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.0672			13C-1,2,3,4,7,8,9-HpCDF	92.8	26 - 138	
OCDF	ND	0.141			13C-OCDF	96.0	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	102	35 - 197	
					Toxic Equivalent Quotient (TEQ) Data			
					TEQMinWHO2005Dioxin	0.00		
TOTALS								
Total TCDD	ND	0.101						
Total PeCDD	ND	0.106						
Total HxCDD	ND	0.102						
Total HpCDD	0.119							
Total TCDF	ND	0.0429						
Total PeCDF	ND	0.0725						
Total HxCDF	ND	0.0733						
Total HpCDF	ND	0.0598						

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL - Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.

Sample ID: OPR			EPA Method 1613B			
Matrix: Solid	QC Batch: B2L0045	Lab Sample: B2L0045-BS1	Date Analyzed: 17-Dec-12 16:55 Column: ZB-5 Analyst: MAS			
Sample Size: 10.0 g	Date Extracted: 14-Dec-2012 10:25					
Analyte	%R	Limits	Labeled Standard	%R	LCL-UCL	
2,3,7,8-TCDD	102	67 - 158	IS 13C-2,3,7,8-TCDD	88.1	20 - 175	
1,2,3,7,8-PeCDD	94.4	70 - 142	13C-1,2,3,7,8-PeCDD	93.5	21 - 227	
1,2,3,4,7,8-HxCDD	99.8	70 - 164	13C-1,2,3,4,7,8-HxCDD	87.4	21 - 193	
1,2,3,6,7,8-HxCDD	106	76 - 134	13C-1,2,3,6,7,8-HxCDD	81.2	25 - 163	
1,2,3,7,8,9-HxCDD	103	64 - 162	13C-1,2,3,7,8,9-HxCDD	86.6	21 - 193	
1,2,3,4,6,7,8-HpCDD	105	70 - 140	13C-1,2,3,4,6,7,8-HpCDD	82.3	26 - 166	
OCDD	101	78 - 144	13C-OCDD	87.2	13 - 199	
2,3,7,8-TCDF	98.7	75 - 158	13C-2,3,7,8-TCDF	86.7	22 - 152	
1,2,3,7,8-PeCDF	112	80 - 134	13C-1,2,3,7,8-PeCDF	91.4	21 - 192	
2,3,4,7,8-PeCDF	109	68 - 160	13C-2,3,4,7,8-PeCDF	100	13 - 328	
1,2,3,4,7,8-HxCDF	110	72 - 134	13C-1,2,3,4,7,8-HxCDF	97.4	19 - 202	
1,2,3,6,7,8-HxCDF	113	84 - 130	13C-1,2,3,6,7,8-HxCDF	88.8	21 - 159	
2,3,4,6,7,8-HxCDF	114	70 - 156	13C-2,3,4,6,7,8-HxCDF	87.8	22 - 176	
1,2,3,7,8,9-HxCDF	112	78 - 130	13C-1,2,3,7,8,9-HxCDF	90.2	17 - 205	
1,2,3,4,6,7,8-HpCDF	113	82 - 122	13C-1,2,3,4,6,7,8-HpCDF	86.9	21 - 158	
1,2,3,4,7,8,9-HpCDF	115	78 - 138	13C-1,2,3,4,7,8,9-HpCDF	88.2	20 - 186	
OCDF	111	63 - 170	13C-OCDF	84.6	13 - 199	
			CRS 37Cl-2,3,7,8-TCDD	85.4	31 - 191	

LCL-UCL - Lower control limit - upper control limit

Client Data		Sample Data		Laboratory Data			
Name:	ARCADIS U.S., Inc.	Matrix:	Soil	Lab Sample:	2120040-01	Date Received:	14-Dec-2012 7:39
Project:		Sample Size:	10.2 g	QC Batch:	B2L0045	Date Extracted:	14-Dec-2012 10:25
Date Collected:	10-Dec-2012 12:45	% Solids:	97.3	Date Analyzed :	17-Dec-12 22:32	Column:	ZB-5 Analyst: MAS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	0.435			J	IS 13C-2,3,7,8-TCDD	86.1	25 - 164	
1,2,3,7,8-PeCDD	0.179			J	13C-1,2,3,7,8-PeCDD	89.5	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.190			13C-1,2,3,4,7,8-HxCDD	66.5	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.235			13C-1,2,3,6,7,8-HxCDD	61.8	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.243			13C-1,2,3,7,8,9-HxCDD	61.8	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND		0.105		13C-1,2,3,4,6,7,8-HpCDD	76.8	23 - 140	
OCDD	0.914			J	13C-OCDD	85.0	17 - 157	
2,3,7,8-TCDF	ND	0.0413			13C-2,3,7,8-TCDF	81.0	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0773			13C-1,2,3,7,8-PeCDF	77.3	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0820			13C-2,3,4,7,8-PeCDF	78.7	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0529			13C-1,2,3,4,7,8-HxCDF	90.1	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.0570			13C-1,2,3,6,7,8-HxCDF	81.7	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.0697			13C-2,3,4,6,7,8-HxCDF	80.8	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.0841			13C-1,2,3,7,8,9-HxCDF	83.9	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.0852			13C-1,2,3,4,6,7,8-HpCDF	77.0	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.0714			13C-1,2,3,4,7,8,9-HpCDF	86.8	26 - 138	
OCDF	ND	0.226			13C-OCDF	92.9	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	88.5	35 - 197	

Toxic Equivalent Quotient (TEQ) Data

TEQMinWHO2005Dioxin	0.614
---------------------	-------

TOTALS			
Total TCDD	253		253
Total PeCDD	26.9		
Total HxCDD	0.359		0.778
Total HpCDD	0.174		0.278
Total TCDF	21.3		21.3
Total PeCDF	2.93		
Total HxCDF	0.0947		0.219
Total HpCDF	ND	0.138	

DL - Sample specific estimated detection limit
 EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
 The results are reported in dry weight.
 The sample size is reported in wet weight.

Client Data		Sample Data		Laboratory Data			
Name:	ARCADIS U.S., Inc.	Matrix:	Soil	Lab Sample:	2120040-02	Date Received:	14-Dec-2012 7:39
Project:		Sample Size:	10.3 g	QC Batch:	B2L0045	Date Extracted:	14-Dec-2012 10:25
Date Collected:	11-Dec-2012 14:30	% Solids:	97.1	Date Analyzed :	17-Dec-12 23:20	Column:	ZB-5 Analyst: MAS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.103			IS 13C-2,3,7,8-TCDD	76.1	25 - 164	
1,2,3,7,8-PeCDD	ND	0.0623			13C-1,2,3,7,8-PeCDD	83.3	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.0999			13C-1,2,3,4,7,8-HxCDD	57.0	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.111			13C-1,2,3,6,7,8-HxCDD	53.4	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.104			13C-1,2,3,7,8,9-HxCDD	58.6	32 - 141	
1,2,3,4,6,7,8-HpCDD	0.125			J	13C-1,2,3,4,6,7,8-HpCDD	78.9	23 - 140	
OCDD	0.632			J	13C-OCDD	72.2	17 - 157	
2,3,7,8-TCDF	ND	0.0496			13C-2,3,7,8-TCDF	73.4	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0605			13C-1,2,3,7,8-PeCDF	70.9	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0598			13C-2,3,4,7,8-PeCDF	66.0	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0365			13C-1,2,3,4,7,8-HxCDF	79.4	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.0369			13C-1,2,3,6,7,8-HxCDF	73.1	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.0434			13C-2,3,4,6,7,8-HxCDF	75.0	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.0534			13C-1,2,3,7,8,9-HxCDF	75.3	29 - 147	
1,2,3,4,6,7,8-HpCDF	0.0686			J	13C-1,2,3,4,6,7,8-HpCDF	75.8	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.0468			13C-1,2,3,4,7,8,9-HpCDF	81.9	26 - 138	
OCDF	0.0840			J	13C-OCDF	81.3	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	90.8	35 - 197	

Toxic Equivalent Quotient (TEQ) Data	
TEQMinWHO2005Dioxin	0.00215

TOTALS								
Total TCDD	ND	0.103						
Total PeCDD	ND	0.139						
Total HxCDD	ND	0.158						
Total HpCDD	0.254			B				
Total TCDF	ND	0.0496						
Total PeCDF	ND	0.0792						
Total HxCDF	ND	0.0661						
Total HpCDF	0.0686							

DL - Sample specific estimated detection limit
 EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
 The results are reported in dry weight.
 The sample size is reported in wet weight.

Sample ID: PRR1SOLPC-02

EPA Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	ARCADIS U.S., Inc.	Matrix:	Soil	Lab Sample:	2120040-03	Date Received:	14-Dec-2012 7:39
Project:		Sample Size:	10.0 g	QC Batch:	B2L0045	Date Extracted:	14-Dec-2012 10:25
Date Collected:	12-Dec-2012 15:15	% Solids:	99.2	Date Analyzed :	18-Dec-12 00:08	Column:	ZB-5 Analyst: MAS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.210			IS 13C-2,3,7,8-TCDD	90.7	25 - 164	
1,2,3,7,8-PeCDD	ND	0.0576			13C-1,2,3,7,8-PeCDD	97.3	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.155			13C-1,2,3,4,7,8-HxCDD	63.1	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.181			13C-1,2,3,6,7,8-HxCDD	54.2	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.172			13C-1,2,3,7,8,9-HxCDD	55.6	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND		0.0895		13C-1,2,3,4,6,7,8-HpCDD	76.5	23 - 140	
OCDD	0.718			J	13C-OCDD	76.6	17 - 157	
2,3,7,8-TCDF	ND	0.0408			13C-2,3,7,8-TCDF	92.1	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0562			13C-1,2,3,7,8-PeCDF	62.3	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0515			13C-2,3,4,7,8-PeCDF	73.0	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.0448			13C-1,2,3,4,7,8-HxCDF	90.6	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.0498			13C-1,2,3,6,7,8-HxCDF	84.5	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.0499			13C-2,3,4,6,7,8-HxCDF	86.3	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.0630			13C-1,2,3,7,8,9-HxCDF	87.8	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.0477			13C-1,2,3,4,6,7,8-HpCDF	78.0	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.0408			13C-1,2,3,4,7,8,9-HpCDF	80.7	26 - 138	
OCDF	ND	0.228			13C-OCDF	85.9	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	99.2	35 - 197	

Toxic Equivalent Quotient (TEQ) Data	
TEQMinWHO2005Dioxin	0.000215

TOTALS								
Total TCDD	ND	0.210						
Total PeCDD	ND	0.0576						
Total HxCDD	ND	0.328						
Total HpCDD	0.118		0.208	B				
Total TCDF	ND	0.0408						
Total PeCDF	ND	0.0960						
Total HxCDF	ND	0.0852						
Total HpCDF	ND	0.0562						

DL - Sample specific estimated detection limit
 EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
 The results are reported in dry weight.
 The sample size is reported in wet weight.

Method 1613 MDL Study Solid

Compound	MDL	RL
2,3,7,8-TCDD	0.0616	0.5
1,2,3,7,8-PeCDD	0.307	2.5
1,2,3,4,7,8-HxCDD	0.236	2.5
1,2,3,6,7,8-HxCDD	0.331	2.5
1,2,3,7,8,9-HxCDD	0.174	2.5
1,2,3,4,6,7,8-HpCDD	0.330	2.5
OCDD	0.726	5.0
2,3,7,8-TCDF	0.0737	0.5
1,2,3,7,8-PeCDF	0.232	2.5
2,3,4,7,8-PeCDF	0.240	2.5
1,2,3,4,7,8-HxCDF	0.262	2.5
1,2,3,6,7,8-HxCDF	0.261	2.5
2,3,4,6,7,8-HxCDF	0.158	2.5
1,2,3,7,8,9-HxCDF	0.276	2.5
1,2,3,4,6,7,8-HpCDF	0.219	2.5
1,2,3,4,7,8,9-HpCDF	0.315	2.5
OCDF	0.205	5.0

Units: pg/g
19-August-2012

** based on 10 grams of sample. DLs are sample and congener specific.*

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	Dilution
E	The amount detected is above the High Calibration Limit.
P	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
H	Recovery was outside laboratory acceptance limits.
I	Chemical Interference
J	The amount detected is below the Low Calibration Limit.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated detection limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that correspond to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	CA00413
Alabama Dept of Environmental Management	41610
Arizona Department Of Health Services	AZ0639
Arkansas Dept of Environmental Quality	11-035-0
California Dept of Health – NELAP	02102CA
Colorado Dept of Public Health & Environment	N/A
Connecticut Dept of Public Health	PH-0182
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Dept of Health	E87777
Indiana Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Louisiana Department of Health and Hospitals	LA110017
Maine Department of Health	2010021
Michigan Department of Natural Resources	9932
Mississippi Department of Health	N/A
Nevada Division of Environmental Protection	CA004132011-1
New Jersey Dept of Environmental Protection	CA003
New York Department of Health	11411
North Carolina Dept of Health & Human Services	06700
North Dakota Dept of Health	R-078
Oklahoma Dept of Environmental Quality	2011-120
Oregon Laboratory Accreditation Program	CA200001
Pennsylvania Dept of Environmental Protection	68-00490
South Carolina Dept of Health	87002001
Tennessee Dept of Environment and Conservation	TN02996
Texas Commission on Environmental Quality	T104704189-11-2
Utah Dept of Health	CA16400
Virginia Dept of General Services	00013
Washington Department of Ecology	C584
Wisconsin Dept of Natural Resources	998036160

SDG TRACKING LOG

SDG Number PRR1357

SDG Open Date 12/13/2012

Sample Matrix Soil

SDG Close Date 12/13/2012

Sample #	Sample ID	MS/MSD	Comments
1	PRR1SOLPC-08		Two 4 oz jars (1 extra in case of breakage) - 12/10
2	PRR1SOLPC-01		Two 4 oz jars (1 extra in case of breakage) - 12/11
3	PRR1SOLPC-02		Two 4 oz jars (1 extra in case of breakage) - 12/12
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

Notes:

1. The SDG must not exceed 20 field samples. Trip or Field Blanks do not count towards the sample total. Check which of the 20 samples has been collected to include extra volume for MS/MSD and assigned as such.
2. 3x the weights listed should be collected for lab QC (i.e., MS/MSD/internal lab duplicate).
3. Field duplicate is a separate sample, not to be confused with "internal lab duplicate."

SAMPLE LOG-IN CHECKLIST



Vista Project #: 2120040 TAT 7

Samples Arrival:	Date/Time 12/14/12 0739	Initials: UBBB	Location: WR-2
			Shelf/Rack: N/A
Logged In:	Date/Time 12/14/12 0816	Initials: UBBB	Location: WR-2
			Shelf/Rack: F3
Delivered By:	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> On Trac
		<input type="checkbox"/> DHL	<input type="checkbox"/> Hand Delivered
	<input type="checkbox"/> Other		
Preservation:	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
		<input type="checkbox"/> None	
Temp °C	0°C	Time:	0741
		Thermometer ID:	IR-1

	YES	NO	NA
Adequate Sample Volume Received? A & B Containers	✓		
Holding Time Acceptable?	✓		
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Shipping Documentation Present?	✓		
Airbill Trk # 7942 9789 7999	✓		
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Chain of Custody / Sample Documentation Present?	✓		
COC Anomaly/Sample Acceptance Form completed?		✓	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓
Na ₂ S ₂ O ₃ Preservation Documented? N/A		<input type="checkbox"/> COC	<input type="checkbox"/> Sample Container
		<input type="checkbox"/> None	
Shipping Container	<input checked="" type="checkbox"/> Vista	<input type="checkbox"/> Client	<input checked="" type="checkbox"/> Retain
		<input type="checkbox"/> Return	<input type="checkbox"/> Dispose

Comments:

From: (732) 575-4275
Michael Pelenski
ARCADIS
117 Blanchard St
Newark, NJ 07105

Origin ID: VAKA



Ship Date: 13DEC12
ActWgt: 20.0 LB
CAD: 103886297/NET3300

Dims: 24 X 13 X 14 IN

Delivery Address Bar Code



Ref # B0009966.0002.70004
Invoice #
PO # B0009966.0002.70004
Dept #

SHIP TO: (916) 673-1520

BILL SENDER

Martha Maier
Vista
1104 WINDFIELD WAY

EL DORADO HILLS, CA 95762

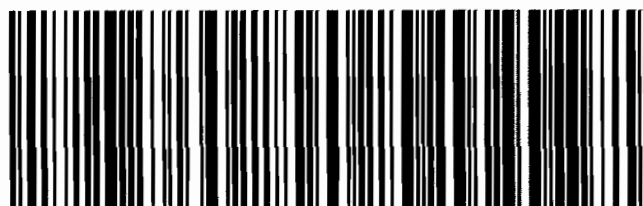
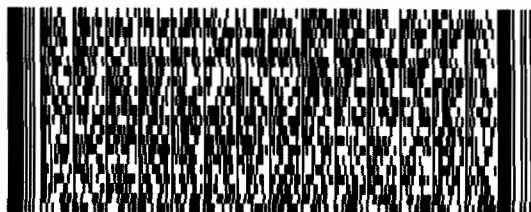
FRI - 14 DEC A2
FIRST OVERNIGHT

TRK# 7942 9789 7999

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95762
CA-US
SMF

X1 MHRA



515G1/B2B3/AA44

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December 31, 2012

Vista Project I.D.: 2120056

Mr. Joseph Houser
ARCADIS U.S., Inc.
6723 Towpath Road
Syracuse, NY 13214-0066

Dear Mr. Houser,

Enclosed are the results for the samples received at Vista Analytical Laboratory on December 20, 2012. These samples were analyzed on a rush turn-around time, under your Project Name: Tierra Phase I Removal. The work was authorized under your Purchase Order No. B0009964.0002.70004. These samples were extracted and analyzed using EPA Method 1613B.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at Calvin@vista-analytical.com.

Thank you for choosing Vista as part of your analytical support team.

Sincerely,



Calvin Tanaka
Senior Scientist



Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAC for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.

Vista Project No. 2120056
Case Narrative

Sample Condition on Receipt:

Six soil samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

EPA Method 1613

These samples were extracted and analyzed for tetra through octa chlorinated dioxins and furans by EPA Method 1613 using a ZB-5MS GC column.

Holding Times

The method holding time criteria were met for these samples.

Quality Control

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Method Blank and Ongoing Precision and Recovery (OPR) sample were extracted and analyzed with the preparation batch. OCDD and OCDF were detected in the Method Blank. The OPR recoveries were within the method acceptance criteria.

Labeled standard recoveries for all QC and field samples were within method acceptance criteria.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2120056-01	PRR1SOLPC-11	14-Dec-12 11:30	20-Dec-12 10:08	Glass Jar, 120mL
		14-Dec-12 11:30	20-Dec-12 10:08	Glass Jar, 120mL
2120056-02	PRR1SOLPC-10	14-Dec-12 12:10	20-Dec-12 10:08	Glass Jar, 120mL
		14-Dec-12 12:10	20-Dec-12 10:08	Glass Jar, 120mL
2120056-03	PRR1SOLPC-05	14-Dec-12 12:45	20-Dec-12 10:08	Glass Jar, 120mL
		14-Dec-12 12:45	20-Dec-12 10:08	Glass Jar, 120mL
2120056-04	PRR1SOLPC-06	14-Dec-12 16:30	20-Dec-12 10:08	Glass Jar, 120mL
		14-Dec-12 16:30	20-Dec-12 10:08	Glass Jar, 120mL
2120056-05	PRR1SOLPC-09	18-Dec-12 14:45	20-Dec-12 10:08	Glass Jar, 120mL
		18-Dec-12 14:45	20-Dec-12 10:08	Glass Jar, 120mL
2120056-06	PRR1SOLPC-03	18-Dec-12 16:00	20-Dec-12 10:08	Glass Jar, 120mL
		18-Dec-12 16:00	20-Dec-12 10:08	Glass Jar, 120mL

ANALYTICAL RESULTS

Sample ID: Method Blank					EPA Method 1613B			
Matrix:	Solid	QC Batch:	B2L0084	Lab Sample:	B2L0084-BLK1			
Sample Size:	10.0 g	Date Extracted:	20-Dec-2012 15:52	Date Analyzed:	22-Dec-12 22:36 Column: ZB-5 Analyst: MAS			
Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.0610			IS 13C-2,3,7,8-TCDD	79.0	25 - 164	
1,2,3,7,8-PeCDD	ND	0.117			13C-1,2,3,7,8-PeCDD	81.1	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.155			13C-1,2,3,4,7,8-HxCDD	66.4	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.174			13C-1,2,3,6,7,8-HxCDD	74.6	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.190			13C-1,2,3,7,8,9-HxCDD	67.8	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.429			13C-1,2,3,4,6,7,8-HpCDD	59.8	23 - 140	
OCDD	1.78			J	13C-OCDD	46.6	17 - 157	
2,3,7,8-TCDF	ND	0.0771			13C-2,3,7,8-TCDF	82.6	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0737			13C-1,2,3,7,8-PeCDF	73.5	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0717			13C-2,3,4,7,8-PeCDF	86.4	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.124			13C-1,2,3,4,7,8-HxCDF	75.1	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.121			13C-1,2,3,6,7,8-HxCDF	78.6	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.143			13C-2,3,4,6,7,8-HxCDF	75.6	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.203			13C-1,2,3,7,8,9-HxCDF	69.1	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND	0.283			13C-1,2,3,4,6,7,8-HpCDF	66.5	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.412			13C-1,2,3,4,7,8,9-HpCDF	55.0	26 - 138	
OCDF	0.833			J	13C-OCDF	50.6	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	81.8	35 - 197	
					Toxic Equivalent Quotient (TEQ) Data			
					TEQMinWHO2005Dioxin	0.000784		
TOTALS								
Total TCDD	ND	0.0610						
Total PeCDD	ND	0.117						
Total HxCDD	ND	0.190						
Total HpCDD	ND	0.429						
Total TCDF	ND	0.0771						
Total PeCDF	ND	0.0737						
Total HxCDF	ND	0.203						
Total HpCDF	ND	0.412						

DL - Sample specific estimated detection limit
EMPC - Estimated maximum possible concentration

LCL-UCL - Lower control limit - upper control limit
The results are reported in dry weight.
The sample size is reported in wet weight.

Sample ID: OPR**EPA Method 1613B**

Matrix: Solid	QC Batch: B2L0084	Lab Sample: B2L0084-BS1
Sample Size: 10.0 g	Date Extracted: 20-Dec-2012 15:52	Date Analyzed: 22-Dec-12 19:17 Column: ZB-5 Analyst: MAS

Analyte	%R	Limits	Labeled Standard	%R	LCL-UCL
2,3,7,8-TCDD	102	67 - 158	IS 13C-2,3,7,8-TCDD	72.0	20 - 175
1,2,3,7,8-PeCDD	115	70 - 142	13C-1,2,3,7,8-PeCDD	73.3	21 - 227
1,2,3,4,7,8-HxCDD	109	70 - 164	13C-1,2,3,4,7,8-HxCDD	61.1	21 - 193
1,2,3,6,7,8-HxCDD	115	76 - 134	13C-1,2,3,6,7,8-HxCDD	67.1	25 - 163
1,2,3,7,8,9-HxCDD	110	64 - 162	13C-1,2,3,7,8,9-HxCDD	62.3	21 - 193
1,2,3,4,6,7,8-HpCDD	110	70 - 140	13C-1,2,3,4,6,7,8-HpCDD	54.0	26 - 166
OCDD	113	78 - 144	13C-OCDD	43.9	13 - 199
2,3,7,8-TCDF	107	75 - 158	13C-2,3,7,8-TCDF	70.5	22 - 152
1,2,3,7,8-PeCDF	103	80 - 134	13C-1,2,3,7,8-PeCDF	67.2	21 - 192
2,3,4,7,8-PeCDF	106	68 - 160	13C-2,3,4,7,8-PeCDF	77.9	13 - 328
1,2,3,4,7,8-HxCDF	101	72 - 134	13C-1,2,3,4,7,8-HxCDF	67.3	19 - 202
1,2,3,6,7,8-HxCDF	108	84 - 130	13C-1,2,3,6,7,8-HxCDF	70.2	21 - 159
2,3,4,6,7,8-HxCDF	99.5	70 - 156	13C-2,3,4,6,7,8-HxCDF	68.7	22 - 176
1,2,3,7,8,9-HxCDF	96.7	78 - 130	13C-1,2,3,7,8,9-HxCDF	64.1	17 - 205
1,2,3,4,6,7,8-HpCDF	101	82 - 122	13C-1,2,3,4,6,7,8-HpCDF	59.3	21 - 158
1,2,3,4,7,8,9-HpCDF	99.4	78 - 138	13C-1,2,3,4,7,8,9-HpCDF	50.1	20 - 186
OCDF	99.1	63 - 170	13C-OCDF	50.2	13 - 199
			CRS 37Cl-2,3,7,8-TCDD	71.7	31 - 191

LCL-UCL - Lower control limit - upper control limit

Client Data		Sample Data		Laboratory Data			
Name:	ARCADIS U.S., Inc.	Matrix:	Soil	Lab Sample:	2120056-01	Date Received:	20-Dec-2012 10:08
Project:	Tierra Phase I Removal	Sample Size:	10.3 g	QC Batch:	B2L0084	Date Extracted:	20-Dec-2012 15:52
Date Collected:	14-Dec-2012 11:30	% Solids:	98.2	Date Analyzed :	22-Dec-12 23:25	Column:	ZB-5 Analyst: MAS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.112			IS 13C-2,3,7,8-TCDD	71.5	25 - 164	
1,2,3,7,8-PeCDD	ND	0.138			13C-1,2,3,7,8-PeCDD	89.6	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.150			13C-1,2,3,4,7,8-HxCDD	68.3	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.175			13C-1,2,3,6,7,8-HxCDD	78.9	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.187			13C-1,2,3,7,8,9-HxCDD	73.8	32 - 141	
1,2,3,4,6,7,8-HpCDD	0.778			J	13C-1,2,3,4,6,7,8-HpCDD	65.9	23 - 140	
OCDD	5.26			B	13C-OCDD	52.0	17 - 157	
2,3,7,8-TCDF	ND	0.133			13C-2,3,7,8-TCDF	68.1	24 - 169	
1,2,3,7,8-PeCDF	ND	0.105			13C-1,2,3,7,8-PeCDF	78.6	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0941			13C-2,3,4,7,8-PeCDF	94.9	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.146			13C-1,2,3,4,7,8-HxCDF	75.5	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.147			13C-1,2,3,6,7,8-HxCDF	76.9	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.167			13C-2,3,4,6,7,8-HxCDF	79.5	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.246			13C-1,2,3,7,8,9-HxCDF	73.5	29 - 147	
1,2,3,4,6,7,8-HpCDF	0.864			J	13C-1,2,3,4,6,7,8-HpCDF	73.2	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.445			13C-1,2,3,4,7,8,9-HpCDF	60.4	26 - 138	
OCDF	1.84			J, B	13C-OCDF	56.9	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	70.1	35 - 197	

Toxic Equivalent Quotient (TEQ) Data	
TEQMinWHO2005Dioxin	0.0186

TOTALS		
Total TCDD	ND	0.112
Total PeCDD	ND	0.138
Total HxCDD	ND	0.187
Total HpCDD	1.55	
Total TCDF	ND	0.133
Total PeCDF	ND	0.105
Total HxCDF	ND	0.246
Total HpCDF	0.864	

DL - Sample specific estimated detection limit
 EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
 The results are reported in dry weight.
 The sample size is reported in wet weight.

Sample ID: PRR1SOLPC-10

EPA Method 1613B

Client Data		Sample Data		Laboratory Data			
Name:	ARCADIS U.S., Inc.	Matrix:	Soil	Lab Sample:	2120056-02	Date Received:	20-Dec-2012 10:08
Project:	Tierra Phase I Removal	Sample Size:	10.1 g	QC Batch:	B2L0084	Date Extracted:	20-Dec-2012 15:52
Date Collected:	14-Dec-2012 12:10	% Solids:	98.9	Date Analyzed :	23-Dec-12 00:15	Column:	ZB-5 Analyst: MAS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.0767			IS 13C-2,3,7,8-TCDD	88.1	25 - 164	
1,2,3,7,8-PeCDD	ND	0.108			13C-1,2,3,7,8-PeCDD	89.8	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.134			13C-1,2,3,4,7,8-HxCDD	72.4	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.154			13C-1,2,3,6,7,8-HxCDD	81.5	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.173			13C-1,2,3,7,8,9-HxCDD	71.2	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.307			13C-1,2,3,4,6,7,8-HpCDD	66.1	23 - 140	
OCDD	3.07			J, B	13C-OCDD	50.6	17 - 157	
2,3,7,8-TCDF	ND	0.0795			13C-2,3,7,8-TCDF	90.6	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0841			13C-1,2,3,7,8-PeCDF	80.6	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0825			13C-2,3,4,7,8-PeCDF	94.5	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.131			13C-1,2,3,4,7,8-HxCDF	78.4	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.130			13C-1,2,3,6,7,8-HxCDF	80.4	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.153			13C-2,3,4,6,7,8-HxCDF	81.2	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.214			13C-1,2,3,7,8,9-HxCDF	76.2	29 - 147	
1,2,3,4,6,7,8-HpCDF	0.574			J	13C-1,2,3,4,6,7,8-HpCDF	71.0	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.395			13C-1,2,3,4,7,8,9-HpCDF	58.5	26 - 138	
OCDF	1.26			J, B	13C-OCDF	56.6	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	82.6	35 - 197	

Toxic Equivalent Quotient (TEQ) Data	
TEQMinWHO2005Dioxin	0.00704

TOTALS		
Total TCDD	ND	0.0767
Total PeCDD	ND	0.108
Total HxCDD	ND	0.173
Total HpCDD	0.375	
Total TCDF	ND	0.0795
Total PeCDF	ND	0.0841
Total HxCDF	ND	0.214
Total HpCDF	1.02	

DL - Sample specific estimated detection limit
 EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
 The results are reported in dry weight.
 The sample size is reported in wet weight.

Client Data		Sample Data		Laboratory Data			
Name:	ARCADIS U.S., Inc.	Matrix:	Soil	Lab Sample:	2120056-03	Date Received:	20-Dec-2012 10:08
Project:	Tierra Phase I Removal	Sample Size:	10.2 g	QC Batch:	B2L0084	Date Extracted:	20-Dec-2012 15:52
Date Collected:	14-Dec-2012 12:45	% Solids:	98.5	Date Analyzed :	23-Dec-12 01:05	Column:	ZB-5 Analyst: MAS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.0743			IS 13C-2,3,7,8-TCDD	72.5	25 - 164	
1,2,3,7,8-PeCDD	ND	0.119			13C-1,2,3,7,8-PeCDD	82.2	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.158			13C-1,2,3,4,7,8-HxCDD	62.3	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.175			13C-1,2,3,6,7,8-HxCDD	71.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.185			13C-1,2,3,7,8,9-HxCDD	64.8	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.366			13C-1,2,3,4,6,7,8-HpCDD	59.2	23 - 140	
OCDD	2.77			J, B	13C-OCDD	46.6	17 - 157	
2,3,7,8-TCDF	ND	0.0867			13C-2,3,7,8-TCDF	78.9	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0896			13C-1,2,3,7,8-PeCDF	74.5	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0877			13C-2,3,4,7,8-PeCDF	89.6	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.136			13C-1,2,3,4,7,8-HxCDF	69.9	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.129			13C-1,2,3,6,7,8-HxCDF	74.3	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.147			13C-2,3,4,6,7,8-HxCDF	71.4	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.206			13C-1,2,3,7,8,9-HxCDF	67.3	29 - 147	
1,2,3,4,6,7,8-HpCDF	0.610			J	13C-1,2,3,4,6,7,8-HpCDF	63.8	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.427			13C-1,2,3,4,7,8,9-HpCDF	53.6	26 - 138	
OCDF	0.965			J, B	13C-OCDF	52.4	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	69.4	35 - 197	

Toxic Equivalent Quotient (TEQ) Data	
TEQMinWHO2005Dioxin	0.00722

TOTALS		
Total TCDD	ND	0.0743
Total PeCDD	ND	0.119
Total HxCDD	ND	0.185
Total HpCDD	ND	0.366
Total TCDF	ND	0.0867
Total PeCDF	ND	0.0896
Total HxCDF	ND	0.206
Total HpCDF	0.610	

DL - Sample specific estimated detection limit
 EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
 The results are reported in dry weight.
 The sample size is reported in wet weight.

Client Data		Sample Data		Laboratory Data			
Name:	ARCADIS U.S., Inc.	Matrix:	Soil	Lab Sample:	2120056-04	Date Received:	20-Dec-2012 10:08
Project:	Tierra Phase I Removal	Sample Size:	10.5 g	QC Batch:	B2L0084	Date Extracted:	20-Dec-2012 15:52
Date Collected:	14-Dec-2012 16:30	% Solids:	96.8	Date Analyzed :	23-Dec-12 01:55	Column:	ZB-5 Analyst: MAS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	0.765				IS 13C-2,3,7,8-TCDD	91.5	25 - 164	
1,2,3,7,8-PeCDD	ND	0.151			13C-1,2,3,7,8-PeCDD	101	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.163			13C-1,2,3,4,7,8-HxCDD	73.1	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.182			13C-1,2,3,6,7,8-HxCDD	85.9	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.196			13C-1,2,3,7,8,9-HxCDD	79.5	32 - 141	
1,2,3,4,6,7,8-HpCDD	0.853			J	13C-1,2,3,4,6,7,8-HpCDD	70.3	23 - 140	
OCDD	6.16			B	13C-OCDD	57.6	17 - 157	
2,3,7,8-TCDF	0.250			J	13C-2,3,7,8-TCDF	90.6	24 - 169	
1,2,3,7,8-PeCDF	0.126			J	13C-1,2,3,7,8-PeCDF	91.6	24 - 185	
2,3,4,7,8-PeCDF	0.957			J	13C-2,3,4,7,8-PeCDF	108	21 - 178	
1,2,3,4,7,8-HxCDF	1.07			J	13C-1,2,3,4,7,8-HxCDF	82.5	26 - 152	
1,2,3,6,7,8-HxCDF	0.326			J	13C-1,2,3,6,7,8-HxCDF	87.3	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.155			13C-2,3,4,6,7,8-HxCDF	84.5	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.208			13C-1,2,3,7,8,9-HxCDF	80.7	29 - 147	
1,2,3,4,6,7,8-HpCDF	1.57			J	13C-1,2,3,4,6,7,8-HpCDF	77.3	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.407			13C-1,2,3,4,7,8,9-HpCDF	66.7	26 - 138	
OCDF	4.67			J, B	13C-OCDF	62.2	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	95.5	35 - 197	

Toxic Equivalent Quotient (TEQ) Data	
TEQMinWHO2005Dioxin	1.25

TOTALS			
Total TCDD	2.36		2.79
Total PeCDD	0.338		
Total HxCDD	ND	0.196	
Total HpCDD	1.60		
Total TCDF	11.5		14.7
Total PeCDF	8.66		9.30
Total HxCDF	2.72		
Total HpCDF	1.94		

DL - Sample specific estimated detection limit
 EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
 The results are reported in dry weight.
 The sample size is reported in wet weight.

Client Data		Sample Data		Laboratory Data			
Name:	ARCADIS U.S., Inc.	Matrix:	Soil	Lab Sample:	2120056-05	Date Received:	20-Dec-2012 10:08
Project:	Tierra Phase I Removal	Sample Size:	10.4 g	QC Batch:	B2L0084	Date Extracted:	20-Dec-2012 15:52
Date Collected:	18-Dec-2012 14:45	% Solids:	95.8	Date Analyzed :	23-Dec-12 02:44	Column:	ZB-5 Analyst: MAS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	0.132			J	IS 13C-2,3,7,8-TCDD	82.0	25 - 164	
1,2,3,7,8-PeCDD	ND	0.116			13C-1,2,3,7,8-PeCDD	89.0	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.189			13C-1,2,3,4,7,8-HxCDD	68.0	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.206			13C-1,2,3,6,7,8-HxCDD	81.9	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.231			13C-1,2,3,7,8,9-HxCDD	72.6	32 - 141	
1,2,3,4,6,7,8-HpCDD	0.728			J	13C-1,2,3,4,6,7,8-HpCDD	64.6	23 - 140	
OCDD	4.51			J, B	13C-OCDD	52.3	17 - 157	
2,3,7,8-TCDF	0.204			J	13C-2,3,7,8-TCDF	84.1	24 - 169	
1,2,3,7,8-PeCDF	ND	0.116			13C-1,2,3,7,8-PeCDF	80.4	24 - 185	
2,3,4,7,8-PeCDF	1.18			J	13C-2,3,4,7,8-PeCDF	94.3	21 - 178	
1,2,3,4,7,8-HxCDF	0.917			J	13C-1,2,3,4,7,8-HxCDF	75.6	26 - 152	
1,2,3,6,7,8-HxCDF	0.345			J	13C-1,2,3,6,7,8-HxCDF	80.5	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.134			13C-2,3,4,6,7,8-HxCDF	80.8	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.180			13C-1,2,3,7,8,9-HxCDF	74.9	29 - 147	
1,2,3,4,6,7,8-HpCDF	0.629			J	13C-1,2,3,4,6,7,8-HpCDF	71.0	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.356			13C-1,2,3,4,7,8,9-HpCDF	57.5	26 - 138	
OCDF	1.17			J, B	13C-OCDF	54.7	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	79.7	35 - 197	

Toxic Equivalent Quotient (TEQ) Data	
TEQMinWHO2005Dioxin	0.648

TOTALS		
Total TCDD	11.2	
Total PeCDD	1.16	1.46
Total HxCDD	0.399	0.670
Total HpCDD	1.37	
Total TCDF	14.7	15.7
Total PeCDF	10.7	
Total HxCDF	2.61	
Total HpCDF	1.01	

DL - Sample specific estimated detection limit
 EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit
 The results are reported in dry weight.
 The sample size is reported in wet weight.

Client Data		Sample Data		Laboratory Data			
Name:	ARCADIS U.S., Inc.	Matrix:	Soil	Lab Sample:	2120056-06	Date Received:	20-Dec-2012 10:08
Project:	Tierra Phase I Removal	Sample Size:	10.5 g	QC Batch:	B2L0084	Date Extracted:	20-Dec-2012 15:52
Date Collected:	18-Dec-2012 16:00	% Solids:	96.5	Date Analyzed :	23-Dec-12 03:34	Column:	ZB-5 Analyst: MAS

Analyte	Conc. (pg/g)	DL	EMPC	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
2,3,7,8-TCDD	ND	0.0895			IS 13C-2,3,7,8-TCDD	71.2	25 - 164	
1,2,3,7,8-PeCDD	ND	0.147			13C-1,2,3,7,8-PeCDD	77.8	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.176			13C-1,2,3,4,7,8-HxCDD	59.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.191			13C-1,2,3,6,7,8-HxCDD	71.0	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.222			13C-1,2,3,7,8,9-HxCDD	65.0	32 - 141	
1,2,3,4,6,7,8-HpCDD	ND	0.377			13C-1,2,3,4,6,7,8-HpCDD	58.6	23 - 140	
OCDD	2.24			J, B	13C-OCDD	45.9	17 - 157	
2,3,7,8-TCDF	ND	0.0892			13C-2,3,7,8-TCDF	71.6	24 - 169	
1,2,3,7,8-PeCDF	ND	0.0786			13C-1,2,3,7,8-PeCDF	75.0	24 - 185	
2,3,4,7,8-PeCDF	ND	0.0759			13C-2,3,4,7,8-PeCDF	87.4	21 - 178	
1,2,3,4,7,8-HxCDF	ND	0.132			13C-1,2,3,4,7,8-HxCDF	68.3	26 - 152	
1,2,3,6,7,8-HxCDF	ND	0.123			13C-1,2,3,6,7,8-HxCDF	71.9	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.153			13C-2,3,4,6,7,8-HxCDF	69.7	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.217			13C-1,2,3,7,8,9-HxCDF	65.9	29 - 147	
1,2,3,4,6,7,8-HpCDF	ND		0.454		13C-1,2,3,4,6,7,8-HpCDF	62.7	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.443			13C-1,2,3,4,7,8,9-HpCDF	53.6	26 - 138	
OCDF	0.937			J, B	13C-OCDF	49.1	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	72.8	35 - 197	

Toxic Equivalent Quotient (TEQ) Data

TEQMinWHO2005Dioxin 0.000953

TOTALS			
Total TCDD	1.75		
Total PeCDD	ND	0.147	
Total HxCDD	ND	0.222	
Total HpCDD	0.373		
Total TCDF	ND	0.0892	
Total PeCDF	ND	0.0786	
Total HxCDF	ND	0.217	
Total HpCDF	ND		0.454

DL - Sample specific estimated detection limit

EMPC - Estimated maximum possible concentration

LCL-UCL- Lower control limit - upper control limit

The results are reported in dry weight.

The sample size is reported in wet weight.

Method 1613 MDL Study Solid

Compound	MDL	RL
2,3,7,8-TCDD	0.0616	0.5
1,2,3,7,8-PeCDD	0.307	2.5
1,2,3,4,7,8-HxCDD	0.236	2.5
1,2,3,6,7,8-HxCDD	0.331	2.5
1,2,3,7,8,9-HxCDD	0.174	2.5
1,2,3,4,6,7,8-HpCDD	0.330	2.5
OCDD	0.726	5.0
2,3,7,8-TCDF	0.0737	0.5
1,2,3,7,8-PeCDF	0.232	2.5
2,3,4,7,8-PeCDF	0.240	2.5
1,2,3,4,7,8-HxCDF	0.262	2.5
1,2,3,6,7,8-HxCDF	0.261	2.5
2,3,4,6,7,8-HxCDF	0.158	2.5
1,2,3,7,8,9-HxCDF	0.276	2.5
1,2,3,4,6,7,8-HpCDF	0.219	2.5
1,2,3,4,7,8,9-HpCDF	0.315	2.5
OCDF	0.205	5.0

Units: pg/g
19-August-2012

** based on 10 grams of sample. DLs are sample and congener specific.*

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	Dilution
E	The amount detected is above the High Calibration Limit.
P	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
H	Recovery was outside laboratory acceptance limits.
I	Chemical Interference
J	The amount detected is below the Low Calibration Limit.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated detection limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that correspond to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

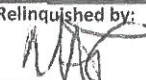

CERTIFICATIONS

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	CA00413
Alabama Dept of Environmental Management	41610
Arizona Department Of Health Services	AZ0639
Arkansas Dept of Environmental Quality	11-035-0
California Dept of Health – NELAP	02102CA
Colorado Dept of Public Health & Environment	N/A
Connecticut Dept of Public Health	PH-0182
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Dept of Health	E87777
Indiana Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Louisiana Department of Health and Hospitals	LA110017
Maine Department of Health	2010021
Michigan Department of Natural Resources	9932
Mississippi Department of Health	N/A
Nevada Division of Environmental Protection	CA004132011-1
New Jersey Dept of Environmental Protection	CA003
New York Department of Health	11411
North Carolina Dept of Health & Human Services	06700
North Dakota Dept of Health	R-078
Oklahoma Dept of Environmental Quality	2011-120
Oregon Laboratory Accreditation Program	CA200001
Pennsylvania Dept of Environmental Protection	68-00490
South Carolina Dept of Health	87002001
Tennessee Dept of Environment and Conservation	TN02996
Texas Commission on Environmental Quality	T104704189-11-2
Utah Dept of Health	CA16400
Virginia Dept of General Services	00013
Washington Department of Ecology	C584
Wisconsin Dept of Natural Resources	998036160

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Lab Work Order #

2120056

PROJ. NO. B0009964.0002.70004						PROJECT NAME Tierra Phase I Removal																	SDG NUMBER PRR1358		COC Number					
SAMPLERS: MAP, CSB						Requested Analyses																								
SAMPLE ID	DATE	TIME	MATRIX	Composite/Grab	# Containers	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Remarks							
PRR1SOLPC-11	12/14/2012	11:30	soil	Grab	2	X																								
PRR1SOLPC-10	12/14/2012	12:10	soil	Grab	2	X																								
PRR1SOLPC-05	12/14/2012	12:45	soil	Grab	2	X																								
PRR1SOLPC-06	12/14/2012	16:30	soil	Grab	2	X																								
PRR1SOLPC-09	12/18/2012	14:45	soil	Grab	2	X																								
PRR1SOLPC-03	12/18/2012	16:00	soil	Grab	2	X																								
Requested Analyses						Special Instructions/Comments:											<input type="checkbox"/> Special QA/QC Instructions													
1 Dioxins (PCDD/PCDFs)						1 extra 4 oz jar submitted in case of sample breakage.																								
2																														
3																														
4						Laboratory Information and Receipt																								
7						Lab Name: Vista Analytical - El Dorado Hills, CA						<input type="checkbox"/> Cooler packed with ice					Sample Receipt:													
5						Shipping Tracking #						<input type="checkbox"/> Cooler custody seal intact					Condition/Cooler Temp:													
6						Specify Turnaround Requirements: 7 day TAT																								
7			Relinquished by:			DATE		TIME		Received by:			Relinquished by:			DATE		Received by:												
8						12-19-12		1300																						
9																														
10			Relinquished by:			DATE		TIME		Received by:			Relinquished by:			DATE		Received by:												
11																														
12																														
13			Relinquished by:			DATE		TIME		Received by:			Relinquished by:			DATE		Received by:												
14																														
15																														
16																														
17																														

SDG TRACKING LOG

SDG Number PRR1358

SDG Open Date 12/14/2012

Sample Matrix Soil

SDG Close Date 12/18/2012

Sample #	Sample ID	MS/MSD	Comments
1	PRR1SOLPC-11		Two 4 oz jars (1 extra in case of breakage) - 12/14
2	PRR1SOLPC-10		Two 4 oz jars (1 extra in case of breakage) - 12/14
3	PRR1SOLPC-05		Two 4 oz jars (1 extra in case of breakage) - 12/14
4	PRR1SOLPC-06		Two 4 oz jars (1 extra in case of breakage) - 12/14
5	PRR1SOLPC-09		Two 4 oz jars (1 extra in case of breakage) - 12/18
6	PRR1SOLPC-03		Two 4 oz jars (1 extra in case of breakage) - 12/18
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

Notes:

1. The SDG must not exceed 20 field samples. Trip or Field Blanks do not count towards the sample total. Check which of the 20 samples has been collected to include extra volume for MS/MSD and assigned as such.
2. 3x the weights listed should be collected for lab QC (i.e., MS/MSD/internal lab duplicate).
3. Field duplicate is a separate sample, not to be confused with "internal lab duplicate."

SAMPLE LOG-IN CHECKLIST



Vista Project #: 2120056 TAT 5 business days

Samples Arrival:	Date/Time 12/20/12 1008	Initials: UPRB	Location: WR-2
			Shelf/Rack: <u>N/A</u>
Logged In:	Date/Time 12/20/12 1019	Initials: UPRB	Location: WR-2
			Shelf/Rack: <u>F3</u>
Delivered By:	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> On Trac
		<input type="checkbox"/> DHL	<input type="checkbox"/> Hand Delivered
Preservation:	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
		<input type="checkbox"/> None	
Temp °C	<u>0.6°C</u>	Time:	<u>1010</u>
			Thermometer ID: IR-1

	YES	NO	NA
Adequate Sample Volume Received? <u>A & B jars</u>	<input checked="" type="checkbox"/>		
Holding Time Acceptable?	<input checked="" type="checkbox"/>		
Shipping Container(s) Intact?	<input checked="" type="checkbox"/>		
Shipping Custody Seals Intact?	<input checked="" type="checkbox"/>		
Shipping Documentation Present?	<input checked="" type="checkbox"/>		
Airbill			
Trk # <u>7943 4624 1351</u>	<input checked="" type="checkbox"/>		
Sample Container Intact?	<input checked="" type="checkbox"/>		
Sample Custody Seals Intact?			<input checked="" type="checkbox"/>
Chain of Custody / Sample Documentation Present?	<input checked="" type="checkbox"/>		
COC Anomaly/Sample Acceptance Form completed?		<input checked="" type="checkbox"/>	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			<input checked="" type="checkbox"/>
Na ₂ S ₂ O ₃ Preservation Documented? <u>N/A</u>			
	<input type="checkbox"/> COC	<input type="checkbox"/> Sample Container	<input type="checkbox"/> None
Shipping Container	<input checked="" type="checkbox"/> Vista	<input type="checkbox"/> Client	<input type="checkbox"/> Retain
		<input type="checkbox"/> Return	<input type="checkbox"/> Dispose

Comments:

From: (732) 575-4275
Michael Pelenski
ARCADIS
117 Blanchard St.
Newark, NJ 07105

Origin ID: VAKA



Ship Date: 19DEC12
Act/Wgt: 30.0 LB
CAD: 103886297/NET3300
Dims: 24 X 14 X 15 IN

Delivery Address Bar Code



SHIP TO: (916) 673-1520
Martha Maier
Vista
1104 WINDFIELD WAY

BILL SENDER

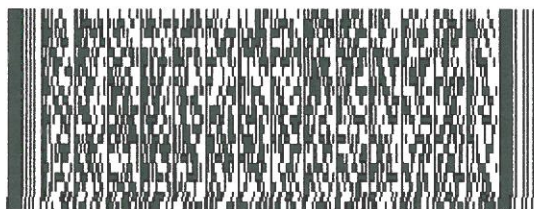
Ref # B0009966.0002.70004
Invoice #
PO # B0009966.0002.70004
Dept #

EL DORADO HILLS, CA 95762

THU - 20 DEC A2
FIRST OVERNIGHT

TRK# 7943 4624 1351
0201

95762
CA-US
SMF



X1 MHRA



515G1/E2B3/AA44

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September 07, 2012

Vista Project I.D.: 33952

Mr. Joseph C. Houser
ARCADIS U.S., Inc.
6723 Towpath Road
Syracuse, NY 13214-0066

Dear Mr. Houser,

Enclosed are the results for the one solid sample received at Vista Analytical Laboratory on August 22, 2012 under your Project Name "PRR1354". This sample was extracted and analyzed using EPA Method 1613 tetra-through-octa chlorinated dioxins and furans. A rush turnaround time was provided for this work. As requested, an MS/MSD was performed.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at mmaier@vista-analytical.com. Thank you for choosing Vista as part of your analytical support team.

Sincerely,

A handwritten signature in blue ink that reads "Martha M. Maier".

Martha M. Maier
Laboratory Director



Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAC for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista Analytical Laboratory.



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Section I: Sample Inventory Report

Date Received: 8/22/2012

Vista Lab. ID

Client Sample ID

33952-001

PRR1SOLPC-15

ANALYTICAL RESULTS

Method Blank					EPA Method 1613				
Matrix:	Soil	QC Batch No.:	4656	Lab Sample:	0-MB001	Date Analyzed DB-5:	6-Sep-12	Date Analyzed DB-225:	NA
Sample Size:	10.0 g	Date Extracted:	5-Sep-12						
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers	
2,3,7,8-TCDD	ND	0.0505			IS 13C-2,3,7,8-TCDD	94.6	25 - 164		
1,2,3,7,8-PeCDD	ND	0.0803			13C-1,2,3,7,8-PeCDD	95.9	25 - 181		
1,2,3,4,7,8-HxCDD	ND	0.143			13C-1,2,3,4,7,8-HxCDD	82.9	32 - 141		
1,2,3,6,7,8-HxCDD	ND	0.147			13C-1,2,3,6,7,8-HxCDD	105	28 - 130		
1,2,3,7,8,9-HxCDD	ND	0.189			13C-1,2,3,7,8,9-HxCDD	91.9	32 - 141		
1,2,3,4,6,7,8-HpCDD	ND	0.184			13C-1,2,3,4,6,7,8-HpCDD	83.1	23 - 140		
OCDD	0.209			J	13C-OCDD	74.2	17 - 157		
2,3,7,8-TCDF	ND	0.0559			13C-2,3,7,8-TCDF	93.1	24 - 169		
1,2,3,7,8-PeCDF	ND	0.0877			13C-1,2,3,7,8-PeCDF	109	24 - 185		
2,3,4,7,8-PeCDF	ND	0.0866			13C-2,3,4,7,8-PeCDF	106	21 - 178		
1,2,3,4,7,8-HxCDF	ND	0.0726			13C-1,2,3,4,7,8-HxCDF	78.6	26 - 152		
1,2,3,6,7,8-HxCDF	ND	0.0662			13C-1,2,3,6,7,8-HxCDF	94.0	26 - 123		
2,3,4,6,7,8-HxCDF	ND	0.0783			13C-2,3,4,6,7,8-HxCDF	91.6	28 - 136		
1,2,3,7,8,9-HxCDF	ND	0.120			13C-1,2,3,7,8,9-HxCDF	81.2	29 - 147		
1,2,3,4,6,7,8-HpCDF	ND	0.0663			13C-1,2,3,4,6,7,8-HpCDF	82.6	28 - 143		
1,2,3,4,7,8,9-HpCDF	ND	0.0997			13C-1,2,3,4,7,8,9-HpCDF	76.9	26 - 138		
OCDF	ND	0.250			13C-OCDF	73.5	17 - 157		
					CRS 37Cl-2,3,7,8-TCDD	85.4	35 - 197		
Totals					Toxic Equivalent Quotient (TEQ) Data ^e				
Total TCDD	ND	0.0506			TEQ (Min):	0.0000626			
Total PeCDD	ND	0.0801							
Total HxCDD	ND	0.160			a. Sample specific estimated detection limit.				
Total HpCDD	ND	0.184			b. Estimated maximum possible concentration.				
Total TCDF	ND	0.0559			c. Method detection limit.				
Total PeCDF	ND	0.0871			d. Lower control limit - upper control limit.				
Total HxCDF	ND	0.0817			e. TEQ based on (2005) World Health Organization Toxic Equivalent Factors.(WHO)				
Total HpCDF	ND	0.0795			The results are reported in dry weight. The sample size is reported in wet weight.				

Analyst: DMS

Approved By: Martha M. Maier 07-Sep-2012 09:38

OPR Results				EPA Method 1613			
Matrix:	Soil	QC Batch No.:	4656	Lab Sample:	0-OPR001		
Sample Size:	10.0 g	Date Extracted:	5-Sep-12	Date Analyzed DB-5:	6-Sep-12	Date Analyzed DB-225:	NA
Analyte	Spike Conc.	Conc. (ng/mL)	OPR Limits	Labeled Standard	%R	LCL-UCL	Qualifier
2,3,7,8-TCDD	10.0	7.83	6.7 - 15.8	IS 13C-2,3,7,8-TCDD	93.9	20 - 175	
1,2,3,7,8-PeCDD	50.0	41.9	35 - 71	13C-1,2,3,7,8-PeCDD	100	21 - 227	
1,2,3,4,7,8-HxCDD	50.0	44.0	35 - 82	13C-1,2,3,4,7,8-HxCDD	85.1	21 - 193	
1,2,3,6,7,8-HxCDD	50.0	44.9	38 - 67	13C-1,2,3,6,7,8-HxCDD	103	25 - 163	
1,2,3,7,8,9-HxCDD	50.0	44.6	32 - 81	13C-1,2,3,7,8,9-HxCDD	93.7	21 - 193	
1,2,3,4,6,7,8-HpCDD	50.0	41.9	35 - 70	13C-1,2,3,4,6,7,8-HpCDD	87.9	26 - 166	
OCDD	100	87.2	78 - 144	13C-OCDD	81.0	13 - 198.5	
2,3,7,8-TCDF	10.0	8.19	7.5 - 15.8	13C-2,3,7,8-TCDF	89.1	22 - 152	
1,2,3,7,8-PeCDF	50.0	41.6	40 - 67	13C-1,2,3,7,8-PeCDF	114	21 - 192	
2,3,4,7,8-PeCDF	50.0	43.4	34 - 80	13C-2,3,4,7,8-PeCDF	111	13 - 328	
1,2,3,4,7,8-HxCDF	50.0	46.7	36 - 67	13C-1,2,3,4,7,8-HxCDF	79.1	19 - 202	
1,2,3,6,7,8-HxCDF	50.0	46.1	42 - 65	13C-1,2,3,6,7,8-HxCDF	99.8	21 - 159	
2,3,4,6,7,8-HxCDF	50.0	43.7	35 - 78	13C-2,3,4,6,7,8-HxCDF	95.4	22 - 176	
1,2,3,7,8,9-HxCDF	50.0	45.6	39 - 65	13C-1,2,3,7,8,9-HxCDF	84.0	17 - 205	
1,2,3,4,6,7,8-HpCDF	50.0	44.9	41 - 61	13C-1,2,3,4,6,7,8-HpCDF	86.3	21 - 158	
1,2,3,4,7,8,9-HpCDF	50.0	44.8	39 - 69	13C-1,2,3,4,7,8,9-HpCDF	81.1	20 - 186	
OCDF	100	88.6	63 - 170	13C-OCDF	78.9	13 - 198.5	
				CRS 37Cl-2,3,7,8-TCDD	84.0	31 - 191	

Analyst: DMS

Approved By: Martha M. Maier 07-Sep-2012 09:38

Sample ID: PRR1SOLPC-15					EPA Method 1613			
Client Data		Sample Data			Laboratory Data			
Name:	ARCADIS U.S., Inc.	Matrix:	Soil	Lab Sample:	33952-001	Date Received:	22-Aug-12	
Project:	PRR1354	Sample Size:	10.7 g	QC Batch No.:	4656	Date Extracted:	5-Sep-12	
Date Collected:	21-Aug-12	%Solids:	97.2	Date Analyzed DB-5:	6-Sep-12	Date Analyzed DB-225:	NA	
Time Collected:	0000							
Analyte	Conc. (pg/g)	DL ^a	EMPC ^b	Qualifiers	Labeled Standard	%R	LCL-UCL ^d	Qualifiers
2,3,7,8-TCDD	0.111			J	IS 13C-2,3,7,8-TCDD	95.4	25 - 164	
1,2,3,7,8-PeCDD	ND	0.0817			13C-1,2,3,7,8-PeCDD	100	25 - 181	
1,2,3,4,7,8-HxCDD	ND	0.145			13C-1,2,3,4,7,8-HxCDD	79.8	32 - 141	
1,2,3,6,7,8-HxCDD	ND	0.151			13C-1,2,3,6,7,8-HxCDD	101	28 - 130	
1,2,3,7,8,9-HxCDD	ND	0.176			13C-1,2,3,7,8,9-HxCDD	92.9	32 - 141	
1,2,3,4,6,7,8-HpCDD	0.159			J	13C-1,2,3,4,6,7,8-HpCDD	88.3	23 - 140	
OCDD	1.13			J,B	13C-OCDD	82.9	17 - 157	
2,3,7,8-TCDF	ND	0.0696			13C-2,3,7,8-TCDF	93.7	24 - 169	
1,2,3,7,8-PeCDF	ND	0.108			13C-1,2,3,7,8-PeCDF	112	24 - 185	
2,3,4,7,8-PeCDF	ND	0.107			13C-2,3,4,7,8-PeCDF	112	21 - 178	
1,2,3,4,7,8-HxCDF	0.161			J	13C-1,2,3,4,7,8-HxCDF	81.3	26 - 152	
1,2,3,6,7,8-HxCDF	0.0974			J	13C-1,2,3,6,7,8-HxCDF	96.0	26 - 123	
2,3,4,6,7,8-HxCDF	ND	0.0578			13C-2,3,4,6,7,8-HxCDF	92.3	28 - 136	
1,2,3,7,8,9-HxCDF	ND	0.0814			13C-1,2,3,7,8,9-HxCDF	81.9	29 - 147	
1,2,3,4,6,7,8-HpCDF	0.804			J	13C-1,2,3,4,6,7,8-HpCDF	85.1	28 - 143	
1,2,3,4,7,8,9-HpCDF	ND	0.125			13C-1,2,3,4,7,8,9-HpCDF	78.3	26 - 138	
OCDF	1.25			J	13C-OCDF	76.8	17 - 157	
					CRS 37Cl-2,3,7,8-TCDD	83.9	35 - 197	
Totals					Toxic Equivalent Quotient (TEQ) Data ^e			
Total TCDD	1.06				TEQ (Min):	0.147		
Total PeCDD	ND	0.0817						
Total HxCDD	ND	0.157						
Total HpCDD	0.366							
Total TCDF	0.0864							
Total PeCDF	0.146		0.269					
Total HxCDF	0.555							
Total HpCDF	0.804							

Analyst: DMS

Approved By: Martha M. Maier 07-Sep-2012 09:38

MS Results						EPA Method 1613			
Matrix:	Soil	QC Batch No.:	4656	Lab Sample:	33952-001MS/MSD	Date Analyzed	DB-5:6-Sep-12		
Sample Size:	10.63/10.57 g	Date Extracted:	5-Sep-12	Client Sample:	PRR1SOLPC-15				
Analyte	Spike-MS pg/g	MS-%R	Spike-MSD pg/g	MSD-%R	RPD	IS Type	Internal Standard	MS-%R	MSD-%R
2,3,7,8-TCDD	19.3	77.1	19.5	81.0	4.93	IS	13C-2,3,7,8-TCDD	98.0	97.1
1,2,3,7,8-PeCDD	96.3	82.6	97.4	85.1	2.98		13C-1,2,3,7,8-PeCDD	106	107
1,2,3,4,7,8-HxCDD	96.3	89.0	97.4	96.9	8.50		13C-1,2,3,4,7,8-HxCDD	86.9	82.6
1,2,3,6,7,8-HxCDD	96.3	89.1	97.4	87.1	2.27		13C-1,2,3,6,7,8-HxCDD	106	111
1,2,3,7,8,9-HxCDD	96.3	88.3	97.4	91.9	4.00		13C-1,2,3,7,8,9-HxCDD	99.0	98.6
1,2,3,4,6,7,8-HpCDD	96.3	85.7	97.4	88.6	3.33		13C-1,2,3,4,6,7,8-HpCDD	92.7	92.5
OCDD	193	89.6	195	89.2	0.447		13C-OCDD	84.0	84.3
2,3,7,8-TCDF	19.3	82.9	19.5	82.6	0.363		13C-2,3,7,8-TCDF	93.8	94.0
1,2,3,7,8-PeCDF	96.3	81.5	97.4	88.6	8.35		13C-1,2,3,7,8-PeCDF	115	116
2,3,4,7,8-PeCDF	96.3	84.5	97.4	87.3	3.26		13C-2,3,4,7,8-PeCDF	115	116
1,2,3,4,7,8-HxCDF	96.3	89.4	97.4	91.4	2.21		13C-1,2,3,4,7,8-HxCDF	83.3	82.3
1,2,3,6,7,8-HxCDF	96.3	92.3	97.4	95.2	3.09		13C-1,2,3,6,7,8-HxCDF	99.9	100
2,3,4,6,7,8-HxCDF	96.3	86.2	97.4	91.2	5.64		13C-2,3,4,6,7,8-HxCDF	96.2	95.5
1,2,3,7,8,9-HxCDF	96.3	89.2	97.4	89.9	0.782		13C-1,2,3,7,8,9-HxCDF	87.7	86.8
1,2,3,4,6,7,8-HpCDF	96.3	86.9	97.4	92.6	6.35		13C-1,2,3,4,6,7,8-HpCDF	88.1	87.3
1,2,3,4,7,8,9-HpCDF	96.3	91.0	97.4	93.7	2.92		13C-1,2,3,4,7,8,9-HpCDF	82.9	80.3
OCDF	193	89.0	195	90.1	1.23		13C-OCDF	80.2	78.2
						CRS	37Cl-2,3,7,8-TCDD	88.2	86.3

EPA Method 1613 Solid

Congeners	MDL (pg/g)	RL (pg/g)
2,3,7,8-TCDD	0.0808	0.50
1,2,3,7,8-PeCDD	0.133	2.5
1,2,3,4,7,8-HxCDD	0.226	2.5
1,2,3,6,7,8-HxCDD	0.190	2.5
1,2,3,7,8,9-HxCDD	0.192	2.5
1,2,3,4,6,7,8-HpCDD	0.117	2.5
OCDD	0.200	5.0
2,3,7,8-TCDF	0.0379	0.50
1,2,3,7,8-PeCDF	0.135	2.5
2,3,4,7,8-PeCDF	0.129	2.5
1,2,3,4,7,8-HxCDF	0.119	2.5
1,2,3,6,7,8-HxCDF	0.0784	2.5
2,3,4,6,7,8-HxCDF	0.119	2.5
1,2,3,7,8,9-HxCDF	0.108	2.5
1,2,3,4,6,7,8-HpCDF	0.136	2.5
1,2,3,4,7,8,9-HpCDF	0.0798	2.5
OCDF	0.492	5.0

18-Aug-11

DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
D	Dilution
E	The amount detected is above the High Calibration Limit.
P	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
H	Recovery was outside laboratory acceptance limits.
I	Chemical Interference
J	The amount detected is below the Low Calibration Limit.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated detection limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that correspond to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

CERTIFICATIONS

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	CA00413
Alabama Dept of Environmental Management	41610
Arizona Department Of Health Services	AZ0639
Arkansas Dept of Environmental Quality	11-035-0
California Dept of Health – NELAP	02102CA
Colorado Dept of Public Health & Environment	N/A
Connecticut Dept of Public Health	PH-0182
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Dept of Health	E87777
Indiana Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Louisiana Department of Health and Hospitals	LA110017
Maine Department of Health	2010021
Michigan Department of Natural Resources	9932
Mississippi Department of Health	N/A
Nevada Division of Environmental Protection	CA004132011-1
New Jersey Dept of Environmental Protection	CA003
New York Department of Health	11411
North Carolina Dept of Health & Human Services	06700
North Dakota Dept of Health	R-078
Oklahoma Dept of Environmental Quality	2011-120
Oregon Laboratory Accreditation Program	CA200001
Pennsylvania Dept of Environmental Protection	68-00490
South Carolina Dept of Health	87002001
Tennessee Dept of Environment and Conservation	TN02996
Texas Commission on Environmental Quality	T104704189-11-2
Utah Dept of Health	CA16400
Virginia Dept of General Services	00013
Washington Department of Ecology	C584
Wisconsin Dept of Natural Resources	998036160

**CHAIN OF CUSTODY & LABORATORY
ANALYSIS REQUEST FORM**

Lab Work Order #

33952 0.2°C

PROJ. NO. B0009964.0002.70004		PROJECT NAME Tierra Phase I Removal														SDG NUMBER PRR1354	COC Number						
SAMPLERS:						Requested Analyses																	
SAMPLE ID	DATE	TIME	MATRIX	Composite/Grab	# Containers	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Remarks
PRR1SOLPC-15	8/21/2012		soil	Grab	4	X																	perform MS/MSD
Requested Analyses						Special Instructions/Comments:											<input type="checkbox"/> Special QA/QC Instructions						
1	Dioxins (PCDD/PCDFs)					1 extra 4 oz jar submitted in case of sample breakage. Perform MS/MSD on PRR1SOLPC-15																	
2																							
3																							
						Laboratory Information and Receipt																	
4	Lab Name: Vista Analytical - El Dorado Hills, CA					<input type="checkbox"/> Cooler packed with ice											Sample Receipt:						
7	Shipping Tracking #					<input type="checkbox"/> Cooler custody seal intact											Condition/Cooler Temp:						
5	Specify Turnaround Requirements: 14 day TAT																						
6																							
7	Relinquished by:		DATE	TIME	Received by:		Relinquished by:					DATE	Received by:										
8	MAJ		08/21/2012	1600	8/22/12 0904 Bullinger/Benedict																		
9																							
10	Relinquished by:		DATE	TIME	Received by:		Relinquished by:					DATE	Received by:										
11																							
12																							
13	Relinquished by:		DATE	TIME	Received by:		Relinquished by:					DATE	Received by:										
14																							
15																							
16																							
17																							

SAMPLE LOG-IN CHECKLIST



Vista Project #: 33952 TAT 14

Samples Arrival:	Date/Time: 8-22-12 0709	Initials: EM	Location: WR 2
			Shelf/Rack: N/A
Logged In:	Date/Time: 8/22/12 0904	Initials: CRB	Location: WR-2
			Shelf/Rack: E4
Delivered By:	<input checked="" type="checkbox"/> FedEx	<input type="checkbox"/> UPS	<input type="checkbox"/> On Trac
		<input type="checkbox"/> DHL	<input type="checkbox"/> Hand Delivered
Preservation:	<input checked="" type="checkbox"/> Ice	<input type="checkbox"/> Blue Ice	<input type="checkbox"/> Dry Ice
		<input type="checkbox"/> None	
Temp °C 0.2	Time: 0904	Thermometer ID: IR-2	

	YES	NO	NA
Adequate Sample Volume Received? <i>A, B, C, D containers</i>	<input checked="" type="checkbox"/>		
Holding Time Acceptable?	<input checked="" type="checkbox"/>		
Shipping Container(s) Intact?	<input checked="" type="checkbox"/>		
Shipping Custody Seals Intact?	<input checked="" type="checkbox"/>		
Shipping Documentation Present?	<input checked="" type="checkbox"/>		
Airbill Trk # <i>7987 9025 3634</i>	<input checked="" type="checkbox"/>		
Sample Container Intact?	<input checked="" type="checkbox"/>		
Sample Custody Seals Intact?			<input checked="" type="checkbox"/>
Chain of Custody / Sample Documentation Present?	<input checked="" type="checkbox"/>		
COC Anomaly/Sample Acceptance Form completed?		<input checked="" type="checkbox"/>	
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			<input checked="" type="checkbox"/>
Na ₂ S ₂ O ₃ Preservation Documented? <i>N/A</i>		COC	Sample Container
			<input checked="" type="checkbox"/> None
Shipping Container	<input checked="" type="checkbox"/> Vista	Client	Sample Container
		<input checked="" type="checkbox"/> Retain	<input type="checkbox"/> Return
			<input type="checkbox"/> Dispose

Comments:

From: (732) 575-4275
Michael Pelenski
ARCADIS
117 Blanchard St.

Newark, NJ 07105

Origin ID: VAKA



J12201207160325

Ship Date: 21AUG12
ActWgt: 20.0 LB
CAD: 103886297/NET3300

Dims: 22 X 13 X 14 IN

SHIP TO: (916) 673-1520

BILL SENDER

Martha Maier
Vista
1104 WINDFIELD WAY

EL DORADO HILLS, CA 95762

Delivery Address Bar Code



Ref # B0009966.0002.70004
Invoice #
PO # B0009966.0002.70004
Dept #

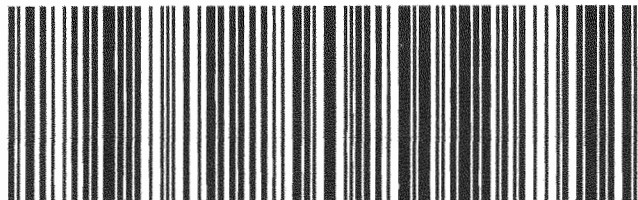
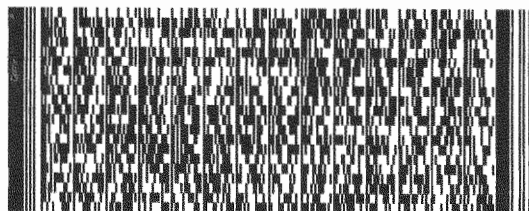
WED - 22 AUG A2
FIRST OVERNIGHT

TRK# 7987 9025 3634

0201

95762
CA-US
SMF

X1 MHRA



515G20C34/AA44

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