ENSR | AECOM

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client/Project Name: **Source Area Investigation**	Project Location: **Henderson, NV**
Project Number: **04020-023-401**	Field Logbook No.:
Sampler (Print Name)/(Affiliation): Eric Nelson/(ENSR)	Client Contact: **Robert Kennedy**, **2 Technology Park Dr**, **Westford, MA 01886-3140**
Signature:	Send Results/Report to: **Robert Kennedy**, **rkennedy@ensr.aecom.com** — TAT: STD

Analysis Requested

Container Type	Preservation
P – Plastic	1 – HCl, 4°
A – Amber Glass	2 – H_2SO_4, 4°
G – Clear Glass	3 – HNO_3, 4°
V – VOA Vial	4 – NaOH, 4°
O – Other	5 – NaOH/ZnAc, 4°
E – Encore	6 – $Na_2S_2O_3$, 4°
	7 – 4°

Matrix Codes:

DW – Drinking Water	S – Soil
WW – Wastewater	SL – Sludge
GW – Groundwater	SD – Sediment
SW – Surface Water	SO – Solid
ST – Storm Water	A – Air
W – Water	L – Liquid
	P – Product

Field Sample No./Identification	Date	Time	COMP	GRAB	Sample Container (Size/Mat'l)	Matrix	Preserv.	Field Filtered	~~Asbestos EPA/540/R-97/028~~	HRGC/MS Dioxin/Furan Screen	10% Dioxin/Furan BP4 8290	Lab I.D.	Remarks
SA17-0.5	11/15/06	0705		X		Soil				X	X		
SA17-0.5D	11/15/06	—		X		Soil				X			
SA18-0.5	11/15/06	1010		X		Soil				X			
SA18-0.5D	11/15/06	—		X		Soil				X			
EB111506	11/15/06	1200		X		Water				X	X		
SA21-0.5	11/15/06	1300		X		Soil				X	X		

Relinquished by: (Print Name)/(Affiliation) Eric Nelson/(ENSR) Signature:	Date: 11/15/06 Time: 1630	Received by: (Print Name)/(Affiliation) Maria Kaber Signature:	Date: 11/16/06 Time: 9:00
Relinquished by: (Print Name)/(Affiliation) Signature:	Date: Time:	Received by: (Print Name)/(Affiliation) Signature:	Date: Time:
Relinquished by: (Print Name)/(Affiliation) Signature:	Date: Time:	Received by: (Print Name)/(Affiliation) Signature:	Date: Time:

Analytical Laboratory (Destination):

~~EMSL Analytical, Inc.~~
~~Attn: Sample Receiving~~
~~107 Haddon Avenue~~
~~Westmont, NJ 08108~~

CAS-Houston

800-220-3675

Sample Shipped Via: UPS FedEx Courier Other

Temp blank: Yes No

White: Original (to Lab) Yellow: Lab Pink: Sampler

Serial No. 111506-1

Form 3

CLIENT ID.

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results SA17-0.5

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS Method: Screen(2) Lab Sample ID: E0600831-001

Client Name: ENSR Sample Wt/Vol: 13.508 g or mL: g

Matrix (Aqueous/Solid/Leachate): solid Initial Calibration Date: 10/23/06

Sample Receipt Date: 11/16/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 11/16/06 GC Column ID: db5

Ext.Vol(ul):20.0 Inj.Vol(ul):1.0 Sample Data Filename: U17921#1

Analysis Date: 21-NOV-06 Time: 23:33:36 Blank Data Filename: U17915#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17914#1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 26.50

	DETECTION LIMITS	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	0.032	0.121	X 1.0	1.21e-01
1,2,3,7,8-PeCDD	0.042	*	X 1.0	*
1,2,3,4,7,8-HxCDD	0.062	*	X 0.1	*
1,2,3,6,7,8-HxCDD	0.049	*	X 0.1	*
1,2,3,7,8,9-HxCDD	0.054	0.100	X 0.1	1.00e-02
1.2,3,4,6,7,8-HpCDD	0.100	0.279	X 0.01	2.79e-03
OCDD	0.208	2.193	X 0.0001	2.19e-04
2,3,7,8-TCDF	0.042	74.100	X 0.1	7.41e+00
1,2,3,7,8-PeCDF	0.031	6.375	X 0.05	3.19e-01
2,3,4,7,8-PeCDF	0.030	3.691	X 0.5	1.85e+00
1,2,3,4,7,8-HxCDF	0.061	1.703	X 0.1	1.70e-01
1,2,3,6,7,8-HxCDF	0.050	0.773	X 0.1	7.73e-02
1,2,3,7,8,9-HxCDF	0.072	0.700	X 0.1	7.00e-02
2,3,4,6,7,8-HxCDF	0.060	0.440	X 0.1	4.40e-02
1,2,3,4,6,7,8-HpCDF	0.088	1.752	X 0.01	1.75e-02
1,2,3,4,7,8,9-HpCDF	0.127	0.818	X 0.01	8.18e-03
OCDF	0.126	6.847	X 0.0001	6.85e-04
			Total:	1.01e+01

(1) World Health Organization (WHO) adopted TEF's, taken from: Van der Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCCDD, PCDFs for Humans and Wildlife (Environ Health Perspect. 106:775-792 (1988).

(2) This is a high resolution GC/MS screening method for PCDDs/PCDFs.

Form 3

CLIENT ID.

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results SA17-0.5D

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS Method: Screen(2) Lab Sample ID: E0600831-002

Client Name: ENSR Sample Wt/Vol: 10.040 g or mL: g

Matrix (Aqueous/Solid/Leachate): solid Initial Calibration Date: 10/23/06

Sample Receipt Date: 11/16/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 11/16/06 GC Column ID: db5

Ext.Vol(ul):20.0 Inj.Vol(ul):1.0 Sample Data Filename: U17922#1

Analysis Date: 22-NOV-06 Time: 00:21:45 Blank Data Filename: U17915#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17914#1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 14.50

	DETECTION LIMITS	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	0.039	0.194	X 1.0	1.94e-01
1,2,3,7,8-PeCDD	0.046	0.220	X 1.0	2.20e-01
1,2,3,4,7,8-HxCDD	0.099	*	X 0.1	*
1,2,3,6,7,8-HxCDD	0.079	0.160	X 0.1	1.60e-02
1,2,3,7,8,9-HxCDD	0.086	0.163	X 0.1	1.63e-02
1,2,3,4,6,7,8-HpCDD	0.155	0.845	X 0.01	8.45e-03
OCDD	0.252	5.440	X 0.0001	5.44e-04
2,3,7,8-TCDF	0.038	144.703	X 0.1	1.45e+01
1,2,3,7,8-PeCDF	0.093	11.863	X 0.05	5.93e-01
2,3,4,7,8-PeCDF	0.088	6.606	X 0.5	3.30e+00
1,2,3,4,7,8-HxCDF	0.093	3.450	X 0.1	3.45e-01
1,2,3,6,7,8-HxCDF	0.077	1.330	X 0.1	1.33e-01
1,2,3,7,8,9-HxCDF	0.111	1.218	X 0.1	1.22e-01
2,3,4,6,7,8-HxCDF	0.093	1.355	X 0.1	1.35e-01
1,2,3,4,6,7,8-HpCDF	0.101	3.563	X 0.01	3.56e-02
1,2,3,4,7,8,9-HpCDF	0.146	1.760	X 0.01	1.76e-02
OCDF	0.158	14.903	X 0.0001	1.49e-03
			Total:	1.96e+01

(1) World Health Organization (WHO) adopted TEF's, taken from: Van der Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCCDD, PCDFs for Humans and Wildlife (Environ Health Perspect. 106:775-792 (1988).

(2) This is a high resolution GC/MS screening method for PCDDs/PCDFs.

Form 3

CLIENT ID.

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

SA18-0.5

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS Method: Screen(2) Lab Sample ID: E0600831-003

Client Name: ENSR Sample Wt/Vol: 13.066 g or mL: g

Matrix (Aqueous/Solid/Leachate): solid Initial Calibration Date: 10/23/06

Sample Receipt Date: 11/16/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 11/16/06 GC Column ID: db5

Ext.Vol(ul):20.0 Inj.Vol(ul):1.0 Sample Data Filename: U17923#1

Analysis Date: 22-NOV-06 Time: 01:09:53 Blank Data Filename: U17915#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17914#1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 21.34

	DETECTION LIMITS	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	0.029	*	X 1.0	*
1,2,3,7,8-PeCDD	0.035	0.070	X 1.0	6.98e-02
1,2,3,4,7,8-HxCDD	0.052	0.063	X 0.1	6.28e-03
1,2,3,6,7,8-HxCDD	0.041	0.130	X 0.1	1.30e-02
1,2,3,7,8,9-HxCDD	0.045	0.117	X 0.1	1.17e-02
1,2,3,4,6,7,8-HpCDD	0.105	0.516	X 0.01	5.16e-03
OCDD	0.197	1.964	X 0.0001	1.96e-04
2,3,7,8-TCDF	0.099	1.360	X 0.1	1.36e-01
1,2,3,7,8-PeCDF	0.174	0.985	X 0.05	4.92e-02
2,3,4,7,8-PeCDF	0.166	0.265	X 0.5	1.33e-01
1,2,3,4,7,8-HxCDF	0.156	2.577	X 0.1	2.58e-01
1,2,3,6,7,8-HxCDF	0.128	1.450	X 0.1	1.45e-01
1,2,3,7,8,9-HxCDF	0.185	*	X 0.1	*
2,3,4,6,7,8-HxCDF	0.154	0.488	X 0.1	4.88e-02
1,2,3,4,6,7,8-HpCDF	0.098	6.645	X 0.01	6.64e-02
1,2,3,4,7,8,9-HpCDF	0.141	2.093	X 0.01	2.09e-02
OCDF	0.137	14.408	X 0.0001	1.44e-03
			Total:	9.64e-01

(1) World Health Organization (WHO) adopted TEF's, taken from: Van der Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCCDD, PCDFs for Humans and Wildlife (Environ Health Perspect. 106:775-792 (1988).

(2) This is a high resolution GC/MS screening method for PCDDs/PCDFs.

Form 3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

CLIENT ID.
SA18-0.5D

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS Method: Screen(2) Lab Sample ID: E0600831-004

Client Name: ENSR Sample Wt/Vol: 11.896 g or mL: g

Matrix (Aqueous/Solid/Leachate): solid Initial Calibration Date: 10/23/06

Sample Receipt Date: 11/16/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 11/16/06 GC Column ID: db5

Ext.Vol(ul):20.0 Inj.Vol(ul):1.0 Sample Data Filename: U17924#1

Analysis Date: 22-NOV-06 Time: 01:58:02 Blank Data Filename: U17915#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17914#1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 6.75

	DETECTION LIMITS	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	0.026	0.135	X 1.0	1.35e-01
1,2,3,7,8-PeCDD	0.038	0.489	X 1.0	4.89e-01
1,2,3,4,7,8-HxCDD	0.103	0.315	X 0.1	3.15e-02
1,2,3,6,7,8-HxCDD	0.082	0.802	X 0.1	8.02e-02
1,2,3,7,8,9-HxCDD	0.090	0.769	X 0.1	7.69e-02
1,2,3,4,6,7,8-HpCDD	0.117	2.633	X 0.01	2.63e-02
OCDD	0.231	3.608	X 0.0001	3.61e-04
2,3,7,8-TCDF	0.416	7.436	X 0.1	7.44e-01
1,2,3,7,8-PeCDF	0.914	6.188	X 0.05	3.09e-01
2,3,4,7,8-PeCDF	0.868	2.031	X 0.5	1.02e+00
1,2,3,4,7,8-HxCDF	0.855	16.715	X 0.1	1.67e+00
1,2,3,6,7,8-HxCDF	0.706	9.814	X 0.1	9.81e-01
1,2,3,7,8,9-HxCDF	1.016	*	X 0.1	*
2,3,4,6,7,8-HxCDF	0.847	2.185	X 0.1	2.18e-01
1,2,3,4,6,7,8-HpCDF	0.354	41.263	X 0.01	4.13e-01
1,2,3,4,7,8,9-HpCDF	0.512	12.954	X 0.01	1.30e-01
OCDF	0.159	91.431	X 0.0001	9.14e-03
			Total:	6.33e+00

(1) World Health Organization (WHO) adopted TEF's, taken from: Van der Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCCDD, PCDFs for Humans and Wildlife (Environ Health Perspect. 106:775-792 (1988).

(2) This is a high resolution GC/MS screening method for PCDDs/PCDFs.

Form 3

CLIENT ID.

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results SA21-0.5

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS Method: Screen(2) Lab Sample ID: E0600831-005

Client Name: ENSR Sample Wt/Vol: 15.514 g or mL: g

Matrix (Aqueous/Solid/Leachate): solid Initial Calibration Date: 10/23/06

Sample Receipt Date: 11/16/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 11/16/06 GC Column ID: db5

Ext.Vol(ul):20.0 Inj.Vol(ul):1.0 Sample Data Filename: U17925#1

Analysis Date: 22-NOV-06 Time: 02:46:11 Blank Data Filename: U17915#1

Dilution Factor: 1 Cal. Ver. Data Filename: U17914#1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 16.93

	DETECTION LIMITS	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	0.022	0.047	X 1.0	4.67e-02
1,2,3,7,8-PeCDD	0.034	0.202	X 1.0	2.02e-01
1,2,3,4,7,8-HxCDD	0.048	0.144	X 0.1	1.44e-02
1,2,3,6,7,8-HxCDD	0.038	0.395	X 0.1	3.95e-02
1,2,3,7,8,9-HxCDD	0.042	0.383	X 0.1	3.83e-02
1,2,3,4,6,7,8-HpCDD	0.077	1.360	X 0.01	1.36e-02
OCDD	0.165	2.214	X 0.0001	2.21e-04
2,3,7,8-TCDF	0.155	2.994	X 0.1	2.99e-01
1,2,3,7,8-PeCDF	0.339	2.669	X 0.05	1.33e-01
2,3,4,7,8-PeCDF	0.322	0.772	X 0.5	3.86e-01
1,2,3,4,7,8-HxCDF	0.211	6.907	X 0.1	6.91e-01
1,2,3,6,7,8-HxCDF	0.174	4.195	X 0.1	4.19e-01
1,2,3,7,8,9-HxCDF	0.250	*	X 0.1	*
2,3,4,6,7,8-HxCDF	0.209	0.802	X 0.1	8.02e-02
1,2,3,4,6,7,8-HpCDF	0.097	18.803	X 0.01	1.88e-01
1,2,3,4,7,8,9-HpCDF	0.140	5.435	X 0.01	5.44e-02
OCDF	0.084	38.958	X 0.0001	3.90e-03
			Total:	2.61e+00

(1) World Health Organization (WHO) adopted TEF's, taken from: Van der Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCCDD, PCDFs for Humans and Wildlife (Environ Health Perspect. 106:775-792 (1988).

(2) This is a high resolution GC/MS screening method for PCDDs/PCDFs.

Form 3

CLIENT ID.

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results EB111506

Lab Name: Columbia Analytical Services Episode No.:

Lab Code: CAS Method: Screen(2) Lab Sample ID: E0600831-006

Client Name: ENSR Sample Wt/Vol: 1080 g or mL: mL

Matrix (Aqueous/Solid/Leachate): Aqueous Initial Calibration Date: 11/04/04

Sample Receipt Date: 11/16/06 Instrument ID: AutoSpec-Ultima

Ext. Date: 11/20/06 GC Column ID: DB-5

Ext.Vol(ul):20.0 Inj.Vol(ul):1.0 Sample Data Filename: U27415#1

Analysis Date: 22-NOV-06 Time: 20:28:11 Blank Data Filename: U27409#1

Dilution Factor: 1 Cal. Ver. Data Filename: U27408#1

Concentration Units (pg/L or ng/Kg dry weight): pg/L % Moisture:

	DETECTION LIMITS	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	0.266	*	X 1.0	*
1,2,3,7,8-PeCDD	0.350	*	X 1.0	*
1,2,3,4,7,8-HxCDD	0.339	*	X 0.1	*
1,2,3,6,7,8-HxCDD	0.305	*	X 0.1	*
1,2,3,7,8,9-HxCDD	0.315	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	0.205	4.425	X 0.01	4.43e-02
OCDD	0.568	14.157	X 0.0001	1.42e-03
2,3,7,8-TCDF	1.182	13.199	X 0.1	1.32e+00
1,2,3,7,8-PeCDF	1.330	8.807	X 0.05	4.40e-01
2,3,4,7,8-PeCDF	1.243	3.886	X 0.5	1.94e+00
1,2,3,4,7,8-HxCDF	0.694	20.524	X 0.1	2.05e+00
1,2,3,6,7,8-HxCDF	0.686	12.291	X 0.1	1.23e+00
1,2,3,7,8,9-HxCDF	0.820	3.077	X 0.1	3.08e-01
2,3,4,6,7,8-HxCDF	0.733	6.232	X 0.1	6.23e-01
1,2,3,4,6,7,8-HpCDF	0.361	50.675	X 0.01	5.07e-01
1,2,3,4,7,8,9-HpCDF	0.466	18.626	X 0.01	1.86e-01
OCDF	0.519	128.015	X 0.0001	1.28e-02
			Total:	8.67e+00

(1) World Health Organization (WHO) adopted TEF's, taken from: Van der Berg, et al: Toxic Equivalency Factor (TEFs) for PCBs, PCCDD, PCDFs for Humans and Wildlife (Environ Health Perspect. 106:775-792 (1988).

(2) This is a high resolution GC/MS screening method for PCDDs/PCDFs.