CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-832-112018 3FT
Date Sampled: 11/20/18 08:47
Percent Solids: 84
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811520
ESS Laboratory Sample ID: 1811520-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/20/18 16:42

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	11/21/18 18:22	C8K0401	CK82015
Aroclor 1221	ND (0.06)		8082A		1	11/21/18 18:22	C8K0401	CK82015
Aroclor 1232	ND (0.06)		8082A		1	11/21/18 18:22	C8K0401	CK82015
Aroclor 1242	**1.6** (0.3)		8082A		5	11/26/18 10:52	C8K0401	CK82015
Aroclor 1248	ND (0.06)		8082A		1	11/21/18 18:22	C8K0401	CK82015
Aroclor 1254	**1.6** (0.3)		8082A		5	11/26/18 10:52	C8K0401	CK82015
Aroclor 1260 [2C]	**1.0** (0.3)		8082A		5	11/26/18 10:52	C8K0401	CK82015
Aroclor 1262	ND (0.06)		8082A		1	11/21/18 18:22	C8K0401	CK82015
Aroclor 1268	ND (0.06)		8082A		1	11/21/18 18:22	C8K0401	CK82015

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*91 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*99 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*119 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*102 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-838-112018 3FT
Date Sampled: 11/20/18 08:48
Percent Solids: 80
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811520
ESS Laboratory Sample ID: 1811520-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/20/18 16:42

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.07)		8082A		1	11/21/18 18:41	C8K0401	CK82015
Aroclor 1221	ND (0.07)		8082A		1	11/21/18 18:41	C8K0401	CK82015
Aroclor 1232	ND (0.07)		8082A		1	11/21/18 18:41	C8K0401	CK82015
Aroclor 1242	**1.6** (0.3)		8082A		5	11/26/18 11:10	C8K0401	CK82015
Aroclor 1248	ND (0.07)		8082A		1	11/21/18 18:41	C8K0401	CK82015
Aroclor 1254	**2.4** (0.3)		8082A		5	11/26/18 11:10	C8K0401	CK82015
Aroclor 1260 [2C]	**1.6** (0.3)		8082A		5	11/26/18 11:10	C8K0401	CK82015
Aroclor 1262	ND (0.07)		8082A		1	11/21/18 18:41	C8K0401	CK82015
Aroclor 1268	ND (0.07)		8082A		1	11/21/18 18:41	C8K0401	CK82015

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*104 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*106 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*88 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*100 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-824-112018 3FT
Date Sampled: 11/20/18 08:51
Percent Solids: 82
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811520
ESS Laboratory Sample ID: 1811520-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/20/18 16:42

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.3)		8082A		20	11/26/18 11:29	C8K0428	CK82015
Aroclor 1221	ND (1.3)		8082A		20	11/26/18 11:29	C8K0428	CK82015
Aroclor 1232	ND (1.3)		8082A		20	11/26/18 11:29	C8K0428	CK82015
Aroclor 1242	ND (1.3)		8082A		20	11/26/18 11:29	C8K0428	CK82015
Aroclor 1248	**11.1** (1.3)		8082A		20	11/26/18 11:29	C8K0428	CK82015
Aroclor 1254	ND (1.3)		8082A		20	11/26/18 11:29	C8K0428	CK82015
Aroclor 1260	ND (1.3)		8082A		20	11/26/18 11:29	C8K0428	CK82015
Aroclor 1262	ND (1.3)		8082A		20	11/26/18 11:29	C8K0428	CK82015
Aroclor 1268	ND (1.3)		8082A		20	11/26/18 11:29	C8K0428	CK82015

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*%*	*SD*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*%*	*SD*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-822-112018 3FT
Date Sampled: 11/20/18 08:52
Percent Solids: 65
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811520
ESS Laboratory Sample ID: 1811520-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/20/18 16:42

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.08)		8082A		1	11/21/18 19:20	C8K0401	CK82015
Aroclor 1221	ND (0.08)		8082A		1	11/21/18 19:20	C8K0401	CK82015
Aroclor 1232	ND (0.08)		8082A		1	11/21/18 19:20	C8K0401	CK82015
Aroclor 1242	**3.2** (0.4)		8082A		5	11/26/18 11:48	C8K0401	CK82015
Aroclor 1248	ND (0.08)		8082A		1	11/21/18 19:20	C8K0401	CK82015
Aroclor 1254	**2.8** (0.4)		8082A		5	11/26/18 11:48	C8K0401	CK82015
Aroclor 1260 [2C]	**2.5** (0.4)		8082A		5	11/26/18 11:48	C8K0401	CK82015
Aroclor 1262	ND (0.08)		8082A		1	11/21/18 19:20	C8K0401	CK82015
Aroclor 1268	ND (0.08)		8082A		1	11/21/18 19:20	C8K0401	CK82015

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*120 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*116 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*115 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*109 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-825-112018 3FT
Date Sampled: 11/20/18 08:53
Percent Solids: 70
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811520
ESS Laboratory Sample ID: 1811520-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/20/18 16:42

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.5)		8082A		20	11/26/18 12:08	C8K0428	CK82015
Aroclor 1221	ND (1.5)		8082A		20	11/26/18 12:08	C8K0428	CK82015
Aroclor 1232	ND (1.5)		8082A		20	11/26/18 12:08	C8K0428	CK82015
Aroclor 1242	ND (1.5)		8082A		20	11/26/18 12:08	C8K0428	CK82015
Aroclor 1248	**13.1** (1.5)		8082A		20	11/26/18 12:08	C8K0428	CK82015
Aroclor 1254	ND (1.5)		8082A		20	11/26/18 12:08	C8K0428	CK82015
Aroclor 1260	ND (1.5)		8082A		20	11/26/18 12:08	C8K0428	CK82015
Aroclor 1262	ND (1.5)		8082A		20	11/26/18 12:08	C8K0428	CK82015
Aroclor 1268	ND (1.5)		8082A		20	11/26/18 12:08	C8K0428	CK82015

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*%*	*SD*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*%*	*SD*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-823-112018 3FT
Date Sampled: 11/20/18 08:54
Percent Solids: 65
Initial Volume: 19.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811520
ESS Laboratory Sample ID: 1811520-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/20/18 16:42

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.08)		8082A		1	11/21/18 19:58	C8K0401	CK82015
Aroclor 1221	ND (0.08)		8082A		1	11/21/18 19:58	C8K0401	CK82015
Aroclor 1232	ND (0.08)		8082A		1	11/21/18 19:58	C8K0401	CK82015
Aroclor 1242	**1.8** (0.8)		8082A		10	11/26/18 12:27	C8K0401	CK82015
Aroclor 1248	ND (0.08)		8082A		1	11/21/18 19:58	C8K0401	CK82015
Aroclor 1254	**5.0** (0.8)		8082A		10	11/26/18 12:27	C8K0401	CK82015
Aroclor 1260 [2C]	**5.6** (0.8)		8082A		10	11/26/18 12:27	C8K0401	CK82015
Aroclor 1262	ND (0.08)		8082A		1	11/21/18 19:58	C8K0401	CK82015
Aroclor 1268	ND (0.08)		8082A		1	11/21/18 19:58	C8K0401	CK82015

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*79 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*96 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*79 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-826-112018 3FT
Date Sampled: 11/20/18 08:55
Percent Solids: 77
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811520
ESS Laboratory Sample ID: 1811520-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/20/18 16:42

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.3)		8082A		20	11/26/18 12:46	C8K0428	CK82015
Aroclor 1221	ND (1.3)		8082A		20	11/26/18 12:46	C8K0428	CK82015
Aroclor 1232	ND (1.3)		8082A		20	11/26/18 12:46	C8K0428	CK82015
Aroclor 1242	ND (1.3)		8082A		20	11/26/18 12:46	C8K0428	CK82015
Aroclor 1248	**10.7** (1.3)		8082A		20	11/26/18 12:46	C8K0428	CK82015
Aroclor 1254	ND (1.3)		8082A		20	11/26/18 12:46	C8K0428	CK82015
Aroclor 1260	**2.7** (1.3)		8082A		20	11/26/18 12:46	C8K0428	CK82015
Aroclor 1262	ND (1.3)		8082A		20	11/26/18 12:46	C8K0428	CK82015
Aroclor 1268	ND (1.3)		8082A		20	11/26/18 12:46	C8K0428	CK82015

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-827-112018 3FT
Date Sampled: 11/20/18 08:57
Percent Solids: 88
Initial Volume: 20.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811520
ESS Laboratory Sample ID: 1811520-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/20/18 16:42

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	11/21/18 20:37	C8K0401	CK82015
Aroclor 1221	ND (0.05)		8082A		1	11/21/18 20:37	C8K0401	CK82015
Aroclor 1232	ND (0.05)		8082A		1	11/21/18 20:37	C8K0401	CK82015
Aroclor 1242	ND (0.05)		8082A		1	11/21/18 20:37	C8K0401	CK82015
Aroclor 1248	**1.0** (0.05)		8082A		1	11/21/18 20:37	C8K0401	CK82015
Aroclor 1254	ND (0.05)		8082A		1	11/21/18 20:37	C8K0401	CK82015
Aroclor 1260	ND (0.05)		8082A		1	11/21/18 20:37	C8K0401	CK82015
Aroclor 1262	ND (0.05)		8082A		1	11/21/18 20:37	C8K0401	CK82015
Aroclor 1268	ND (0.05)		8082A		1	11/21/18 20:37	C8K0401	CK82015

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*106 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*98 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*107 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*110 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-592-112018 0-2FT
Date Sampled: 11/20/18 08:59
Percent Solids: 84
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811520
ESS Laboratory Sample ID: 1811520-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/20/18 16:42

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	11/21/18 20:56	C8K0401	CK82015
Aroclor 1221	ND (0.06)		8082A		1	11/21/18 20:56	C8K0401	CK82015
Aroclor 1232	ND (0.06)		8082A		1	11/21/18 20:56	C8K0401	CK82015
Aroclor 1242	**5.8** (0.6)		8082A		10	11/26/18 13:05	C8K0401	CK82015
Aroclor 1248	ND (0.06)		8082A		1	11/21/18 20:56	C8K0401	CK82015
Aroclor 1254	**5.2** (0.6)		8082A		10	11/26/18 13:05	C8K0401	CK82015
Aroclor 1260 [2C]	**3.9** (0.6)		8082A		10	11/26/18 13:05	C8K0401	CK82015
Aroclor 1262	ND (0.06)		8082A		1	11/21/18 20:56	C8K0401	CK82015
Aroclor 1268	ND (0.06)		8082A		1	11/21/18 20:56	C8K0401	CK82015

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*89 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*93 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*88 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*95 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-591-112018 0-2FT
Date Sampled: 11/20/18 09:00
Percent Solids: 86
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811520
ESS Laboratory Sample ID: 1811520-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/20/18 16:42

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (5.9)		8082A		100	11/26/18 13:25	C8K0428	CK82015
Aroclor 1221	ND (5.9)		8082A		100	11/26/18 13:25	C8K0428	CK82015
Aroclor 1232	ND (5.9)		8082A		100	11/26/18 13:25	C8K0428	CK82015
Aroclor 1242	ND (5.9)		8082A		100	11/26/18 13:25	C8K0428	CK82015
Aroclor 1248	**63.6** (5.9)		8082A		100	11/26/18 13:25	C8K0428	CK82015
Aroclor 1254	ND (5.9)		8082A		100	11/26/18 13:25	C8K0428	CK82015
Aroclor 1260	ND (5.9)		8082A		100	11/26/18 13:25	C8K0428	CK82015
Aroclor 1262	ND (5.9)		8082A		100	11/26/18 13:25	C8K0428	CK82015
Aroclor 1268	ND (5.9)		8082A		100	11/26/18 13:25	C8K0428	CK82015

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-590-112018 0-2FT
Date Sampled: 11/20/18 09:01
Percent Solids: 75
Initial Volume: 19.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811520
ESS Laboratory Sample ID: 1811520-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/20/18 16:42

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.3)		8082A		20	11/26/18 13:44	C8K0428	CK82015
Aroclor 1221	ND (1.3)		8082A		20	11/26/18 13:44	C8K0428	CK82015
Aroclor 1232	ND (1.3)		8082A		20	11/26/18 13:44	C8K0428	CK82015
Aroclor 1242	ND (1.3)		8082A		20	11/26/18 13:44	C8K0428	CK82015
Aroclor 1248	**6.4** (1.3)		8082A		20	11/26/18 13:44	C8K0428	CK82015
Aroclor 1254	ND (1.3)		8082A		20	11/26/18 13:44	C8K0428	CK82015
Aroclor 1260	ND (1.3)		8082A		20	11/26/18 13:44	C8K0428	CK82015
Aroclor 1262	ND (1.3)		8082A		20	11/26/18 13:44	C8K0428	CK82015
Aroclor 1268	ND (1.3)		8082A		20	11/26/18 13:44	C8K0428	CK82015

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*%*	*SD*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*%*	*SD*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-589-112018 0-2FT
Date Sampled: 11/20/18 09:02
Percent Solids: 85
Initial Volume: 20
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811520
ESS Laboratory Sample ID: 1811520-12
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/20/18 16:42

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	11/21/18 21:54	C8K0401	CK82015
Aroclor 1221	ND (0.06)		8082A		1	11/21/18 21:54	C8K0401	CK82015
Aroclor 1232	ND (0.06)		8082A		1	11/21/18 21:54	C8K0401	CK82015
Aroclor 1242	ND (0.06)		8082A		1	11/21/18 21:54	C8K0401	CK82015
Aroclor 1248	**1.0** (0.06)		8082A		1	11/21/18 21:54	C8K0401	CK82015
Aroclor 1254	ND (0.06)		8082A		1	11/21/18 21:54	C8K0401	CK82015
Aroclor 1260	**0.2** (0.06)		8082A		1	11/21/18 21:54	C8K0401	CK82015
Aroclor 1262	ND (0.06)		8082A		1	11/21/18 21:54	C8K0401	CK82015
Aroclor 1268	ND (0.06)		8082A		1	11/21/18 21:54	C8K0401	CK82015

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*64 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*75 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*61 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*69 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-588-112018 0-2FT
Date Sampled: 11/20/18 09:03
Percent Solids: 86
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811520
ESS Laboratory Sample ID: 1811520-13
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/20/18 16:42

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.2)		8082A		20	11/26/18 14:03	C8K0428	CK82015
Aroclor 1221	ND (1.2)		8082A		20	11/26/18 14:03	C8K0428	CK82015
Aroclor 1232	ND (1.2)		8082A		20	11/26/18 14:03	C8K0428	CK82015
Aroclor 1242	ND (1.2)		8082A		20	11/26/18 14:03	C8K0428	CK82015
Aroclor 1248	**8.9** (1.2)		8082A		20	11/26/18 14:03	C8K0428	CK82015
Aroclor 1254	ND (1.2)		8082A		20	11/26/18 14:03	C8K0428	CK82015
Aroclor 1260	ND (1.2)		8082A		20	11/26/18 14:03	C8K0428	CK82015
Aroclor 1262	ND (1.2)		8082A		20	11/26/18 14:03	C8K0428	CK82015
Aroclor 1268	ND (1.2)		8082A		20	11/26/18 14:03	C8K0428	CK82015

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-587-112018 0-2FT
Date Sampled: 11/20/18 08:04
Percent Solids: 86
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811520
ESS Laboratory Sample ID: 1811520-14
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/20/18 16:42

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	11/21/18 22:32	C8K0401	CK82015
Aroclor 1221	ND (0.06)		8082A		1	11/21/18 22:32	C8K0401	CK82015
Aroclor 1232	ND (0.06)		8082A		1	11/21/18 22:32	C8K0401	CK82015
Aroclor 1242	ND (0.06)		8082A		1	11/21/18 22:32	C8K0401	CK82015
Aroclor 1248	**0.9** (0.06)		8082A		1	11/21/18 22:32	C8K0401	CK82015
Aroclor 1254	**0.9** (0.06)		8082A		1	11/21/18 22:32	C8K0401	CK82015
Aroclor 1260	ND (0.06)		8082A		1	11/21/18 22:32	C8K0401	CK82015
Aroclor 1262	ND (0.06)		8082A		1	11/21/18 22:32	C8K0401	CK82015
Aroclor 1268	ND (0.06)		8082A		1	11/21/18 22:32	C8K0401	CK82015

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*82 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*88 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*82 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*93 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-586-112018 0-2FT
Date Sampled: 11/20/18 09:05
Percent Solids: 85
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811520
ESS Laboratory Sample ID: 1811520-15
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/20/18 16:42

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	11/22/18 1:25	C8K0401	CK82015
Aroclor 1221	ND (0.06)		8082A		1	11/22/18 1:25	C8K0401	CK82015
Aroclor 1232	ND (0.06)		8082A		1	11/22/18 1:25	C8K0401	CK82015
Aroclor 1242	ND (0.06)		8082A		1	11/22/18 1:25	C8K0401	CK82015
Aroclor 1248	ND (0.06)		8082A		1	11/22/18 1:25	C8K0401	CK82015
Aroclor 1254	**0.1** (0.06)		8082A		1	11/22/18 1:25	C8K0401	CK82015
Aroclor 1260	ND (0.06)		8082A		1	11/22/18 1:25	C8K0401	CK82015
Aroclor 1262	ND (0.06)		8082A		1	11/22/18 1:25	C8K0401	CK82015
Aroclor 1268	ND (0.06)		8082A		1	11/22/18 1:25	C8K0401	CK82015

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*82 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*89 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*86 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*92 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-371-112018-C 7FT
Date Sampled: 11/20/18 13:50
Percent Solids: 84
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811520
ESS Laboratory Sample ID: 1811520-16
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/20/18 16:42

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	11/22/18 1:44	C8K0401	CK82015
Aroclor 1221	ND (0.06)		8082A		1	11/22/18 1:44	C8K0401	CK82015
Aroclor 1232	ND (0.06)		8082A		1	11/22/18 1:44	C8K0401	CK82015
Aroclor 1242	ND (0.06)		8082A		1	11/22/18 1:44	C8K0401	CK82015
Aroclor 1248	ND (0.06)		8082A		1	11/22/18 1:44	C8K0401	CK82015
Aroclor 1254	**1.3** (0.3)		8082A		5	11/26/18 14:23	C8K0401	CK82015
Aroclor 1260	ND (0.06)		8082A		1	11/22/18 1:44	C8K0401	CK82015
Aroclor 1262	ND (0.06)		8082A		1	11/22/18 1:44	C8K0401	CK82015
Aroclor 1268	ND (0.06)		8082A		1	11/22/18 1:44	C8K0401	CK82015

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*99 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*102 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*65 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*84 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1811520

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CK82015 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0242*		mg/kg wet	*0.02500*		*97*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0257*		mg/kg wet	*0.02500*		*103*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0237*		mg/kg wet	*0.02500*		*95*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0264*		mg/kg wet	*0.02500*		*106*	*30-150*			
LCS										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		103	40-140			
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		105	40-140			
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		93	40-140			
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		103	40-140			
Surrogate: Decachlorobiphenyl	*0.0256*		mg/kg wet	*0.02500*		*102*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0275*		mg/kg wet	*0.02500*		*110*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0256*		mg/kg wet	*0.02500*		*102*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0271*		mg/kg wet	*0.02500*		*108*	*30-150*			
LCS Dup										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		101	40-140	2	30	
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		104	40-140	1	30	
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		93	40-140	0.7	30	
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		103	40-140	0.08	30	
Surrogate: Decachlorobiphenyl	*0.0250*		mg/kg wet	*0.02500*		*100*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0272*		mg/kg wet	*0.02500*		*109*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0246*		mg/kg wet	*0.02500*		*98*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0261*		mg/kg wet	*0.02500*		*104*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1811520

Notes and Definitions

U	Analyte included in the analysis, but not detected
SD	Surrogate recovery(ies) diluted below the MRL (SD).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
CD-	Continuing Calibration %Diff/Drift is below control limit (CD-).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1811520

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

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ESS Laboratory
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www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1811520

Turn Time Rush 48hr

Regulatory State RI

Reporting Limits See note 1

Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Electonic Deliverables: ☒ Limit Checker ☒ Standard Excel ☒ Other (Please Specify →) PDF

Company Name: AEE

Project # 363655

Project Name: BASF Cranston

Contact Person: Aaron Ting

Address: 112 Water St, 5th floor

City: Boston

State: MA

Zip Code: 02109

PO #

Telephone Number: (978) 577-7138

FAX Number

Email Address: ating@aeiconsultants.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: PCBs (Soxhlet)
1	11-20-18	0847	G	S	B-832-112018 (3')	X
2		0848			B-838-112018 (3')	X
3		0851			B-824-112018 (3')	X
4		0852			B-822-112018 (3')	X
5		0853			B-825-112018 (3')	X
6		0854			B-823-112018 (3')	X
7		0855			B-826-112018 (3')	X
8		0857			B-827-112018 (3')	X
9		0859	C		SW-592-112018 (0-2')	X
10		0900			~~SW-591-102018 (0-2')~~ see below*	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial — AG

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 9

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Ascorbic Acid 12-Other* — 1

Number of Containers per Sample: 1

Laboratory Use Only

Cooler Present: Y

Seals Intact: NA

Cooler Temperature: 4.1 °C

Sampled by: A. Ting

Comments: Please specify "Other" preservative and containers types in this space

Note 1: See Project QAPP

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
11-20-18 1427	11/20/18 1429		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

*Sample ID Change to "SW-591-112018 (0-2)" per Client 11/26/18 - PRB

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CHAIN OF CUSTODY

ESS Lab # 1811520

Turn Time Rush 48 hr

Regulatory State RI

Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP

Reporting Limits See note 1

Electonic Deliverables ☒Limit Checker ☒Standard Excel ☒Other (Please Specify →) PDF

Company Name	Project #	Project Name
AEI	363655	BASF Cranston

Contact Person	Address
Aaron Ting	112 water St, 5th floor

City	State	Zip Code	PO #
BOSTON	MA	02109	—

Telephone Number	FAX Number	Email Address
(978) 577-7138	—	ating@aeiconsultants.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: PCBs (Soxhlet)
11	11-20-18	0901	C	S	SW-590-112018(0-2')	X
12	↓	0902	↓	↓	SW-589-112018(0-2')	X
13		0903			SW-588-112018(0-2')	X
14		0904			SW-587-112018(0-2')	X
15	↓	0905	↓	↓	SW-586-112018(0-2')	X
16	11-20-18	1350	G	S	B-371-112018-C(7')	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial — AG
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 9
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Ascorbic Acid 12-Other* — 1
Number of Containers per Sample: 1

Laboratory Use Only
Cooler Present: Y
Seals Intact: NA
Cooler Temperature: 4.1 °C

Sampled by: A Ting

Comments: Please specify "Other" preservative and containers types in this space

Note 1: See project QAPP

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
11-20-18 1727	11/20/18 1830		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

3

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CHAIN OF CUSTODY

ESS Lab # 1811520

Turn Time Rush 48hr

Regulatory State RI

Reporting Limits See note 1

Is this project for any of the following?: ○ CT RCP ○ MA MCP ○ RGP

Electonic Deliverables: ☒ Limit Checker ☒ Standard Excel ☒ Other (Please Specify →) PDF

Company Name: AEE

Project # 363655

Project Name: BASF Cranston

Contact Person: Aaron Ting

Address: 112 water St, 5th floor

City: Boston

State: MA

Zip Code: 02109

PO #

Telephone Number: (978) 577-7138

FAX Number

Email Address: ating@aeiconsultants.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: PCBs (Soxhlet)
1	11-20-18	0847	G	S	B-832-112018(3')	X
2		0848			B-838-112018(3')	X
3		0851			B-824-112018(3')	X
4		0852			B-822-112018(3')	X
5		0853			B-825-112018(3')	X
6		0854			B-823-112018(3')	X
7		0855			B-826-112018(3')	X
8		0857			B-827-112018(3')	X
9		0859	C		SW-592-112018(0-2')	X
10		0900			SW-591-102018(0-2')	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial — AG

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 9

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Ascorbic Acid 12-Other* — 1

Number of Containers per Sample: 1

Laboratory Use Only

Cooler Present: Y

Seals Intact: NA

Cooler Temperature: 4.1 °C

Sampled by: A. Ting

Comments: Please specify "Other" preservative and containers types in this space

Note 1: See project QAPP

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
11-20-18 1427	11/20/18 1429		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

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CHAIN OF CUSTODY

ESS Lab # 1811520

Turn Time Rush 48 hr

Regulatory State RI

Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP

Reporting Limits See note 1

Electonic Deliverables ☒Limit Checker ☒Standard Excel ☒Other (Please Specify →) PDF

Company Name	Project #	Project Name
AEI	363655	BASF Cranston

Contact Person	Address
Aaron Ting	112 water St, 5th floor

City	State	Zip Code	PO #
BOSTON	MA	02109	—

Telephone Number	FAX Number	Email Address
(978) 577-7138	—	ating@aeiconsultants.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: PCBs (Soxhlet)
11	11-20-18	0901	C	S	SW-590-112018(0-2')	X
12	↓	0902	↓	↓	SW-589-112018(0-2')	X
13		0903			SW-588-112018(0-2')	X
14		0904			SW-587-112018(0-2')	X
15	↓	0905	↓	↓	SW-586-112018(0-2')	X
16	11-20-18	1350	G	S	B-371-112018-C(7')	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial	AG
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*	9
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Ascorbic Acid 12-Other*	1
Number of Containers per Sample:	1

Laboratory Use Only
Cooler Present: Y
Seals Intact: NA
Cooler Temperature: 4.1 °C

Sampled by: A Ting

Comments: Please specify "Other" preservative and containers types in this space

Note 1: See project QAPP

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[illegible] 11-20-18 1727	[illegible] 11/20/18 1830		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Richard Kowalski
AEI Consultants, Inc.
148 Hathaway Road
Dartmouth, MA 02747

RE: BASF Cranston (363655)
ESS Laboratory Work Order Number: 1811571

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 2:37 pm, Nov 28, 2018

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1811571

SAMPLE RECEIPT

The following samples were received on November 21, 2018 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
1811571-01	B-49-112118 2FT	Soil	8082A
1811571-02	B-50-112118 2FT	Soil	8082A
1811571-03	B-55-112118 2FT	Soil	8082A
1811571-04	B-60-112118 2FT	Soil	8082A
1811571-05	SW-40-112118 0-2FT	Soil	8082A
1811571-06	SW-45-112118 0-2FT	Soil	8082A
1811571-07	B-25-112118 1FT	Soil	8082A
1811571-08	B-30-112118 1FT	Soil	8082A
1811571-09	B-35-112118 1FT	Soil	8082A
1811571-10	B-40-112118 1FT	Soil	8082A
1811571-11	B-65-112118 1FT	Soil	8082A
1811571-12	B-65-112118-1 1FT	Soil	8082A
1811571-13	B-349-112018-B 7FT	Soil	8082A

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1811571

PROJECT NARRATIVE

8082A Polychlorinated Biphenyls (PCB)

1811571-01 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811571-02 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811571-03 **Lower value is used due to matrix interferences (LC).**
Aroclor 1254 , Aroclor 1254 [2C]

1811571-03 **Percent difference between primary and confirmation results exceeds 40% (P).**
Aroclor 1254 , Aroclor 1254 [2C]

1811571-03 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl [2C] (241% @ 30-150%)

1811571-04 **Lower value is used due to matrix interferences (LC).**
Aroclor 1254 , Aroclor 1254 [2C]

1811571-04 **Percent difference between primary and confirmation results exceeds 40% (P).**
Aroclor 1254 , Aroclor 1254 [2C]

1811571-04 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (2050% @ 30-150%), Decachlorobiphenyl [2C] (216% @ 30-150%), Tetrachloro-m-xylene (6570% @ 30-150%), Tetrachloro-m-xylene [2C] (573% @ 30-150%)

1811571-05 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811571-06 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811571-07 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811571-08 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811571-09 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811571-10 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811571-11 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl [2C] (1470% @ 30-150%)

1811571-13 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl [2C] (156% @ 30-150%)

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston ESS Laboratory Work Order: 1811571

C8K0429-CCV6 **Surrogate recovery(ies) above upper control limit (S+).**
Decachlorobiphenyl [2C] (138% @ 80-120%), Tetrachloro-m-xylene [2C] (121% @ 80-120%)

C8K0429-CCV9 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Aroclor 1016 [2C] (22% @ 20%)

CK82108-MS1 **Due to high target values, matrix spike analyte(s) is masked (MT).**
Aroclor 1016 [2C] (152% @ 40-140%), Aroclor 1260 (158% @ 40-140%), Aroclor 1260 [2C] (152% @ 40-140%)

CK82108-MS1 **Surrogate recovery(ies) above upper control limit (S+).**
Decachlorobiphenyl [2C] (171% @ 30-150%)

CK82108-MSD1 **Due to high target values, matrix spike analyte(s) is masked (MT).**
Aroclor 1016 [2C] (147% @ 40-140%), Aroclor 1260 (152% @ 40-140%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1811571

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 04-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-49-112118 2FT
Date Sampled: 11/21/18 11:05
Percent Solids: 89
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811571
ESS Laboratory Sample ID: 1811571-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/21/18 17:16

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.2)		8082A		20	11/27/18 12:37	C8K0460	CK82108
Aroclor 1221	ND (1.2)		8082A		20	11/27/18 12:37	C8K0460	CK82108
Aroclor 1232	ND (1.2)		8082A		20	11/27/18 12:37	C8K0460	CK82108
Aroclor 1242	ND (1.2)		8082A		20	11/27/18 12:37	C8K0460	CK82108
Aroclor 1248	ND (1.2)		8082A		20	11/27/18 12:37	C8K0460	CK82108
Aroclor 1254 [2C]	**15.8** (1.2)		8082A		20	11/27/18 12:37	C8K0460	CK82108
Aroclor 1260	ND (1.2)		8082A		20	11/27/18 12:37	C8K0460	CK82108
Aroclor 1262	ND (1.2)		8082A		20	11/27/18 12:37	C8K0460	CK82108
Aroclor 1268	ND (1.2)		8082A		20	11/27/18 12:37	C8K0460	CK82108

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-50-112118 2FT
Date Sampled: 11/21/18 11:06
Percent Solids: 91
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811571
ESS Laboratory Sample ID: 1811571-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/21/18 17:16

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.1)		8082A		20	11/27/18 12:57	C8K0460	CK82108
Aroclor 1221	ND (1.1)		8082A		20	11/27/18 12:57	C8K0460	CK82108
Aroclor 1232	ND (1.1)		8082A		20	11/27/18 12:57	C8K0460	CK82108
Aroclor 1242	ND (1.1)		8082A		20	11/27/18 12:57	C8K0460	CK82108
Aroclor 1248	ND (1.1)		8082A		20	11/27/18 12:57	C8K0460	CK82108
Aroclor 1254 [2C]	**7.9** (1.1)		8082A		20	11/27/18 12:57	C8K0460	CK82108
Aroclor 1260	ND (1.1)		8082A		20	11/27/18 12:57	C8K0460	CK82108
Aroclor 1262	ND (1.1)		8082A		20	11/27/18 12:57	C8K0460	CK82108
Aroclor 1268	ND (1.1)		8082A		20	11/27/18 12:57	C8K0460	CK82108

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-55-112118 2FT
Date Sampled: 11/21/18 11:11
Percent Solids: 85
Initial Volume: 20.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811571
ESS Laboratory Sample ID: 1811571-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/21/18 17:16

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	11/26/18 18:12	C8K0429	CK82108
Aroclor 1221	ND (0.06)		8082A		1	11/26/18 18:12	C8K0429	CK82108
Aroclor 1232	ND (0.06)		8082A		1	11/26/18 18:12	C8K0429	CK82108
Aroclor 1242	ND (0.06)		8082A		1	11/26/18 18:12	C8K0429	CK82108
Aroclor 1248	ND (0.06)		8082A		1	11/26/18 18:12	C8K0429	CK82108
Aroclor 1254 [2C]	**LC, P 0.9** (0.06)		8082A		1	11/26/18 18:12	C8K0429	CK82108
Aroclor 1260	ND (0.06)		8082A		1	11/26/18 18:12	C8K0429	CK82108
Aroclor 1262	ND (0.06)		8082A		1	11/26/18 18:12	C8K0429	CK82108
Aroclor 1268	ND (0.06)		8082A		1	11/26/18 18:12	C8K0429	CK82108

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*106 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*241 %*	*SM*	*30-150*
Surrogate: Tetrachloro-m-xylene	*40 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*77 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-60-112118 2FT
Date Sampled: 11/21/18 11:16
Percent Solids: 85
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811571
ESS Laboratory Sample ID: 1811571-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/21/18 17:16

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.3)		8082A		5	11/27/18 13:16	C8K0460	CK82108
Aroclor 1221	ND (0.3)		8082A		5	11/27/18 13:16	C8K0460	CK82108
Aroclor 1232	ND (0.3)		8082A		5	11/27/18 13:16	C8K0460	CK82108
Aroclor 1242	ND (0.3)		8082A		5	11/27/18 13:16	C8K0460	CK82108
Aroclor 1248	ND (0.3)		8082A		5	11/27/18 13:16	C8K0460	CK82108
Aroclor 1254 [2C]	**LC, P 4.9** (0.3)		8082A		5	11/27/18 13:16	C8K0460	CK82108
Aroclor 1260	ND (0.3)		8082A		5	11/27/18 13:16	C8K0460	CK82108
Aroclor 1262	ND (0.3)		8082A		5	11/27/18 13:16	C8K0460	CK82108
Aroclor 1268	ND (0.3)		8082A		5	11/27/18 13:16	C8K0460	CK82108

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*2050 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*216 %*	*SM*	*30-150*
Surrogate: Tetrachloro-m-xylene	*6570 %*	*SM*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*573 %*	*SM*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-40-112118 0-2FT
Date Sampled: 11/21/18 11:23
Percent Solids: 88
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811571
ESS Laboratory Sample ID: 1811571-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/21/18 17:16

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.2)		8082A		20	11/27/18 13:35	C8K0460	CK82108
Aroclor 1221	ND (1.2)		8082A		20	11/27/18 13:35	C8K0460	CK82108
Aroclor 1232	ND (1.2)		8082A		20	11/27/18 13:35	C8K0460	CK82108
Aroclor 1242	ND (1.2)		8082A		20	11/27/18 13:35	C8K0460	CK82108
Aroclor 1248	ND (1.2)		8082A		20	11/27/18 13:35	C8K0460	CK82108
Aroclor 1254 [2C]	**15.6** (1.2)		8082A		20	11/27/18 13:35	C8K0460	CK82108
Aroclor 1260	ND (1.2)		8082A		20	11/27/18 13:35	C8K0460	CK82108
Aroclor 1262	ND (1.2)		8082A		20	11/27/18 13:35	C8K0460	CK82108
Aroclor 1268	ND (1.2)		8082A		20	11/27/18 13:35	C8K0460	CK82108

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-45-112118 0-2FT
Date Sampled: 11/21/18 11:28
Percent Solids: 88
Initial Volume: 19.8
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811571
ESS Laboratory Sample ID: 1811571-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/21/18 17:16

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.2)		8082A		20	11/27/18 13:54	C8K0460	CK82108
Aroclor 1221	ND (1.2)		8082A		20	11/27/18 13:54	C8K0460	CK82108
Aroclor 1232	ND (1.2)		8082A		20	11/27/18 13:54	C8K0460	CK82108
Aroclor 1242	ND (1.2)		8082A		20	11/27/18 13:54	C8K0460	CK82108
Aroclor 1248	ND (1.2)		8082A		20	11/27/18 13:54	C8K0460	CK82108
Aroclor 1254	**11.5** (1.2)		8082A		20	11/27/18 13:54	C8K0460	CK82108
Aroclor 1260	ND (1.2)		8082A		20	11/27/18 13:54	C8K0460	CK82108
Aroclor 1262	ND (1.2)		8082A		20	11/27/18 13:54	C8K0460	CK82108
Aroclor 1268	ND (1.2)		8082A		20	11/27/18 13:54	C8K0460	CK82108

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*%*	*SD*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*%*	*SD*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-25-112118 1FT
Date Sampled: 11/21/18 11:35
Percent Solids: 88
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811571
ESS Laboratory Sample ID: 1811571-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/21/18 17:16

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (2.9)		8082A		50	11/27/18 14:13	C8K0460	CK82108
Aroclor 1221	ND (2.9)		8082A		50	11/27/18 14:13	C8K0460	CK82108
Aroclor 1232	ND (2.9)		8082A		50	11/27/18 14:13	C8K0460	CK82108
Aroclor 1242	ND (2.9)		8082A		50	11/27/18 14:13	C8K0460	CK82108
Aroclor 1248	ND (2.9)		8082A		50	11/27/18 14:13	C8K0460	CK82108
Aroclor 1254	**22.8** (2.9)		8082A		50	11/27/18 14:13	C8K0460	CK82108
Aroclor 1260	ND (2.9)		8082A		50	11/27/18 14:13	C8K0460	CK82108
Aroclor 1262	ND (2.9)		8082A		50	11/27/18 14:13	C8K0460	CK82108
Aroclor 1268	ND (2.9)		8082A		50	11/27/18 14:13	C8K0460	CK82108

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-30-112118 1FT
Date Sampled: 11/21/18 11:40
Percent Solids: 89
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811571
ESS Laboratory Sample ID: 1811571-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/21/18 17:16

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (2.9)		8082A		50	11/27/18 14:33	C8K0460	CK82108
Aroclor 1221	ND (2.9)		8082A		50	11/27/18 14:33	C8K0460	CK82108
Aroclor 1232	ND (2.9)		8082A		50	11/27/18 14:33	C8K0460	CK82108
Aroclor 1242	ND (2.9)		8082A		50	11/27/18 14:33	C8K0460	CK82108
Aroclor 1248	ND (2.9)		8082A		50	11/27/18 14:33	C8K0460	CK82108
Aroclor 1254 [2C]	**26.1** (2.9)		8082A		50	11/27/18 14:33	C8K0460	CK82108
Aroclor 1260	ND (2.9)		8082A		50	11/27/18 14:33	C8K0460	CK82108
Aroclor 1262	ND (2.9)		8082A		50	11/27/18 14:33	C8K0460	CK82108
Aroclor 1268	ND (2.9)		8082A		50	11/27/18 14:33	C8K0460	CK82108

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-35-112118 1FT
Date Sampled: 11/21/18 11:45
Percent Solids: 89
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811571
ESS Laboratory Sample ID: 1811571-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/21/18 17:16

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.1)		8082A		20	11/27/18 14:52	C8K0460	CK82108
Aroclor 1221	ND (1.1)		8082A		20	11/27/18 14:52	C8K0460	CK82108
Aroclor 1232	ND (1.1)		8082A		20	11/27/18 14:52	C8K0460	CK82108
Aroclor 1242	ND (1.1)		8082A		20	11/27/18 14:52	C8K0460	CK82108
Aroclor 1248	ND (1.1)		8082A		20	11/27/18 14:52	C8K0460	CK82108
Aroclor 1254 [2C]	**10.3** (1.1)		8082A		20	11/27/18 14:52	C8K0460	CK82108
Aroclor 1260	ND (1.1)		8082A		20	11/27/18 14:52	C8K0460	CK82108
Aroclor 1262	ND (1.1)		8082A		20	11/27/18 14:52	C8K0460	CK82108
Aroclor 1268	ND (1.1)		8082A		20	11/27/18 14:52	C8K0460	CK82108

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-40-112118 1FT
Date Sampled: 11/21/18 11:50
Percent Solids: 90
Initial Volume: 19.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811571
ESS Laboratory Sample ID: 1811571-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/21/18 17:16

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (2.9)		8082A		50	11/27/18 15:11	C8K0460	CK82108
Aroclor 1221	ND (2.9)		8082A		50	11/27/18 15:11	C8K0460	CK82108
Aroclor 1232	ND (2.9)		8082A		50	11/27/18 15:11	C8K0460	CK82108
Aroclor 1242	ND (2.9)		8082A		50	11/27/18 15:11	C8K0460	CK82108
Aroclor 1248	ND (2.9)		8082A		50	11/27/18 15:11	C8K0460	CK82108
Aroclor 1254 [2C]	**31.2** (2.9)		8082A		50	11/27/18 15:11	C8K0460	CK82108
Aroclor 1260	ND (2.9)		8082A		50	11/27/18 15:11	C8K0460	CK82108
Aroclor 1262	ND (2.9)		8082A		50	11/27/18 15:11	C8K0460	CK82108
Aroclor 1268	ND (2.9)		8082A		50	11/27/18 15:11	C8K0460	CK82108

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-65-112118 1FT
Date Sampled: 11/21/18 11:57
Percent Solids: 92
Initial Volume: 19.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811571
ESS Laboratory Sample ID: 1811571-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/21/18 17:16

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	11/26/18 22:41	C8K0429	CK82108
Aroclor 1221	ND (0.06)		8082A		1	11/26/18 22:41	C8K0429	CK82108
Aroclor 1232	ND (0.06)		8082A		1	11/26/18 22:41	C8K0429	CK82108
Aroclor 1242	ND (0.06)		8082A		1	11/26/18 22:41	C8K0429	CK82108
Aroclor 1248	ND (0.06)		8082A		1	11/26/18 22:41	C8K0429	CK82108
Aroclor 1254 [2C]	**2.1** (0.3)		8082A		5	11/27/18 15:30	C8K0429	CK82108
Aroclor 1260	ND (0.06)		8082A		1	11/26/18 22:41	C8K0429	CK82108
Aroclor 1262	ND (0.06)		8082A		1	11/26/18 22:41	C8K0429	CK82108
Aroclor 1268	ND (0.06)		8082A		1	11/26/18 22:41	C8K0429	CK82108

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*115 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*1470 %*	*SM*	*30-150*
Surrogate: Tetrachloro-m-xylene	*86 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*98 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-65-112118-1 1FT
Date Sampled: 11/21/18 11:57
Percent Solids: 93
Initial Volume: 19.8
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811571
ESS Laboratory Sample ID: 1811571-12
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/21/18 17:16

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	11/26/18 23:38	C8K0429	CK82108
Aroclor 1221	ND (0.05)		8082A		1	11/26/18 23:38	C8K0429	CK82108
Aroclor 1232	ND (0.05)		8082A		1	11/26/18 23:38	C8K0429	CK82108
Aroclor 1242	ND (0.05)		8082A		1	11/26/18 23:38	C8K0429	CK82108
Aroclor 1248	ND (0.05)		8082A		1	11/26/18 23:38	C8K0429	CK82108
Aroclor 1254 [2C]	**1.4** (0.3)		8082A		5	11/27/18 15:49	C8K0429	CK82108
Aroclor 1260	ND (0.05)		8082A		1	11/26/18 23:38	C8K0429	CK82108
Aroclor 1262	ND (0.05)		8082A		1	11/26/18 23:38	C8K0429	CK82108
Aroclor 1268	ND (0.05)		8082A		1	11/26/18 23:38	C8K0429	CK82108

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*67 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*117 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*92 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-349-112018-B 7FT
Date Sampled: 11/20/18 14:35
Percent Solids: 85
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811571
ESS Laboratory Sample ID: 1811571-13
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/21/18 17:16

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	11/26/18 23:57	C8K0429	CK82108
Aroclor 1221	ND (0.06)		8082A		1	11/26/18 23:57	C8K0429	CK82108
Aroclor 1232	ND (0.06)		8082A		1	11/26/18 23:57	C8K0429	CK82108
Aroclor 1242	ND (0.06)		8082A		1	11/26/18 23:57	C8K0429	CK82108
Aroclor 1248	ND (0.06)		8082A		1	11/26/18 23:57	C8K0429	CK82108
Aroclor 1254 [2C]	**0.5** (0.06)		8082A		1	11/26/18 23:57	C8K0429	CK82108
Aroclor 1260	ND (0.06)		8082A		1	11/26/18 23:57	C8K0429	CK82108
Aroclor 1262	ND (0.06)		8082A		1	11/26/18 23:57	C8K0429	CK82108
Aroclor 1268	ND (0.06)		8082A		1	11/26/18 23:57	C8K0429	CK82108

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*75 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*156 %*	*SM*	*30-150*
Surrogate: Tetrachloro-m-xylene	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*98 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1811571

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CK82108 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0192*		mg/kg wet	*0.02500*		*77*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0202*		mg/kg wet	*0.02500*		*81*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0187*		mg/kg wet	*0.02500*		*75*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0204*		mg/kg wet	*0.02500*		*82*	*30-150*			
LCS										
Aroclor 1016	0.4	0.05	mg/kg wet	0.5000		89	40-140			
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		93	40-140			
Aroclor 1260	0.4	0.05	mg/kg wet	0.5000		85	40-140			
Aroclor 1260 [2C]	0.4	0.05	mg/kg wet	0.5000		83	40-140			
Surrogate: Decachlorobiphenyl	*0.0199*		mg/kg wet	*0.02500*		*80*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0198*		mg/kg wet	*0.02500*		*79*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0200*		mg/kg wet	*0.02500*		*80*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0208*		mg/kg wet	*0.02500*		*83*	*30-150*			
LCS Dup										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		92	40-140	3	30	
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		96	40-140	3	30	
Aroclor 1260	0.4	0.05	mg/kg wet	0.5000		88	40-140	4	30	
Aroclor 1260 [2C]	0.4	0.05	mg/kg wet	0.5000		86	40-140	4	30	
Surrogate: Decachlorobiphenyl	*0.0205*		mg/kg wet	*0.02500*		*82*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0204*		mg/kg wet	*0.02500*		*82*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0203*		mg/kg wet	*0.02500*		*81*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0211*		mg/kg wet	*0.02500*		*84*	*30-150*			
Matrix Spike **Source: 1811571-11**										

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1811571

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CK82108 - 3540C										
Aroclor 1016	0.7	0.06	mg/kg dry	0.5571	ND	125	40-140			
Aroclor 1016 [2C]	0.8	0.06	mg/kg dry	0.5571	ND	152	40-140			MT
Aroclor 1260	0.9	0.06	mg/kg dry	0.5571	ND	158	40-140			MT
Aroclor 1260 [2C]	0.8	0.06	mg/kg dry	0.5571	ND	152	40-140			MT
Surrogate: Decachlorobiphenyl	*0.0184*		mg/kg dry	*0.02786*		*66*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0475*		mg/kg dry	*0.02786*		*171*	*30-150*			*S+*
Surrogate: Tetrachloro-m-xylene	*0.0239*		mg/kg dry	*0.02786*		*86*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0257*		mg/kg dry	*0.02786*		*92*	*30-150*			
Matrix Spike Dup Source: 1811571-11										
Aroclor 1016	0.8	0.06	mg/kg dry	0.5658	ND	137	40-140	11	30	
Aroclor 1016 [2C]	0.8	0.06	mg/kg dry	0.5658	ND	147	40-140	2	30	MT
Aroclor 1260	0.9	0.06	mg/kg dry	0.5658	ND	152	40-140	3	30	MT
Aroclor 1260 [2C]	0.8	0.06	mg/kg dry	0.5658	ND	133	40-140	12	30	
Surrogate: Decachlorobiphenyl	*0.0234*		mg/kg dry	*0.02829*		*83*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0235*		mg/kg dry	*0.02829*		*83*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0229*		mg/kg dry	*0.02829*		*81*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0257*		mg/kg dry	*0.02829*		*91*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
ESS Laboratory Work Order: 1811571

Notes and Definitions

U	Analyte included in the analysis, but not detected
SM	Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).
SD	Surrogate recovery(ies) diluted below the MRL (SD).
S+	Surrogate recovery(ies) above upper control limit (S+).
P	Percent difference between primary and confirmation results exceeds 40% (P).
MT	Due to high target values, matrix spike analyte(s) is masked (MT).
LC	Lower value is used due to matrix interferences (LC).
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1811571

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: AEI Consultants, Inc. - TB/MM

Shipped/Delivered Via: Client

ESS Project ID: 1811571
Date Received: 11/21/2018
Project Due Date: 11/27/2018
Days for Project: 2 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 1.0 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	292618	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	292617	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	292616	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	292615	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
05	292614	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
06	292613	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
07	292612	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
08	292611	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
09	292610	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
10	292609	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
11	292608	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
11	292619	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
11	292620	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
12	292607	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
13	292606	Yes	NA	Yes	4 oz. Jar - Unpres	NP	

2nd Review
Are barcode labels on correct containers? Yes / No
Are all necessary stickers attached? Yes / No

Completed By: Date & Time: 11/21/18 1603
Reviewed

ESS Laboratory Sample and Cooler Receipt Checklist

Client: ARI Consultants, Inc. - TB/MM

ESS Project ID: 1811571

Date Received: 11/21/2018

By: [signature]

Date & Time: 11/21/18 1652

Delivered By: [signature]

11/21/18 1652

ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1811571

Turn Time Rush 48 hr

Reporting Limits See note 1

Regulatory State RI

Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP

Electonic Deliverables ☒Limit Checker ☒Standard Excel ☒Other (Please Specify →) PDF

Company Name: AEI

Project #: 363655

Project Name: BASF Cranston

Contact Person: Aaron Ting

Address: 112 water St, 5th floor

City: BOSTON

State: MA

Zip Code: 02109

PO #:

Telephone Number: (978) 577-7138

FAX Number:

Email Address: ating@aeiconsultants.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: PCBs (Soxhlet)
1	11/21/15	1105	G	S	B-49-112118 (2')	X
2	↓	1106	↓	↓	B-50-112118 (2')	X
3		1111			B-55-112118 (2')	X
4		1116			B-60-112118 (2')	X
5		1123	C		SW-40-112118 (0-2')	X
6		1128	↓		SW-45-112118 (0-2')	X
7		1135	G		B-25-112118 (1')	X
8		1140			B-30-112118 (1')	X
9		1145			B-35-112118 (1')	X
10	↓	1150	↓	↓	B-40-112118 (1')	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* 12-Other*

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Ascorbic Acid 12-Other*

Number of Containers per Sample:	AG
	9
	1
	1

Laboratory Use Only

Cooler Present: Yes

Seals Intact: ice

Cooler Temperature: 1.0 °C

Sampled by: A Ting

Comments: Please specify "Other" preservative and containers types in this space

Note 1: See project QAPP

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
11-21-18 1359	11/21/18 1359		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 181571

Turn Time Rush 48 hr
Regulatory State RI
Reporting Limits See note 1
Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP
Electonic Deliverables ☒Limit Checker ☒Standard Excel ☒Other (Please Specify →) PDF

Company Name	Project #	Project Name
AEI	363655	BASF Cranston

Contact Person	Address
Aaron Ting	112 water St, 5th floor

City	State	Zip Code	PO #
BOSTON	MA	02109	—

Telephone Number	FAX Number	Email Address
(978) 577-7138	—	ating@aeiconsultants.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: PCBs (Soxhlet)
11	11/21/18	1157	G	S	B-65-112118 (1')	X
12	↓	1157	↓	↓	B-65-112118 (-1 (1') ACT)	X
11	↓	1157	↓	↓	B-65-112118 (1') MS/MSD	X
13	11/20/18	1435	C	S	B-349-112018 -B (7')	X

Container Type:	AC-Air Cassette	AG-Amber Glass	B-BOD Bottle	C-Cubitainer	G - Glass	O-Other	P-Poly	S-Sterile	V-Vial	AG		
Container Volume:	1-100 mL	2-2.5 gal	3-250 mL	4-300 mL	5-500 mL	6-1L	7-VOA	8-2 oz	9-4 oz	10-8 oz	11-Other*	9
Preservation Code:	1-Non Preserved	2-HCl	3-H2SO4	4-HNO3	5-NaOH	6-Methanol	7-Na2S2O3	8-ZnAce, NaOH	9-NH4Cl	10-DI H2O	11-Ascorbic Acid	12-Other*
Number of Containers per Sample:												1

Laboratory Use Only
Cooler Present: yes
Seals Intact: —
Cooler Temperature: 1.0 °C

Sampled by: A Ting
Comments: Please specify "Other" preservative and containers types in this space
Note 1: See project QAPP

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
11-21-18 1359	11/21/18 1359		
Relinquished by: (Signature, Date & Time)	**Received By: (Signature, Date & Time)**	**Relinquished By: (Signature, Date & Time)**	**Received By: (Signature, Date & Time)**

CERTIFICATE OF ANALYSIS

Richard Kowalski
AEI Consultants, Inc.
148 Hathaway Road
Dartmouth, MA 02747

RE: BASF Cranston (363655)
ESS Laboratory Work Order Number: 1811612

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 2:53 pm, Nov 30, 2018

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1811612

SAMPLE RECEIPT

The following samples were received on November 26, 2018 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice and therefore meet regulatory criteria.

Lab Number	Sample Name	Matrix	Analysis
1811612-01	B-49-112118 2FT	Soil	8082A
1811612-02	B-49-112118-1 2FT	Soil	8082A
1811612-03	B-51-112118 2FT	Soil	8082A
1811612-04	B-52-112118 2FT	Soil	8082A
1811612-05	B-52-112118-1 2FT	Soil	8082A
1811612-06	B-53-112118 2FT	Soil	8082A
1811612-07	B-54-112118 2FT	Soil	8082A
1811612-08	B-54-112118-1 2FT	Soil	8082A
1811612-09	B-56-112118 2FT	Soil	8082A
1811612-10	B-57-112118 2FT	Soil	8082A
1811612-11	B-56-112118-1 2FT	Soil	8082A
1811612-12	B-58-112118 2FT	Soil	8082A
1811612-13	B-58-112118-1 2FT	Soil	8082A
1811612-14	B-59-112118 2FT	Soil	8082A
1811612-15	B-61-112118 2FT	Soil	8082A
1811612-16	B-62-112118 2FT	Soil	8082A
1811612-17	B-62-112118-1 2FT	Soil	8082A
1811612-18	B-63-112118 2FT	Soil	8082A
1811612-19	B-64-112118 2FT	Soil	8082A
1811612-20	SW-38-112118 0-2FT	Soil	8082A

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1811612

PROJECT NARRATIVE

8082A Polychlorinated Biphenyls (PCB)

1811612-01 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811612-02 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811612-03 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811612-04 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811612-05 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811612-06 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Tetrachloro-m-xylene [2C] (277% @ 30-150%)

1811612-07 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (5140% @ 30-150%)

1811612-08 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl [2C] (320% @ 30-150%)

1811612-09 **Lower value is used due to matrix interferences (LC).**
Aroclor 1254

1811612-09 **Percent difference between primary and confirmation results exceeds 40% (P).**
Aroclor 1254

1811612-09 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Tetrachloro-m-xylene [2C] (1010% @ 30-150%)

1811612-10 **Lower value is used due to matrix interferences (LC).**
Aroclor 1254

1811612-10 **Percent difference between primary and confirmation results exceeds 40% (P).**
Aroclor 1254

1811612-10 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (367% @ 30-150%), Decachlorobiphenyl [2C] (226% @ 30-150%), Tetrachloro-m-xylene [2C] (684% @ 30-150%)

1811612-11 **Lower value is used due to matrix interferences (LC).**
Aroclor 1254

1811612-11 **Percent difference between primary and confirmation results exceeds 40% (P).**
Aroclor 1254

1811612-11 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston ESS Laboratory Work Order: 1811612

1811612-12 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Tetrachloro-m-xylene [2C] (2430% @ 30-150%)

1811612-13 **Lower value is used due to matrix interferences (LC).**
Aroclor 1254

1811612-13 **Percent difference between primary and confirmation results exceeds 40% (P).**
Aroclor 1254

1811612-13 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Tetrachloro-m-xylene [2C] (1670% @ 30-150%)

1811612-14 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (449% @ 30-150%), Tetrachloro-m-xylene [2C] (4410% @ 30-150%)

1811612-15 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811612-16 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Tetrachloro-m-xylene [2C] (184% @ 30-150%)

1811612-17 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Tetrachloro-m-xylene [2C] (170% @ 30-150%)

1811612-18 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (4190% @ 30-150%), Decachlorobiphenyl [2C] (2640% @ 30-150%), Tetrachloro-m-xylene (1000% @ 30-150%), Tetrachloro-m-xylene [2C] (8460% @ 30-150%)

1811612-19 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (292% @ 30-150%)

1811612-20 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (64800% @ 30-150%), Decachlorobiphenyl [2C] (30200% @ 30-150%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

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Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1811612

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 04-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-49-112118 2FT
Date Sampled: 11/21/18 11:05
Percent Solids: 90
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (2.9)		8082A		50	11/30/18 4:18	C8K0495	CK82705
Aroclor 1221	ND (2.9)		8082A		50	11/30/18 4:18	C8K0495	CK82705
Aroclor 1232	ND (2.9)		8082A		50	11/30/18 4:18	C8K0495	CK82705
Aroclor 1242	ND (2.9)		8082A		50	11/30/18 4:18	C8K0495	CK82705
Aroclor 1248	ND (2.9)		8082A		50	11/30/18 4:18	C8K0495	CK82705
Aroclor 1254 [2C]	**20.4** (2.9)		8082A		50	11/30/18 4:18	C8K0495	CK82705
Aroclor 1260	ND (2.9)		8082A		50	11/30/18 4:18	C8K0495	CK82705
Aroclor 1262	ND (2.9)		8082A		50	11/30/18 4:18	C8K0495	CK82705
Aroclor 1268	ND (2.9)		8082A		50	11/30/18 4:18	C8K0495	CK82705

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-49-112118-1 2FT
Date Sampled: 11/21/18 11:05
Percent Solids: 89
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (2.9)		8082A		50	11/30/18 4:37	C8K0495	CK82705
Aroclor 1221	ND (2.9)		8082A		50	11/30/18 4:37	C8K0495	CK82705
Aroclor 1232	ND (2.9)		8082A		50	11/30/18 4:37	C8K0495	CK82705
Aroclor 1242	ND (2.9)		8082A		50	11/30/18 4:37	C8K0495	CK82705
Aroclor 1248	ND (2.9)		8082A		50	11/30/18 4:37	C8K0495	CK82705
Aroclor 1254 [2C]	**21.0** (2.9)		8082A		50	11/30/18 4:37	C8K0495	CK82705
Aroclor 1260	ND (2.9)		8082A		50	11/30/18 4:37	C8K0495	CK82705
Aroclor 1262	ND (2.9)		8082A		50	11/30/18 4:37	C8K0495	CK82705
Aroclor 1268	ND (2.9)		8082A		50	11/30/18 4:37	C8K0495	CK82705

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-51-112118 2FT
Date Sampled: 11/21/18 11:07
Percent Solids: 91
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.1)		8082A		20	11/30/18 4:56	C8K0495	CK82705
Aroclor 1221	ND (1.1)		8082A		20	11/30/18 4:56	C8K0495	CK82705
Aroclor 1232	ND (1.1)		8082A		20	11/30/18 4:56	C8K0495	CK82705
Aroclor 1242	ND (1.1)		8082A		20	11/30/18 4:56	C8K0495	CK82705
Aroclor 1248	ND (1.1)		8082A		20	11/30/18 4:56	C8K0495	CK82705
Aroclor 1254 [2C]	**11.6** (1.1)		8082A		20	11/30/18 4:56	C8K0495	CK82705
Aroclor 1260	ND (1.1)		8082A		20	11/30/18 4:56	C8K0495	CK82705
Aroclor 1262	ND (1.1)		8082A		20	11/30/18 4:56	C8K0495	CK82705
Aroclor 1268	ND (1.1)		8082A		20	11/30/18 4:56	C8K0495	CK82705

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*%*	*SD*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*%*	*SD*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-52-112118 2FT
Date Sampled: 11/21/18 11:08
Percent Solids: 86
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.2)		8082A		20	11/30/18 5:16	C8K0495	CK82705
Aroclor 1221	ND (1.2)		8082A		20	11/30/18 5:16	C8K0495	CK82705
Aroclor 1232	ND (1.2)		8082A		20	11/30/18 5:16	C8K0495	CK82705
Aroclor 1242	ND (1.2)		8082A		20	11/30/18 5:16	C8K0495	CK82705
Aroclor 1248	ND (1.2)		8082A		20	11/30/18 5:16	C8K0495	CK82705
Aroclor 1254	**10.2** (1.2)		8082A		20	11/30/18 5:16	C8K0495	CK82705
Aroclor 1260	ND (1.2)		8082A		20	11/30/18 5:16	C8K0495	CK82705
Aroclor 1262	ND (1.2)		8082A		20	11/30/18 5:16	C8K0495	CK82705
Aroclor 1268	ND (1.2)		8082A		20	11/30/18 5:16	C8K0495	CK82705

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-52-112118-1 2FT
Date Sampled: 11/21/18 11:08
Percent Solids: 87
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.2)		8082A		20	11/30/18 5:35	C8K0495	CK82705
Aroclor 1221	ND (1.2)		8082A		20	11/30/18 5:35	C8K0495	CK82705
Aroclor 1232	ND (1.2)		8082A		20	11/30/18 5:35	C8K0495	CK82705
Aroclor 1242	ND (1.2)		8082A		20	11/30/18 5:35	C8K0495	CK82705
Aroclor 1248	ND (1.2)		8082A		20	11/30/18 5:35	C8K0495	CK82705
Aroclor 1254 [2C]	**12.6** (1.2)		8082A		20	11/30/18 5:35	C8K0495	CK82705
Aroclor 1260	ND (1.2)		8082A		20	11/30/18 5:35	C8K0495	CK82705
Aroclor 1262	ND (1.2)		8082A		20	11/30/18 5:35	C8K0495	CK82705
Aroclor 1268	ND (1.2)		8082A		20	11/30/18 5:35	C8K0495	CK82705

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-53-112118 2FT
Date Sampled: 11/21/18 11:09
Percent Solids: 88
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.3)		8082A		5	11/29/18 23:49	C8K0495	CK83022
Aroclor 1221	ND (0.3)		8082A		5	11/29/18 23:49	C8K0495	CK83022
Aroclor 1232	ND (0.3)		8082A		5	11/29/18 23:49	C8K0495	CK83022
Aroclor 1242	ND (0.3)		8082A		5	11/29/18 23:49	C8K0495	CK83022
Aroclor 1248	ND (0.3)		8082A		5	11/29/18 23:49	C8K0495	CK83022
Aroclor 1254	**3.3** (0.3)		8082A		5	11/29/18 23:49	C8K0495	CK83022
Aroclor 1260	ND (0.3)		8082A		5	11/29/18 23:49	C8K0495	CK83022
Aroclor 1262	ND (0.3)		8082A		5	11/29/18 23:49	C8K0495	CK83022
Aroclor 1268	ND (0.3)		8082A		5	11/29/18 23:49	C8K0495	CK83022

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*102 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*114 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*66 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*277 %*	*SM*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-54-112118 2FT
Date Sampled: 11/21/18 11:10
Percent Solids: 93
Initial Volume: 20.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	11/28/18 22:52	C8K0494	CK82705
Aroclor 1221	ND (0.05)		8082A		1	11/28/18 22:52	C8K0494	CK82705
Aroclor 1232	ND (0.05)		8082A		1	11/28/18 22:52	C8K0494	CK82705
Aroclor 1242	ND (0.05)		8082A		1	11/28/18 22:52	C8K0494	CK82705
Aroclor 1248	ND (0.05)		8082A		1	11/28/18 22:52	C8K0494	CK82705
Aroclor 1254	**0.8** (0.05)		8082A		1	11/28/18 22:52	C8K0494	CK82705
Aroclor 1260	ND (0.05)		8082A		1	11/28/18 22:52	C8K0494	CK82705
Aroclor 1262	ND (0.05)		8082A		1	11/28/18 22:52	C8K0494	CK82705
Aroclor 1268	ND (0.05)		8082A		1	11/28/18 22:52	C8K0494	CK82705

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*5140 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*144 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*94 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*91 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-54-112118-1 2FT
Date Sampled: 11/21/18 11:10
Percent Solids: 94
Initial Volume: 20
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	11/28/18 23:11	C8K0494	CK82705
Aroclor 1221	ND (0.05)		8082A		1	11/28/18 23:11	C8K0494	CK82705
Aroclor 1232	ND (0.05)		8082A		1	11/28/18 23:11	C8K0494	CK82705
Aroclor 1242	ND (0.05)		8082A		1	11/28/18 23:11	C8K0494	CK82705
Aroclor 1248	ND (0.05)		8082A		1	11/28/18 23:11	C8K0494	CK82705
Aroclor 1254 [2C]	**1.0** (0.05)		8082A		1	11/28/18 23:11	C8K0494	CK82705
Aroclor 1260	ND (0.05)		8082A		1	11/28/18 23:11	C8K0494	CK82705
Aroclor 1262	ND (0.05)		8082A		1	11/28/18 23:11	C8K0494	CK82705
Aroclor 1268	ND (0.05)		8082A		1	11/28/18 23:11	C8K0494	CK82705

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*120 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*320 %*	*SM*	*30-150*
Surrogate: Tetrachloro-m-xylene	*115 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*96 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-56-112118 2FT
Date Sampled: 11/21/18 11:12
Percent Solids: 88
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	11/30/18 0:08	C8K0495	CK83022
Aroclor 1221	ND (0.6)		8082A		10	11/30/18 0:08	C8K0495	CK83022
Aroclor 1232	ND (0.6)		8082A		10	11/30/18 0:08	C8K0495	CK83022
Aroclor 1242	ND (0.6)		8082A		10	11/30/18 0:08	C8K0495	CK83022
Aroclor 1248	ND (0.6)		8082A		10	11/30/18 0:08	C8K0495	CK83022
Aroclor 1254	**LC, P 6.7** (0.6)		8082A		10	11/30/18 0:08	C8K0495	CK83022
Aroclor 1260	ND (0.6)		8082A		10	11/30/18 0:08	C8K0495	CK83022
Aroclor 1262	ND (0.6)		8082A		10	11/30/18 0:08	C8K0495	CK83022
Aroclor 1268	ND (0.6)		8082A		10	11/30/18 0:08	C8K0495	CK83022

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*42 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*123 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*49 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*1010 %*	*SM*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-57-112118 2FT
Date Sampled: 11/21/18 11:13
Percent Solids: 86
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.3)		8082A		5	11/30/18 0:27	C8K0495	CK83022
Aroclor 1221	ND (0.3)		8082A		5	11/30/18 0:27	C8K0495	CK83022
Aroclor 1232	ND (0.3)		8082A		5	11/30/18 0:27	C8K0495	CK83022
Aroclor 1242	ND (0.3)		8082A		5	11/30/18 0:27	C8K0495	CK83022
Aroclor 1248	ND (0.3)		8082A		5	11/30/18 0:27	C8K0495	CK83022
Aroclor 1254	**LC, P 1.2** (0.3)		8082A		5	11/30/18 0:27	C8K0495	CK83022
Aroclor 1260	ND (0.3)		8082A		5	11/30/18 0:27	C8K0495	CK83022
Aroclor 1262	ND (0.3)		8082A		5	11/30/18 0:27	C8K0495	CK83022
Aroclor 1268	ND (0.3)		8082A		5	11/30/18 0:27	C8K0495	CK83022

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*367 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*226 %*	*SM*	*30-150*
Surrogate: Tetrachloro-m-xylene	*47 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*684 %*	*SM*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-56-112118-1 2FT
Date Sampled: 11/21/18 11:12
Percent Solids: 86
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.2)		8082A		20	11/30/18 5:54	C8K0495	CK82705
Aroclor 1221	ND (1.2)		8082A		20	11/30/18 5:54	C8K0495	CK82705
Aroclor 1232	ND (1.2)		8082A		20	11/30/18 5:54	C8K0495	CK82705
Aroclor 1242	ND (1.2)		8082A		20	11/30/18 5:54	C8K0495	CK82705
Aroclor 1248	ND (1.2)		8082A		20	11/30/18 5:54	C8K0495	CK82705
Aroclor 1254	**LC, P 6.9** (1.2)		8082A		20	11/30/18 5:54	C8K0495	CK82705
Aroclor 1260	ND (1.2)		8082A		20	11/30/18 5:54	C8K0495	CK82705
Aroclor 1262	ND (1.2)		8082A		20	11/30/18 5:54	C8K0495	CK82705
Aroclor 1268	ND (1.2)		8082A		20	11/30/18 5:54	C8K0495	CK82705

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-58-112118 2FT
Date Sampled: 11/21/18 11:14
Percent Solids: 88
Initial Volume: 20.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-12
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.3)		8082A		5	11/30/18 0:46	C8K0495	CK83022
Aroclor 1221	ND (0.3)		8082A		5	11/30/18 0:46	C8K0495	CK83022
Aroclor 1232	ND (0.3)		8082A		5	11/30/18 0:46	C8K0495	CK83022
Aroclor 1242	ND (0.3)		8082A		5	11/30/18 0:46	C8K0495	CK83022
Aroclor 1248	ND (0.3)		8082A		5	11/30/18 0:46	C8K0495	CK83022
Aroclor 1254 [2C]	**3.0** (0.3)		8082A		5	11/30/18 0:46	C8K0495	CK83022
Aroclor 1260	ND (0.3)		8082A		5	11/30/18 0:46	C8K0495	CK83022
Aroclor 1262	ND (0.3)		8082A		5	11/30/18 0:46	C8K0495	CK83022
Aroclor 1268	ND (0.3)		8082A		5	11/30/18 0:46	C8K0495	CK83022

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*79 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*146 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*56 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*2430 %*	*SM*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-58-112118-1 2FT
Date Sampled: 11/21/18 11:14
Percent Solids: 87
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-13
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.3)		8082A		5	11/30/18 3:01	C8K0495	CK83022
Aroclor 1221	ND (0.3)		8082A		5	11/30/18 3:01	C8K0495	CK83022
Aroclor 1232	ND (0.3)		8082A		5	11/30/18 3:01	C8K0495	CK83022
Aroclor 1242	ND (0.3)		8082A		5	11/30/18 3:01	C8K0495	CK83022
Aroclor 1248	ND (0.3)		8082A		5	11/30/18 3:01	C8K0495	CK83022
Aroclor 1254	**LC, P 1.9** (0.3)		8082A		5	11/30/18 3:01	C8K0495	CK83022
Aroclor 1260	ND (0.3)		8082A		5	11/30/18 3:01	C8K0495	CK83022
Aroclor 1262	ND (0.3)		8082A		5	11/30/18 3:01	C8K0495	CK83022
Aroclor 1268	ND (0.3)		8082A		5	11/30/18 3:01	C8K0495	CK83022

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*89 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*107 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*70 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*1670 %*	*SM*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-59-112118 2FT
Date Sampled: 11/21/18 11:15
Percent Solids: 88
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-14
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.3)		8082A		5	11/30/18 3:20	C8K0495	CK83022
Aroclor 1221	ND (0.3)		8082A		5	11/30/18 3:20	C8K0495	CK83022
Aroclor 1232	ND (0.3)		8082A		5	11/30/18 3:20	C8K0495	CK83022
Aroclor 1242	ND (0.3)		8082A		5	11/30/18 3:20	C8K0495	CK83022
Aroclor 1248	ND (0.3)		8082A		5	11/30/18 3:20	C8K0495	CK83022
Aroclor 1254 [2C]	**3.8** (0.3)		8082A		5	11/30/18 3:20	C8K0495	CK83022
Aroclor 1260	ND (0.3)		8082A		5	11/30/18 3:20	C8K0495	CK83022
Aroclor 1262	ND (0.3)		8082A		5	11/30/18 3:20	C8K0495	CK83022
Aroclor 1268	ND (0.3)		8082A		5	11/30/18 3:20	C8K0495	CK83022

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*449 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*104 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*83 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*4410 %*	*SM*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-61-112118 2FT
Date Sampled: 11/21/18 11:17
Percent Solids: 87
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-15
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.2)		8082A		20	11/30/18 6:13	C8K0495	CK82705
Aroclor 1221	ND (1.2)		8082A		20	11/30/18 6:13	C8K0495	CK82705
Aroclor 1232	ND (1.2)		8082A		20	11/30/18 6:13	C8K0495	CK82705
Aroclor 1242	ND (1.2)		8082A		20	11/30/18 6:13	C8K0495	CK82705
Aroclor 1248	ND (1.2)		8082A		20	11/30/18 6:13	C8K0495	CK82705
Aroclor 1254	**11.8** (1.2)		8082A		20	11/30/18 6:13	C8K0495	CK82705
Aroclor 1260	ND (1.2)		8082A		20	11/30/18 6:13	C8K0495	CK82705
Aroclor 1262	ND (1.2)		8082A		20	11/30/18 6:13	C8K0495	CK82705
Aroclor 1268	ND (1.2)		8082A		20	11/30/18 6:13	C8K0495	CK82705

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*%*	*SD*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*%*	*SD*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-62-112118 2FT
Date Sampled: 11/21/18 11:18
Percent Solids: 84
Initial Volume: 20
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-16
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	11/29/18 3:41	C8K0494	CK82705
Aroclor 1221	ND (0.06)		8082A		1	11/29/18 3:41	C8K0494	CK82705
Aroclor 1232	ND (0.06)		8082A		1	11/29/18 3:41	C8K0494	CK82705
Aroclor 1242	ND (0.06)		8082A		1	11/29/18 3:41	C8K0494	CK82705
Aroclor 1248	ND (0.06)		8082A		1	11/29/18 3:41	C8K0494	CK82705
Aroclor 1254 [2C]	**0.6** (0.06)		8082A		1	11/29/18 3:41	C8K0494	CK82705
Aroclor 1260	ND (0.06)		8082A		1	11/29/18 3:41	C8K0494	CK82705
Aroclor 1262	ND (0.06)		8082A		1	11/29/18 3:41	C8K0494	CK82705
Aroclor 1268	ND (0.06)		8082A		1	11/29/18 3:41	C8K0494	CK82705

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*146 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*122 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*75 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*184 %*	*SM*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-62-112118-1 2FT
Date Sampled: 11/21/18 11:18
Percent Solids: 83
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-17
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	11/29/18 4:00	C8K0494	CK82705
Aroclor 1221	ND (0.06)		8082A		1	11/29/18 4:00	C8K0494	CK82705
Aroclor 1232	ND (0.06)		8082A		1	11/29/18 4:00	C8K0494	CK82705
Aroclor 1242	ND (0.06)		8082A		1	11/29/18 4:00	C8K0494	CK82705
Aroclor 1248	ND (0.06)		8082A		1	11/29/18 4:00	C8K0494	CK82705
Aroclor 1254 [2C]	**0.4** (0.06)		8082A		1	11/29/18 4:00	C8K0494	CK82705
Aroclor 1260	ND (0.06)		8082A		1	11/29/18 4:00	C8K0494	CK82705
Aroclor 1262	ND (0.06)		8082A		1	11/29/18 4:00	C8K0494	CK82705
Aroclor 1268	ND (0.06)		8082A		1	11/29/18 4:00	C8K0494	CK82705

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*117 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*149 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*170 %*	*SM*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-63-112118 2FT
Date Sampled: 11/21/18 11:19
Percent Solids: 89
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-18
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	11/30/18 3:40	C8K0495	CK83022
Aroclor 1221	ND (0.06)		8082A		1	11/30/18 3:40	C8K0495	CK83022
Aroclor 1232	ND (0.06)		8082A		1	11/30/18 3:40	C8K0495	CK83022
Aroclor 1242	ND (0.06)		8082A		1	11/30/18 3:40	C8K0495	CK83022
Aroclor 1248	ND (0.06)		8082A		1	11/30/18 3:40	C8K0495	CK83022
Aroclor 1254 [2C]	**1.1** (0.06)		8082A		1	11/30/18 3:40	C8K0495	CK83022
Aroclor 1260	ND (0.06)		8082A		1	11/30/18 3:40	C8K0495	CK83022
Aroclor 1262	ND (0.06)		8082A		1	11/30/18 3:40	C8K0495	CK83022
Aroclor 1268	ND (0.06)		8082A		1	11/30/18 3:40	C8K0495	CK83022

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*4190 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*2640 %*	*SM*	*30-150*
Surrogate: Tetrachloro-m-xylene	*1000 %*	*SM*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*8460 %*	*SM*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-64-112118 2FT
Date Sampled: 11/21/18 11:20
Percent Solids: 84
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-19
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	11/29/18 4:39	C8K0494	CK82705
Aroclor 1221	ND (0.06)		8082A		1	11/29/18 4:39	C8K0494	CK82705
Aroclor 1232	ND (0.06)		8082A		1	11/29/18 4:39	C8K0494	CK82705
Aroclor 1242	ND (0.06)		8082A		1	11/29/18 4:39	C8K0494	CK82705
Aroclor 1248	ND (0.06)		8082A		1	11/29/18 4:39	C8K0494	CK82705
Aroclor 1254 [2C]	**0.7** (0.06)		8082A		1	11/29/18 4:39	C8K0494	CK82705
Aroclor 1260	ND (0.06)		8082A		1	11/29/18 4:39	C8K0494	CK82705
Aroclor 1262	ND (0.06)		8082A		1	11/29/18 4:39	C8K0494	CK82705
Aroclor 1268	ND (0.06)		8082A		1	11/29/18 4:39	C8K0494	CK82705

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*292 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*149 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*71 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*148 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-38-112118 0-2FT
Date Sampled: 11/21/18 11:21
Percent Solids: 91
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811612
ESS Laboratory Sample ID: 1811612-20
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	11/30/18 3:59	C8K0495	CK83022
Aroclor 1221	ND (0.6)		8082A		10	11/30/18 3:59	C8K0495	CK83022
Aroclor 1232	ND (0.6)		8082A		10	11/30/18 3:59	C8K0495	CK83022
Aroclor 1242	ND (0.6)		8082A		10	11/30/18 3:59	C8K0495	CK83022
Aroclor 1248	ND (0.6)		8082A		10	11/30/18 3:59	C8K0495	CK83022
Aroclor 1254 [2C]	**5.0** (0.6)		8082A		10	11/30/18 3:59	C8K0495	CK83022
Aroclor 1260	ND (0.6)		8082A		10	11/30/18 3:59	C8K0495	CK83022
Aroclor 1262	ND (0.6)		8082A		10	11/30/18 3:59	C8K0495	CK83022
Aroclor 1268	ND (0.6)		8082A		10	11/30/18 3:59	C8K0495	CK83022

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*64800 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*30200 %*	*SM*	*30-150*
Surrogate: Tetrachloro-m-xylene	*66 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*89 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1811612

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CK82705 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0236*		mg/kg wet	*0.02500*		*94*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0255*		mg/kg wet	*0.02500*		*102*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0238*		mg/kg wet	*0.02500*		*95*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0242*		mg/kg wet	*0.02500*		*97*	*30-150*			
LCS										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		109	40-140			
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		101	40-140			
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		91	40-140			
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		105	40-140			
Surrogate: Decachlorobiphenyl	*0.0244*		mg/kg wet	*0.02500*		*98*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0265*		mg/kg wet	*0.02500*		*106*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0253*		mg/kg wet	*0.02500*		*101*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0257*		mg/kg wet	*0.02500*		*103*	*30-150*			
LCS Dup										
Aroclor 1016	0.6	0.05	mg/kg wet	0.5000		115	40-140	5	30	
Aroclor 1016 [2C]	0.6	0.05	mg/kg wet	0.5000		113	40-140	11	30	
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		99	40-140	8	30	
Aroclor 1260 [2C]	0.6	0.05	mg/kg wet	0.5000		115	40-140	9	30	
Surrogate: Decachlorobiphenyl	*0.0266*		mg/kg wet	*0.02500*		*106*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0294*		mg/kg wet	*0.02500*		*117*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0276*		mg/kg wet	*0.02500*		*110*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0280*		mg/kg wet	*0.02500*		*112*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1811612

Notes and Definitions

U	Analyte included in the analysis, but not detected
SM	Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).
SD	Surrogate recovery(ies) diluted below the MRL (SD).
P	Percent difference between primary and confirmation results exceeds 40% (P).
LC	Lower value is used due to matrix interferences (LC).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit
MF	Membrane Filtration
MPN	Most Probably Number
TNTC	Too numerous to Count
CFU	Colony Forming Units

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1811612

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: AEI Consultants, Inc. - TB/MM

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1811612
Date Received: 11/26/2018
Project Due Date: 11/28/2018
Days for Project: 2 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 13.9 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? ~~Yes~~ / No (see note)
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

COC = B-49-112118 (2') ; Cap = B-49 ; Label = B-49-112118-1 (2') — Sample 1

COC = B-49-112118-1 (2') ; Cap = B-49-1 ; Label = B-49-112118-1 (2') — Sample 2 (no discrepancy, info provided for comparison)

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Aaron Ting Date: 11/27/18 Time: 0830 By: ML

ID on cap is correct.

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	293153	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	293152	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	293151	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	293150	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
05	293149	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
06	293148	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
07	293147	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
08	293146	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
09	293145	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
10	293144	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
11	293143	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
12	293142	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
13	293141	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
14	293140	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
15	293139	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
16	293138	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
17	293137	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
18	293136	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
19	293135	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
20	293134	Yes	NA	Yes	4 oz. Jar - Unpres	NP	

2nd Review
Are barcode labels on correct containers? Yes / No

ESS Laboratory Sample and Cooler Receipt Checklist

Client: AEI Consultants, Inc. - TB/MM

ESS Project ID: 1811612
Date Received: 11/26/2018

Are all necessary stickers attached? Yes / No

Completed By: _____ Date & Time: 11-26-18 17:05

Reviewed By: _____ Date & Time: 11/26/18 1718

Delivered By: _____ 11/26/18 1718

ESS Laboratory Sample and Cooler Receipt Checklist

Client: AEI Consultants, Inc. - TB/MM

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1811612
Date Received: 11/26/2018
Project Due Date: 11/28/2018
Days for Project: 2 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 13.9 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? ~~Yes~~ / No (Hold)
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** (Yes) / No / NA
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes / (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / (No)
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

COC = B-49-112118 (2') ; Cap = B-49 ; Label = B-49-112118-1 (2') — Sample 1

COC = B-49-112118-1 (2') ; Cap = B-49-1 ; Label = B-49-112118-1 (2') — Sample 2 (no discrepancy, info provided for comparison)

14. Was there a need to contact Project Manager? (Yes) / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	293153	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	293152	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	293151	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	293150	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
05	293149	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
06	293148	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
07	293147	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
08	293146	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
09	293145	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
10	293144	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
11	293143	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
12	293142	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
13	293141	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
14	293140	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
15	293139	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
16	293138	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
17	293137	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
18	293136	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
19	293135	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
20	293134	Yes	NA	Yes	4 oz. Jar - Unpres	NP	

2nd Review
Are barcode labels on correct containers? (Yes) / No

ESS Laboratory Sample and Cooler Receipt Checklist

Client: AEI Consultants, Inc. - TB/MM

ESS Project ID: 1811612
Date Received: 11/26/2018

Are all necessary stickers attached? Yes / No

Completed By: _____ Date & Time: 11-26-18 17:05

Reviewed By: _____ Date & Time: 11/26/18 1718

Delivered By: _____ 11/26/18 1718

ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time Rush 48 hr
Regulatory State RI
Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP

ESS Lab # 1811612
Reporting Limits See note 1
Electonic Deliverables ☒Limit Checker ☒Standard Excel ☒Other (Please Specify →) PDF

Company Name: AEI
Contact Person: Aaron Ting
Project #: 363655
Project Name: BASF Cranston
Address: 112 water St, 5th floor
City: BOSTON
State: MA
Zip Code: 02109
PO #: —
Telephone Number: (978) 577-9138
FAX Number: —
Email Address: ating@aeiconsultants.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: PCBs (Soxhlet)
1	11/21/18	1105	G	S	B-49-112118 (2')	X
2	↓	1105	↓	↓	B-49-112118-1 (2')	X
3		1107			B-51-112118 (2')	X
4		1108			B-52-112118 (2')	X
5		1108			B-52-112118-1 (2')	X
6		1109			B-53-112118 (2')	X
7		1110			B-54-112118 (2')	X
8		1110			B-54-112118-1 (2')	X
9		1112			B-56-112118 (2')	X
10		1113			B-57-112118 (2')	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G-Glass O-Other P-Poly S-Sterile V-Vial — AG
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 9
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Ascorbic Acid 12-Other* — 1
Number of Containers per Sample: 1

Laboratory Use Only
Cooler Present: Yes
Seals Intact:
Cooler Temperature: 13.9 °C

Sampled by: A Ting
Comments: Please specify "Other" preservative and containers types in this space
Note 1: See project QAPP

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
11/26/18 1505	Tyler Ouellette 11/26/18 1505	Tyler Ouellette 11/26/18 1520	11/26/18 1627
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

1 2

ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time: Rush 48 hr
Regulatory State: RI
Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP

ESS Lab #: 1811612
Reporting Limits: See note 1
Electonic Deliverables: ☒Limit Checker ☒Standard Excel ☒Other (Please Specify →) PDF

Company Name: AEI
Contact Person: Aaron Ting
Project #: 363655
Project Name: BASF Cranston
Address: 112 water St, 5th floor
City: BOSTON
State: MA
Zip Code: 02109
PO #: —
Telephone Number: (978) 577-9138
FAX Number: —
Email Address: ating@aeiconsultants.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: PCBs (Soxhlet)															
11	11/21/18	1112	G	S	B-56-112118-1 (2')	X															
12		1114			B-58-112118 (2')	X															
13		1114			B-58-112118-1 (2')	X															
14		1115			B-59-112118 (2')	X															
15		1117			B-61-112118 (2')	X															
16		1118			B-62-112118 (2')	X															
17		1118			B-62-112118-1 (2')	X															
18		1119			B-63-112118 (2')	X															
19		1120			B-64-112118 (2')	X															
20		1121	C	S	SW-38-112118 (0-2')	X															

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Ascorbic Acid 12-Other*

Number of Containers per Sample:	
AG	4
9	9
	1
	1

Laboratory Use Only
Cooler Present: Yes
Seals Intact:
Cooler Temperature: 13.9 °C

Sampled by: A Ting
Comments: Please specify "Other" preservative and containers types in this space
Note 1: See project QAPP

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
11/26/18 1505	11/26/18 1505	11/26/18 1520	11/26/18 1625
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Richard Kowalski
AEI Consultants, Inc.
148 Hathaway Road
Dartmouth, MA 02747

RE: BASF Cranston (363655)
ESS Laboratory Work Order Number: 1811613

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 5:45 pm, Nov 29, 2018

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1811613

SAMPLE RECEIPT

The following samples were received on November 26, 2018 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C, however, samples were delivered on ice and therefore meet regulatory criteria.

Lab Number	Sample Name	Matrix	Analysis
1811613-01	SW-39-112118 0-2FT	Soil	8082A
1811613-02	SW-41-112118 0-2FT	Soil	8082A
1811613-03	SW-42-112118 0-2FT	Soil	8082A
1811613-04	SW-43-112118 0-2FT	Soil	8082A
1811613-05	SW-44-112118 0-2FT	Soil	8082A
1811613-06	SW-44-112118-1 0-2FT	Soil	8082A
1811613-07	B-26-112118 1FT	Soil	8082A
1811613-08	B-27-112118 1FT	Soil	8082A
1811613-09	B-26-112118-1 1FT	Soil	8082A
1811613-10	B-27-112118-1 1FT	Soil	8082A
1811613-11	B-28-112118 1FT	Soil	8082A
1811613-12	B-29-112118 1FT	Soil	8082A
1811613-13	B-29-112118-1 1FT	Soil	8082A
1811613-14	B-31-112118 1FT	Soil	8082A
1811613-15	B-32-112118 1FT	Soil	8082A
1811613-16	B-33-112118 1FT	Soil	8082A
1811613-17	B-33-112118-1 1FT	Soil	8082A
1811613-18	B-34-112118 1FT	Soil	8082A
1811613-19	B-36-112118 1FT	Soil	8082A
1811613-20	B-36-112118-1 1FT	Soil	8082A

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1811613

PROJECT NARRATIVE

8082A Polychlorinated Biphenyls (PCB)

1811613-01 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-02 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-03 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-04 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-05 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-06 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-07 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-08 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-09 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-10 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-11 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-12 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-13 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-14 **Surrogate recovery(ies) diluted below the MRL (SD).**

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston ESS Laboratory Work Order: 1811613

Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-15 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-16 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-17 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-18 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-19 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1811613-20 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

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Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1811613

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 04-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-39-112118 0-2FT
Date Sampled: 11/21/18 11:22
Percent Solids: 88
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811613
ESS Laboratory Sample ID: 1811613-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.5)		8082A		50	11/29/18 9:15	C8K0508	CK82706
Aroclor 1221	ND (1.5)		8082A		50	11/29/18 9:15	C8K0508	CK82706
Aroclor 1232	ND (1.5)		8082A		50	11/29/18 9:15	C8K0508	CK82706
Aroclor 1242	ND (1.5)		8082A		50	11/29/18 9:15	C8K0508	CK82706
Aroclor 1248	ND (1.5)		8082A		50	11/29/18 9:15	C8K0508	CK82706
Aroclor 1254 [2C]	**21.9** (1.5)		8082A		50	11/29/18 9:15	C8K0508	CK82706
Aroclor 1260	ND (1.5)		8082A		50	11/29/18 9:15	C8K0508	CK82706
Aroclor 1262	ND (1.5)		8082A		50	11/29/18 9:15	C8K0508	CK82706
Aroclor 1268	ND (1.5)		8082A		50	11/29/18 9:15	C8K0508	CK82706

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*%*	*SD*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*%*	*SD*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-41-112118 0-2FT
Date Sampled: 11/21/18 11:24
Percent Solids: 90
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811613
ESS Laboratory Sample ID: 1811613-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		20	11/29/18 9:34	C8K0508	CK82706
Aroclor 1221	ND (0.6)		8082A		20	11/29/18 9:34	C8K0508	CK82706
Aroclor 1232	ND (0.6)		8082A		20	11/29/18 9:34	C8K0508	CK82706
Aroclor 1242	ND (0.6)		8082A		20	11/29/18 9:34	C8K0508	CK82706
Aroclor 1248	ND (0.6)		8082A		20	11/29/18 9:34	C8K0508	CK82706
Aroclor 1254	**10.8** (0.6)		8082A		20	11/29/18 9:34	C8K0508	CK82706
Aroclor 1260	ND (0.6)		8082A		20	11/29/18 9:34	C8K0508	CK82706
Aroclor 1262	ND (0.6)		8082A		20	11/29/18 9:34	C8K0508	CK82706
Aroclor 1268	ND (0.6)		8082A		20	11/29/18 9:34	C8K0508	CK82706

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*%*	*SD*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*%*	*SD*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-42-112118 0-2FT
Date Sampled: 11/21/18 11:25
Percent Solids: 89
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811613
ESS Laboratory Sample ID: 1811613-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.5)		8082A		50	11/29/18 9:53	C8K0508	CK82706
Aroclor 1221	ND (1.5)		8082A		50	11/29/18 9:53	C8K0508	CK82706
Aroclor 1232	ND (1.5)		8082A		50	11/29/18 9:53	C8K0508	CK82706
Aroclor 1242	ND (1.5)		8082A		50	11/29/18 9:53	C8K0508	CK82706
Aroclor 1248	ND (1.5)		8082A		50	11/29/18 9:53	C8K0508	CK82706
Aroclor 1254	**21.0** (1.5)		8082A		50	11/29/18 9:53	C8K0508	CK82706
Aroclor 1260	ND (1.5)		8082A		50	11/29/18 9:53	C8K0508	CK82706
Aroclor 1262	ND (1.5)		8082A		50	11/29/18 9:53	C8K0508	CK82706
Aroclor 1268	ND (1.5)		8082A		50	11/29/18 9:53	C8K0508	CK82706

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-43-112118 0-2FT
Date Sampled: 11/21/18 11:26
Percent Solids: 90
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811613
ESS Laboratory Sample ID: 1811613-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.4)		8082A		50	11/29/18 10:12	C8K0508	CK82706
Aroclor 1221	ND (1.4)		8082A		50	11/29/18 10:12	C8K0508	CK82706
Aroclor 1232	ND (1.4)		8082A		50	11/29/18 10:12	C8K0508	CK82706
Aroclor 1242	ND (1.4)		8082A		50	11/29/18 10:12	C8K0508	CK82706
Aroclor 1248	ND (1.4)		8082A		50	11/29/18 10:12	C8K0508	CK82706
Aroclor 1254	**24.9** (1.4)		8082A		50	11/29/18 10:12	C8K0508	CK82706
Aroclor 1260	ND (1.4)		8082A		50	11/29/18 10:12	C8K0508	CK82706
Aroclor 1262	ND (1.4)		8082A		50	11/29/18 10:12	C8K0508	CK82706
Aroclor 1268	ND (1.4)		8082A		50	11/29/18 10:12	C8K0508	CK82706

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-44-112118 0-2FT
Date Sampled: 11/21/18 11:27
Percent Solids: 91
Initial Volume: 20.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811613
ESS Laboratory Sample ID: 1811613-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.5)		8082A		20	11/29/18 10:31	C8K0508	CK82706
Aroclor 1221	ND (0.5)		8082A		20	11/29/18 10:31	C8K0508	CK82706
Aroclor 1232	ND (0.5)		8082A		20	11/29/18 10:31	C8K0508	CK82706
Aroclor 1242	ND (0.5)		8082A		20	11/29/18 10:31	C8K0508	CK82706
Aroclor 1248	ND (0.5)		8082A		20	11/29/18 10:31	C8K0508	CK82706
Aroclor 1254	**8.0** (0.5)		8082A		20	11/29/18 10:31	C8K0508	CK82706
Aroclor 1260	ND (0.5)		8082A		20	11/29/18 10:31	C8K0508	CK82706
Aroclor 1262	ND (0.5)		8082A		20	11/29/18 10:31	C8K0508	CK82706
Aroclor 1268	ND (0.5)		8082A		20	11/29/18 10:31	C8K0508	CK82706

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-44-112118-1 0-2FT
Date Sampled: 11/21/18 11:27
Percent Solids: 89
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811613
ESS Laboratory Sample ID: 1811613-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		20	11/29/18 10:50	C8K0508	CK82706
Aroclor 1221	ND (0.6)		8082A		20	11/29/18 10:50	C8K0508	CK82706
Aroclor 1232	ND (0.6)		8082A		20	11/29/18 10:50	C8K0508	CK82706
Aroclor 1242	ND (0.6)		8082A		20	11/29/18 10:50	C8K0508	CK82706
Aroclor 1248	ND (0.6)		8082A		20	11/29/18 10:50	C8K0508	CK82706
Aroclor 1254	**11.5** (0.6)		8082A		20	11/29/18 10:50	C8K0508	CK82706
Aroclor 1260	ND (0.6)		8082A		20	11/29/18 10:50	C8K0508	CK82706
Aroclor 1262	ND (0.6)		8082A		20	11/29/18 10:50	C8K0508	CK82706
Aroclor 1268	ND (0.6)		8082A		20	11/29/18 10:50	C8K0508	CK82706

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-26-112118 1FT
Date Sampled: 11/21/18 11:36
Percent Solids: 89
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811613
ESS Laboratory Sample ID: 1811613-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.5)		8082A		50	11/29/18 11:23	C8K0508	CK82706
Aroclor 1221	ND (1.5)		8082A		50	11/29/18 11:23	C8K0508	CK82706
Aroclor 1232	ND (1.5)		8082A		50	11/29/18 11:23	C8K0508	CK82706
Aroclor 1242	ND (1.5)		8082A		50	11/29/18 11:23	C8K0508	CK82706
Aroclor 1248	ND (1.5)		8082A		50	11/29/18 11:23	C8K0508	CK82706
Aroclor 1254	**16.0** (1.5)		8082A		50	11/29/18 11:23	C8K0508	CK82706
Aroclor 1260	ND (1.5)		8082A		50	11/29/18 11:23	C8K0508	CK82706
Aroclor 1262	ND (1.5)		8082A		50	11/29/18 11:23	C8K0508	CK82706
Aroclor 1268	ND (1.5)		8082A		50	11/29/18 11:23	C8K0508	CK82706

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-27-112118 1FT
Date Sampled: 11/21/18 11:37
Percent Solids: 91
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811613
ESS Laboratory Sample ID: 1811613-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.4)		8082A		50	11/29/18 11:40	C8K0508	CK82706
Aroclor 1221	ND (1.4)		8082A		50	11/29/18 11:40	C8K0508	CK82706
Aroclor 1232	ND (1.4)		8082A		50	11/29/18 11:40	C8K0508	CK82706
Aroclor 1242	ND (1.4)		8082A		50	11/29/18 11:40	C8K0508	CK82706
Aroclor 1248	ND (1.4)		8082A		50	11/29/18 11:40	C8K0508	CK82706
Aroclor 1254	**16.7** (1.4)		8082A		50	11/29/18 11:40	C8K0508	CK82706
Aroclor 1260	ND (1.4)		8082A		50	11/29/18 11:40	C8K0508	CK82706
Aroclor 1262	ND (1.4)		8082A		50	11/29/18 11:40	C8K0508	CK82706
Aroclor 1268	ND (1.4)		8082A		50	11/29/18 11:40	C8K0508	CK82706

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-26-112118-1 1FT
Date Sampled: 11/21/18 11:36
Percent Solids: 88
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811613
ESS Laboratory Sample ID: 1811613-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.4)		8082A		50	11/29/18 11:59	C8K0508	CK82706
Aroclor 1221	ND (1.4)		8082A		50	11/29/18 11:59	C8K0508	CK82706
Aroclor 1232	ND (1.4)		8082A		50	11/29/18 11:59	C8K0508	CK82706
Aroclor 1242	ND (1.4)		8082A		50	11/29/18 11:59	C8K0508	CK82706
Aroclor 1248	ND (1.4)		8082A		50	11/29/18 11:59	C8K0508	CK82706
Aroclor 1254	**19.4** (1.4)		8082A		50	11/29/18 11:59	C8K0508	CK82706
Aroclor 1260	ND (1.4)		8082A		50	11/29/18 11:59	C8K0508	CK82706
Aroclor 1262	ND (1.4)		8082A		50	11/29/18 11:59	C8K0508	CK82706
Aroclor 1268	ND (1.4)		8082A		50	11/29/18 11:59	C8K0508	CK82706

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*%*	*SD*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*%*	*SD*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-27-112118-1 1FT
Date Sampled: 11/21/18 11:37
Percent Solids: 89
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811613
ESS Laboratory Sample ID: 1811613-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		20	11/29/18 12:19	C8K0508	CK82706
Aroclor 1221	ND (0.6)		8082A		20	11/29/18 12:19	C8K0508	CK82706
Aroclor 1232	ND (0.6)		8082A		20	11/29/18 12:19	C8K0508	CK82706
Aroclor 1242	ND (0.6)		8082A		20	11/29/18 12:19	C8K0508	CK82706
Aroclor 1248	ND (0.6)		8082A		20	11/29/18 12:19	C8K0508	CK82706
Aroclor 1254	**12.6** (0.6)		8082A		20	11/29/18 12:19	C8K0508	CK82706
Aroclor 1260	ND (0.6)		8082A		20	11/29/18 12:19	C8K0508	CK82706
Aroclor 1262	ND (0.6)		8082A		20	11/29/18 12:19	C8K0508	CK82706
Aroclor 1268	ND (0.6)		8082A		20	11/29/18 12:19	C8K0508	CK82706

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*%*	*SD*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*%*	*SD*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-28-112118 1FT
Date Sampled: 11/21/18 11:38
Percent Solids: 89
Initial Volume: 20.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811613
ESS Laboratory Sample ID: 1811613-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.5)		8082A		20	11/29/18 12:43	C8K0508	CK82706
Aroclor 1221	ND (0.5)		8082A		20	11/29/18 12:43	C8K0508	CK82706
Aroclor 1232	ND (0.5)		8082A		20	11/29/18 12:43	C8K0508	CK82706
Aroclor 1242	ND (0.5)		8082A		20	11/29/18 12:43	C8K0508	CK82706
Aroclor 1248	ND (0.5)		8082A		20	11/29/18 12:43	C8K0508	CK82706
Aroclor 1254	**11.6** (0.5)		8082A		20	11/29/18 12:43	C8K0508	CK82706
Aroclor 1260	ND (0.5)		8082A		20	11/29/18 12:43	C8K0508	CK82706
Aroclor 1262	ND (0.5)		8082A		20	11/29/18 12:43	C8K0508	CK82706
Aroclor 1268	ND (0.5)		8082A		20	11/29/18 12:43	C8K0508	CK82706

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*%*	*SD*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*%*	*SD*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-29-112118 1FT
Date Sampled: 11/21/18 11:39
Percent Solids: 90
Initial Volume: 20.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811613
ESS Laboratory Sample ID: 1811613-12
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/27/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.4)		8082A		50	11/29/18 13:00	C8K0508	CK82706
Aroclor 1221	ND (1.4)		8082A		50	11/29/18 13:00	C8K0508	CK82706
Aroclor 1232	ND (1.4)		8082A		50	11/29/18 13:00	C8K0508	CK82706
Aroclor 1242	ND (1.4)		8082A		50	11/29/18 13:00	C8K0508	CK82706
Aroclor 1248	ND (1.4)		8082A		50	11/29/18 13:00	C8K0508	CK82706
Aroclor 1254	**17.0** (1.4)		8082A		50	11/29/18 13:00	C8K0508	CK82706
Aroclor 1260	ND (1.4)		8082A		50	11/29/18 13:00	C8K0508	CK82706
Aroclor 1262	ND (1.4)		8082A		50	11/29/18 13:00	C8K0508	CK82706
Aroclor 1268	ND (1.4)		8082A		50	11/29/18 13:00	C8K0508	CK82706

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*%*	*SD*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*%*	*SD*	*30-150*