

**Long-Term SSD/SVE System
Operation, Maintenance and Monitoring**

December 2016 Data Summary Report

**Wendell Avenue Site
Fairbanks, Alaska**

February 2017

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Table 1: OM&M and VI Assessment Analytical Results - October 2010 to November 2016
December 2016 Data Summary Report
314 Wendell Avenue Site

Remediation System Status	Location	Sample ID	Date Measured	Sample Type	Matrix	Tetrachloroethene (µg/m³)			Trichloroethene (µg/m³)			cis-1,2-Dichloroethene (µg/m³)			trans-1,2-Dichloroethene (µg/m³)			Vinyl Chloride (µg/m³)		
						Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag
Pre-Installation	IA-7	10WAS402IA	10/21/2010	Primary	Indoor Air	320	0.48		1.2	0.38		0.82	0.28			1.4	ND		0.09	ND
		10WAS403IA	10/21/2010	Duplicate	Indoor Air	320	0.5		1.2	0.39		0.81	0.29			1.4	ND		0.093	ND
SSD System Operating		11-WAS-006-IA	2/24/2011	Primary	Indoor Air	110	0.22		0.34	0.18		0.24	0.13		7.1	0.65			0.042	ND
		11-WAS-007-IA	2/24/2011	Duplicate	Indoor Air	110	0.24		0.32	0.19		0.24	0.14		6.9	0.71			0.046	ND
		11-WAS-047-IA	5/18/2011	Primary	Indoor Air	160	0.24		0.4	0.19		0.25	0.14		1.5	0.71			0.046	ND
		11-WAS-048-IA	5/18/2011	Duplicate	Indoor Air	160	0.29		0.41	0.23		0.25	0.17		1.5	0.85			0.055	ND
SSD/SVE System Operating		11-WAS-064-IA	10/20/2011	Primary	Indoor Air	27	0.23			0.18	ND		0.14	ND		0.68	ND		0.044	ND
		11-WAS-065-IA	10/20/2011	Duplicate	Indoor Air	27	0.24			0.19	ND		0.14	ND		0.69	ND		0.045	ND
SVE System Operating		13-WAS-007-IA	2/13/2013	Primary	Indoor Air	7.5	0.18			0.15	ND		0.11	ND		0.54	ND		0.035	ND
Post 190-day Shutdown		14-WAS-002-IA	1/2/2014	Primary	Indoor Air	22	0.17	JA		0.13	JA		0.098	JA		0.49	JA		0.032	JA
SVE System Operating		14-WAS-024-IA	3/18/2014	Primary	Indoor Air	4.6	0.19			0.15	ND		0.11	ND		0.56	ND		0.036	ND
Pre-Installation	IA-8	10WAS401IA	10/21/2010	Primary	Indoor Air	400	0.68		1.7	0.54		0.96	0.4			2	ND		0.13	ND
SSD System Operating		11-WAS-005-IA	2/24/2011	Primary	Indoor Air	180	0.24		0.53	0.19		0.32	0.14		8.1	0.69			0.045	ND
		11-WAS-049-IA	5/18/2011	Primary	Indoor Air	210	0.28		0.5	0.22		0.26	0.17		1.5	0.83			0.054	ND
SSD/SVE System Operating		11-WAS-063-IA	10/20/2011	Primary	Indoor Air	66	0.25			0.2	ND		0.14	ND		0.73	ND		0.047	ND
		12-WAS-074-IA	2/15/2012	Primary	Indoor Air	3.3	0.23			0.18	ND		0.13	ND		0.67	ND		0.043	ND
		12-WAS-075-IA	2/15/2012	Duplicate	Indoor Air	3.4	0.28			0.22	ND		0.16	ND		0.82	ND		0.053	ND
		12-WAS-129-IA	9/5/2012	Primary	Indoor Air	3.5	0.22			0.18	ND	0.23	0.13			0.65	ND		0.042	ND
Post 28-day Shutdown		12-WAS-133-IA	10/4/2012	Primary	Indoor Air	16	0.18			0.15	ND	0.98	0.11			0.54	ND		0.035	ND
		12-WAS-134-IA	10/4/2012	Duplicate	Indoor Air	16	0.2		0.16	0.15		0.92	0.11			0.57	ND		0.037	ND
SVE System Operating		13-WAS-005-IA	2/13/2013	Primary	Indoor Air	6.9	0.2			0.15	ND		0.11	ND		0.57	ND		0.037	ND
		13-WAS-006-IA	2/13/2013	Duplicate	Indoor Air	7.6	0.2			0.15	ND		0.11	ND		0.57	ND		0.037	ND
Post 190-day Shutdown		14-WAS-003-IA	1/2/2014	Primary	Indoor Air	20	0.16	JA	0.2	0.13	JA		0.097	JA		0.48	JA		0.031	JA
		14-WAS-004-IA	1/2/2014	Duplicate	Indoor Air	23	0.18	JA		0.14	JA		0.1	JA		0.51	JA		0.033	JA
SVE System Operating		14-WAS-022-IA	3/18/2014	Primary	Indoor Air	4.3	0.21			0.17	ND		0.12	ND		0.63	ND		0.04	ND
		14-WAS-023-IA	3/18/2014	Duplicate	Indoor Air	4.4	0.21	JA		0.17	JA		0.12	JA		0.62	JA		0.04	JA
ADEC Target Levels for Commercial Indoor Air						180			8.4			31			260			28		
Pre-Installation	SS-4	10WAS405SS	10/21/2010	Primary	Sub-Slab Soil Gas	5900000	5900		10000	4600			3400	ND		3400	ND		2200	ND
SSD System Operating		11-WAS-008-SS	2/24/2011	Primary	Sub-Slab Soil Gas	12000	34			27	ND		20	ND		20	ND		13	ND
		11-WAS-052-SS	5/18/2011	Primary	Sub-Slab Soil Gas	2000	6.1			4.8	ND		3.5	ND		3.5	ND		2.3	ND
SSD/SVE System Operating		11-WAS-066-SS	10/21/2011	Primary	Sub-Slab Soil Gas	520	6.0			4.7	ND		3.5	ND		3.5	ND		2.2	ND
		12-WAS-076-SS	2/15/2012	Primary	Sub-Slab Soil Gas	390	5.0			4.0	ND		3.0	ND		3.0	ND		1.9	ND
		12-WAS-077-SS	2/15/2012	Duplicate	Sub-Slab Soil Gas	400	5.4			4.2	ND		3.1	ND		3.1	ND		2	ND
		12-WAS-130-SS	9/5/2012	Primary	Sub-Slab Soil Gas	240	6.6			5.3	ND		3.9	ND		3.9	ND		2.5	ND
Post 28-day Shutdown		12-WAS-135-SS	10/5/2012	Primary	Sub-Slab Soil Gas	94000	390			310	ND		230	ND		230	ND		150	ND
SVE System Operating		13-WAS-010-SS	2/14/2013	Primary	Sub-Slab Soil Gas	560	5.7			4.5	ND		3.3	ND		3.3	ND		2.1	ND
		13-WAS-011-SS	2/14/2013	Duplicate	Sub-Slab Soil Gas	560	5.5			4.3	ND		3.2	ND		3.2	ND		2.0	ND
Post 190-day Shutdown		14-WAS-010-SS	1/2/2014	Primary	Sub-Slab Soil Gas	52000	220			170	ND		130	ND		130	ND		82	ND
		14-WAS-011-SS	1/2/2014	Duplicate	Sub-Slab Soil Gas	49000	220			170	ND		130	ND		130	ND		82	ND
SVE System Operating		14-WAS-026-SS	3/18/2014	Primary	Sub-Slab Soil Gas	13000	49			39	ND		29	ND		29	ND		18	ND
		14-WAS-027-SS	3/18/2014	Duplicate	Sub-Slab Soil Gas	14000	59			46	ND		34	ND		34	ND		22	ND
Post 92-day Shutdown		15-WAS-004-SS	1/7/2015	Primary	Sub-Slab Soil Gas	35000	120			98	ND		72	ND		72	ND		46	ND
		15-WAS-005-SS	1/7/2015	Duplicate	Sub-Slab Soil Gas	33000	130			100	ND		74	ND		74	ND		48	ND
SVE System Operating		15-WAS-006-SS	3/16/2015	Primary	Sub-Slab Soil Gas	6900	26			20	ND		15	ND		15	ND		9.7	ND
		15-WAS-007-SS	3/16/2015	Duplicate	Sub-Slab Soil Gas	6900	26			20	ND		15	ND		15	ND		9.6	ND
Post 180-day Shutdown		16-WAS-018-SS	3/22/2016	Primary	Sub-Slab Soil Gas	30000	55			43	ND		32	ND		32	ND		20	ND
		16-WAS-019-SS	3/22/2016	Duplicate	Sub-Slab Soil Gas	28000	52			41	ND		30	ND		30	ND		19	ND
SVE System Operating		16-WAS-022-SS	6/9/2016	Primary	Sub-Slab Soil Gas	99	1.2			0.91	ND		0.67	ND		0.67	ND		0.43	ND
		16-WAS-023-SS	6/9/2016	Duplicate	Sub-Slab Soil Gas	100	1.2			0.92	ND		0.68	ND		0.68	ND		0.44	ND
ADEC Target Levels for Commercial Sub-Slab Soil Gas						1,800			88			310			2,600			280		

Table 1: OM&M and VI Assessment Analytical Results - October 2010 to November 2016
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Remediation System Status	Location	Sample ID	Date Measured	Sample Type	Matrix	Tetrachloroethene (µg/m³)			Trichloroethene (µg/m³)			cis-1,2-Dichloroethene (µg/m³)			trans-1,2-Dichloroethene (µg/m³)			Vinyl Chloride (µg/m³)		
						Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag
Pre-Installation	SS-5	10WAS404SS	10/21/2010	Primary	Sub-Slab Soil Gas	310000	490		3900	390			280	ND		280	ND		180	ND
SSD System Operating		11-WAS-011-SS	2/24/2011	Primary	Sub-Slab Soil Gas	200	5.9			4.7	ND		3.5	ND		3.5	ND		2.2	ND
		11-WAS-053-SS	5/18/2011	Primary	Sub-Slab Soil Gas	61	7.4			5.8	ND		4.3	ND		4.3	ND		2.8	ND
SSD/SVE System Operating		11-WAS-067-SS	10/21/2011	Primary	Sub-Slab Soil Gas	19	6.7			5.3	ND		3.9	ND		3.9	ND		2.5	ND
SVE System Operating		13-WAS-012-SS	2/13/2013	Primary	Sub-Slab Soil Gas	8.9	6.5			5.1	ND		3.8	ND		3.8	ND		2.4	ND
SVE System Operating		14-WAS-028-SS	3/18/2014	Primary	Sub-Slab Soil Gas	16	5.2			4.1	ND		3	ND		3	ND		2	ND
Pre-Installation	SS-6	10WAS406SS	10/21/2010	Primary	Sub-Slab Soil Gas	14000	40			31	ND		23	ND		23	ND		15	ND
		10WAS407SS	10/21/2010	Duplicate	Sub-Slab Soil Gas	15000	43			34	ND		25	ND		25	ND		16	ND
SSD System Operating		11-WAS-009-SS	2/24/2011	Primary	Sub-Slab Soil Gas	19	5.2			4.1	ND		3	ND		3	ND		1.9	ND
		11-WAS-010-SS	2/24/2011	Duplicate	Sub-Slab Soil Gas	19	5.7			4.5	ND		3.3	ND		3.3	ND		2.1	ND
		11-WAS-050-SS	5/18/2011	Primary	Sub-Slab Soil Gas	21	5.5			4.3	ND		3.2	ND		3.2	ND		2	ND
		11-WAS-051-SS	5/18/2011	Duplicate	Sub-Slab Soil Gas	22	5.8			4.6	ND		3.4	ND		3.4	ND		2.2	ND
SSD/SVE System Operating		11-WAS-068-SS	10/21/2011	Primary	Sub-Slab Soil Gas		5.5	ND		4.4	ND		3.2	ND		3.2	ND		2.1	ND
		11-WAS-069-SS	10/21/2011	Duplicate	Sub-Slab Soil Gas		5.6	ND		4.4	ND		3.2	ND		3.3	ND		2.1	ND
SVE System Operating		13-WAS-009-SS	2/13/2013	Primary	Sub-Slab Soil Gas	100	5.6			4.4	ND		3.2	ND		3.2	ND		2.1	ND
Post 190-day Shutdown		14-WAS-012-SS	1/2/2014	Primary	Sub-Slab Soil Gas	250	5.2			4.1	ND		3	ND		3	ND		1.9	ND
ADEC Target Levels for Commercial Sub-Slab Soil Gas						1,800			88			310			2,600			280		
Pre-Installation	SG-2 @ 8' bgs	08WAS531SG	10/8/2008	Primary	Deep Soil Gas	8200	39		790	31		150	23		73	23			15	ND
SSD/SVE System Operating		12-WAS-132-SG	9/5/2012	Primary	Deep Soil Gas	930	6.6		15	5.3			3.9	ND		3.9	ND		2.5	ND
Post 28-day Shutdown		12-WAS-137-SG	10/5/2012	Primary	Deep Soil Gas	3000	11		87	9		10	6.7			6.7	ND		4.3	ND
Post 190-day Shutdown		14-WAS-014-SG	1/2/2014	Primary	Deep Soil Gas	280	7.3			5.8	ND		4.3	ND		4.3	ND		2.8	ND
Post 180-day Shutdown		16-WAS-017-SG	3/22/2016	Primary	Deep Soil Gas	990	5.2		98	4.2		36	3.1		14	3.1			2.0	ND
SSD System Operating	SG-3 @ 8' bgs	11-WAS-003-SG	2/18/2011	Primary	Deep Soil Gas	560000	1500		4800	1200		1600	860			860	ND		550	ND
		11-WAS-054-SG	5/18/2011	Primary	Deep Soil Gas	91000	370		970	290		370	210			210	ND		140	ND
SSD/SVE System Operating		11-WAS-058-SG	6/24/2011	Primary	Deep Soil Gas	150000	440		390	350			260	ND		260	ND		160	ND
		11-WAS-061-SG	7/22/2011	Primary	Deep Soil Gas	20000	91			72	ND		53	ND		53	ND		34	ND
		11-WAS-070-SG	10/21/2011	Primary	Deep Soil Gas	2300	9.7		10	7.7			5.7	ND		5.7	ND		3.6	ND
		12-WAS-078-SS	2/15/2012	Primary	Deep Soil Gas	720	5.5		5.7	4.3			3.2	ND		3.2	ND		2	ND
		12-WAS-131-SG	9/5/2012	Primary	Deep Soil Gas	1200	6.5		10	5.1			3.8	ND		3.8	ND		2.4	ND
Post 28-day Shutdown		12-WAS-136-SG	10/5/2012	Primary	Deep Soil Gas	6500	26		87	21		48	15			15	ND		10	ND
SVE System Operating		13-WAS-008-SG	2/13/2013	Primary	Deep Soil Gas	330	7.6			6.0	ND		4.4	ND		4.4	ND		2.9	ND
Post 190-day Shutdown		14-WAS-013-SG	1/2/2014	Primary	Deep Soil Gas	8800	29		360	23		120	17		58	17			11	ND
SVE System Operating		14-WAS-029-SG	3/18/2014	Primary	Deep Soil Gas	360	7.2			5.7	ND		4.2	ND		4.2	ND		2.7	ND
Post 180-day Shutdown		16-WAS-016-SG	3/22/2016	Primary	Deep Soil Gas	2200	10		89	8.3		73	6.1		27	6.1			4.0	ND
SVE System Operating	SVE-4	16-WAS-001-SG	9/28/2016	Primary	Deep Soil Gas	76000	120			93	ND		68	ND	720	68			44	ND
ADEC Target Levels for Commercial Deep Soil Gas						18,000			880			3,100			26,000			2,800		

Table 1: OM&M and VI Assessment Analytical Results - October 2010 to November 2016
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314 Wendell Avenue Site

Remediation System Status	Location	Sample ID	Date Measured	Sample Type	Matrix	Tetrachloroethene (µg/m³)			Trichloroethene (µg/m³)			cis-1,2-Dichloroethene (µg/m³)			trans-1,2-Dichloroethene (µg/m³)			Vinyl Chloride (µg/m³)		
						Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag
Pre-Installation	AA-3	10WAS400AA	10/21/2010	Primary	Outdoor Air	1.6	0.21			0.17	ND		0.12	ND		0.63	ND		0.04	ND
SSD System Operating		11WAS-001-AA	2/17/2011	Primary	Outdoor Air	1.7	0.17			0.13	ND		0.099	ND		0.5	ND		0.032	ND
		11-WAS-004-AA	2/24/2011	Primary	Outdoor Air	3.6	0.19			0.15	ND		0.11	ND		0.55	ND		0.036	ND
		11-WAS-046-AA	5/18/2011	Primary	Outdoor Air	1.5	0.21			0.17	ND		0.12	ND		0.61	ND		0.04	ND
SSD/SVE System Operating		11-WAS-056-AA	6/23/2011	Primary	Outdoor Air	1.2	0.23			0.18	ND		0.13	ND	0.7	0.67			0.043	ND
		11-WAS-062-AA	10/20/2011	Primary	Outdoor Air	0.76	0.2			0.16	ND		0.12	ND		0.59	ND		0.038	ND
		12-WAS-073-AA	2/15/2012	Primary	Outdoor Air	2.3	0.19			0.15	ND		0.11	ND		0.55	ND		0.036	ND
SVE System Operating		13-WAS-004-AA	2/13/2013	Primary	Outdoor Air	6.3	0.26			0.2	ND		0.15	ND		0.76	ND		0.049	ND
Post 190-day Shutdown		14-WAS-001-AA	1/2/2014	Primary	Outdoor Air	1.3	0.16	JA		0.13	JA		0.096	JA		0.48	JA		0.031	JA
SVE System Operating	14-WAS-021-AA	3/18/2014	Primary	Outdoor Air	1.6	0.22			0.17	ND		0.13	ND		0.64	ND		0.041	ND	
SSD System Operating	RS-1	11WAS-002-ES	2/17/2011	Primary	RS Exhaust Stack	130000	570			450	ND		330	ND		330	ND		210	ND
		11-WAS-012-ES	2/25/2011	Primary	RS Exhaust Stack	120000	360		330	280			210	ND		210	ND		140	ND
		11-WAS-055-ES	5/19/2011	Primary	RS Exhaust Stack	57000	220			170	ND		120	ND		120	ND		81	ND
SSD/SVE System Operating		11-WAS-057-ES	6/24/2011	Primary	RS Exhaust Stack	97000	350		450	280		260	200			200	ND		130	ND
		11-WAS-059-ES	7/1/2011	Primary	RS Exhaust Stack	93000	360			280	ND		210	ND		210	ND		140	ND
		11-WAS-060-ES	7/22/2011	Primary	RS Exhaust Stack	130000	450			350	ND		260	ND	2700	260			170	ND
		11-WAS-071-ES	10/21/2011	Primary	RS Exhaust Stack	44000	120			94	ND		69	ND	440	69			44	ND
		11-WAS-072-ES	12/20/2011	Primary	RS Exhaust Stack	22000	71			56	ND		42	ND	250	42			27	ND
		12-WAS-079-ES	2/15/2012	Primary	RS Exhaust Stack	14000	85			67	ND		50	ND	140	50			32	ND
		SVE System Operating	13-WAS-003-ES	2/13/2013	Primary	RS Exhaust Stack	13000	41		64	32		60	24		240	24			15
Post 190-day Shutdown		14-WAS-015-ES	1/3/2014	Primary	RS Exhaust Stack	18000	76		290	60		260	44		690	44			29	ND
SVE System Operating		14-WAS-030-ES	3/18/2014	Primary	RS Exhaust Stack	14000	83			66	ND		49	ND	180	49			31	ND
		14-WAS-047-ES	10/7/2014	Primary	RS Exhaust Stack	19000	79			63	ND		46	ND					30	ND
		15-WAS-008-ES	3/16/2015	Primary	RS Exhaust Stack	7400	34		33	27		24	20		130	20			13	ND
		15-WAS-009-ES	9/24/2015	Primary	RS Exhaust Stack	14000	54			42	ND		31	ND	170	31			20	ND
		16-WAS-024-ES	6/9/2016	Primary	RS Exhaust Stack	9600	34			27	ND		20	ND	110	20			13	ND
		16-WAS-001-ES	9/28/2016	Primary	SSD Exhaust Stack	2000	6.8	JA		5.4	ND, JA		4.0	ND, JA		4.0	ND, JA		2.6	ND, JA
		RS-SVE	16-WAS-002-ES	9/28/2016	Primary	SVE Exhaust Stack	10000	41			32	ND		24	ND	140	24			15

Notes:

Significant figures may not have been retained from the original laboratory results

Bold values indicate exceedance of ADEC Target Levels

All samples were collected with Summa™ Canisters

Soil gas samples were taken at an interval of 7.5 - 8.0 feet below ground surface

' bgs = feet below ground surface

µg/m³ = micrograms per cubic meter

MRL = Method Reporting Limit

ND = Not detected above method reporting limit

JA = Analytical result considered estimated because canister received by laboratory at ambient pressure

Table 2: VI Assessment Chlorinated Analytical Results - Boundary Vicinity January 2014 - November 2016
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Building	Location	Sample ID	Date Measured	Sample Type	Matrix	Tetrachloroethene (µg/m3)			Trichloroethene (µg/m3)			cis-1,2-Dichloroethene (µg/m3)			trans-1,2-Dichloroethene (µg/m3)			Vinyl Chloride (µg/m3)			1,1-Dichloroethene (µg/m3)		
						Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag
FNA Hanna	CS-1	14-WAS-006-CS	1/2/2014	Primary	Crawl Space Air	1.6	0.24			0.19	ND		0.14	ND		0.69	ND		0.044	ND			
		14-WAS-017-CS	3/18/2014	Primary	Crawl Space Air	2.4	0.23			0.18	ND		0.14	ND		0.68	ND		0.044	ND			
		14-WAS-043-CS	9/30/2014	Primary	Crawl Space Air	1.3	0.28			0.22	ND		0.16	ND		0.82	ND		0.053	ND			
		15-WAS-001-CS	1/7/2015	Primary	Crawl Space Air	2.2	0.22			0.18	ND		0.13	ND		0.65	ND		0.042	ND			
FNA Hanna	CS-3	14-WAS-007-CS	1/2/2014	Primary	Crawl Space Air	2.2	0.21			0.17	ND		0.12	ND		0.63	ND		0.040	ND			
		14-WAS-018-CS	3/18/2014	Primary	Crawl Space Air	2.6	0.23			0.18	ND		0.13	ND		0.67	ND		0.043	ND			
		14-WAS-044-CS	9/30/2014	Primary	Crawl Space Air	1.4	0.26			0.20	ND		0.15	ND		0.74	ND		0.048	ND			
		15-WAS-002-CS	1/7/2015	Primary	Crawl Space Air	2.0	0.23			0.18	ND		0.13	ND		0.67	ND		0.043	ND			
FNA Services	IA-1	14-WAS-008-IA	1/2/2014	Primary	Indoor Air	0.81	0.22			0.18	ND		0.13	ND		0.65	ND		0.042	ND			
14-WAS-019-IA		3/18/2014	Primary	Indoor Air	1.5	0.22			0.18	ND		0.13	ND		0.66	ND		0.042	ND				
FNA Hanna	IA-4	14-WAS-005-IA	1/2/2014	Primary	Indoor Air	0.94	0.30	JA	0.23	0.23	JA	0.17	0.17	JA	0.86	0.86	JA		0.056	JA			
14-WAS-016-IA		3/18/2014	Primary	Indoor Air	2.0	0.22			0.17	ND		0.13	ND		0.63	ND		0.041	ND				
Midnight Basement	IA-12	16-WAS-029-IA	11/3/2016	Primary	Indoor Air		60	ND, JA		47	ND, JA		35	ND, JA		35	ND, JA		22	ND, JA		35	ND, JA
	IA-12	16-WAS-030-IA	11/3/2016	Duplicate	Indoor Air		86	ND		68	ND		50	ND		50	ND		32	ND		50	ND
Midnight Upstairs	IA-13	16-WAS-031-IA	11/3/2016	Primary	Indoor Air		71	ND		56	ND		42	ND		42	ND		27	ND		42	ND
ADEC Target Levels for Commercial Indoor Air						180			8.4			31			260			28			880		
FNA Services	SS-1	14-WAS-009-SS	1/2/2014	Primary	Sub-Slab Soil Gas	1600	16			13	ND		9.5	ND	140	9.5			6.1	ND			
		14-WAS-025-SS	3/18/2014	Primary	Sub-Slab Soil Gas	410	6.9			5.4	ND		4.0	ND	14	4.0			2.6	ND			
		14-WAS-045-SS	9/30/2014	Primary	Sub-Slab Soil Gas	510	1.7			1.3	ND		0.97	ND	8.5	0.97			0.63	ND			
		14-WAS-046-SS	9/30/2014	Duplicate	Sub-Slab Soil Gas	530	1.7			1.3	ND		1.0	ND	8.8	1.0			0.64	ND			
		15-WAS-003-SS	1/7/2015	Primary	Sub-Slab Soil Gas	1600	5.8			4.6	ND		3.4	ND	260	3.4			2.2	ND			
		16-WAS-020-SS	3/23/2016	Primary	Sub-Slab Soil Gas	1100	5.9			4.7	ND		3.5	ND	250	3.5			2.2	ND		3.5	ND
FNA Services	SS-2	16-WAS-021-SS	3/23/2016	Primary	Sub-Slab Soil Gas	690	11			8.6	ND		6.4	ND	1000	6.4			4.1	ND		6.4	ND
Midnight Mine	SS-8	16-WAS-028-SS	11/3/2016	Primary	Sub-Slab Soil Gas	160	1.2			0.92	ND		0.68	ND		0.68	ND		0.44	ND		0.68	ND
	SS-9	16-WAS-027-SS	11/2/2016	Primary	Sub-Slab Soil Gas	35	2.5			2.0	ND		1.4	ND		1.4	ND		0.94	ND		1.4	ND
	SS-10	16-WAS-026-SS	11/2/2016	Primary	Sub-Slab Soil Gas	240	1.2	JA	2.7	0.92	JA		0.68	ND, JA	6.0	0.68	JA		0.44	ND, JA		0.68	ND, JA
ADEC Target Levels for Commercial Sub-Slab Soil Gas						1800			88			310			2600			280			8800		
	SG-20	15-WAS-011-SG	11/6/2015	Primary	Deep Soil Gas	2000	5.9	J-D	4.8	4.7			3.4	ND		3.4	ND		2.2	ND		3.4	ND
		15-WAS-012-SG	11/6/2015	Duplicate	Deep Soil Gas	2400	12	J-D		9.5	ND		7.0	ND		7.0	ND		4.5	ND		7	ND
	SG-21	15-WAS-013-SG	11/6/2015	Primary	Deep Soil Gas	2000	5.6		5.7	4.4			3.2	ND		3.2	ND		2.1	ND		3.2	ND
	SG-22	16-WAS-015-SG	3/22/2016	Primary	Deep Soil Gas	290	5.8			4.6	ND		3.4	ND	19	3.4			2.2	ND		3.4	ND
	SG-23	15-WAS-010-SG	11/6/2015	Primary	Deep Soil Gas	4400	19		89	15			11	ND	96	11			7.3	ND		11	ND
Midnight Mine	SG-24	16-WAS-014-SG	3/22/2016	Primary	Deep Soil Gas	2600	12		25	9.2			6.8	ND	100	6.8			4.4	ND		6.8	ND
		16-WAS-025-SG	11/2/2016	Primary	Deep Soil Gas	800	5.2		7.2	4.1			3.0	ND	24	3.0			2.0	ND		3.0	ND
ADEC Target Levels for Commercial Deep Soil Gas						18,000			880			3100			26,000			2800			88,000		
AA-5		14-WAS-020-AA	3/18/2014	Primary	Outdoor Air	1.6	0.21			0.17	ND		0.12	ND		0.63	ND		0.040	ND			

Notes:
Significant figures may not have been retained from the original laboratory results
Bold/shaded values indicate exceedance of ADEC Target Levels
All samples were collected with Summa™ Canisters
µg/m³ = micrograms per cubic meter
MRL = Method Reporting Limit
ND = Not detected above method reporting limit
JA = Analytical result considered estimated because canister received by laboratory at ambient pressure
J-D = Results qualified as estimated due to RPD between primary and duplicate sample not meeting criteria.

Table 3: VI Assessment Petroleum Analytical Results - Boundary Vicinity January 2014 - November 2016
December 2016 Data Summary Report
314 Wendell Avenue Site

Building	Location	Sample ID	Date Measured	Sample Type	Matrix	TPH-Gasoline (µg/m3)			Benzene (µg/m3)			Toluene (µg/m3)			Ethylbenzene (µg/m3)			Xylenes (total) (µg/m3)		
						Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag
Midnight Basement	IA-12	16-WAS-029-IA	11/3/2016	Primary	Indoor Air	910	130	JA,JN												
	IA-12	16-WAS-030-IA	11/3/2016	Duplicate	Indoor Air	790	190	JN												
Midnight Upstairs	IA-13	16-WAS-031-IA	11/3/2016	Primary	Indoor Air	680	160	JN												
ADEC Target Levels for Commercial Indoor Air									16			21900			49			440		
Midnight Mine	SS-8	16-WAS-028-SS	11/3/2016	Primary	Sub-Slab Soil Gas	230	170	JN		0.55	ND	1.8	0.64			0.74	ND	1.7	1.48	ND
	SS-9	16-WAS-027-SS	11/2/2016	Primary	Sub-Slab Soil Gas	2800	190	JN		1.2	ND	2.3	1.4			1.6	ND		3.2	ND
	SS-10	16-WAS-026-SS	11/2/2016	Primary	Sub-Slab Soil Gas	650	140	JA,JN	2.5	0.55	JA	19	0.64	JA	1.9	0.74	JA	8.1	1.48	JA
ADEC Target Levels for Commercial Sub-Slab Soil Gas									160			219,000			490			4400		
	SG-20	15-WAS-011-SG	11/6/2015	Primary	Deep Soil Gas															
		15-WAS-012-SG	11/6/2015	Duplicate	Deep Soil Gas															
	SG-21	15-WAS-013-SG	11/6/2015	Primary	Deep Soil Gas															
	SG-22	16-WAS-015-SG	3/22/2016	Primary	Deep Soil Gas															
	SG-23	15-WAS-010-SG	11/6/2015	Primary	Deep Soil Gas															
Midnight Mine	SG-24	16-WAS-014-SG	3/22/2016	Primary	Deep Soil Gas															
		16-WAS-025-SG	11/2/2016	Primary	Deep Soil Gas	560	160	JN		2.4	ND		2.9	ND		3.3	ND		6.6	ND
ADEC Target Levels for Commercial Deep Soil Gas									1600			2,190,000			4,900			44,000		

Notes:
Bold/shaded values indicate exceedance of ADEC Target Levels
All samples were collected with Summa™ Canisters
µg/m³ = micrograms per cubic meter
MRL = Method Reporting Limit
ND = Not detected above method reporting limit
JA = Analytical result considered estimated because canister received by laboratory at ambient pressure
J-D = Results qualified as estimated due to RPD between primary and duplicate sample not meeting criteria.
JN = Results for TPH-Gasoline qualified as estimated due to uncertain identification that did not represent commercial gasoline.

Table 4: Color-Tec Air Sample Field Screening Results Summary
December 2016 Data Summary Report
314 Wendell Avenue Site, Fairbanks, Alaska

		Color-Tec Air Sample Field Screening Results			Laboratory Results ($\mu\text{g}/\text{m}^3$)		
Sample ID		Tube Reading	(ppm)	Notes	Sample ID	PCE	TCE
DW-1		0.75	0.75	133LL at 100cc = 0.75 ppm (cf-1)			
DW-2		1.25	1.25	133LL at 100cc = 1.25 ppm (cf-1)			
DW-3		0	0.0	133LL at 100cc = 0.0 ppm (cf-1)			
DW-4		0	0.0	133LL at 100cc = 0.0 ppm (cf-1)			
DW-5		0	0.0	133LL at 100cc = 0.0 ppm (cf-1)			
DW-6		0	0.0	133LL at 100cc = 0.0 ppm (cf-1)			
SVE-2		0	0.0	133LL at 100cc = 0.0 ppm (cf-1)	16-WAS-001-SG	76,000	ND (93)
SVE-3		0	0	133LL at 100cc = 0.0 ppm (cf-1)			
SVE-4		5.0	5.0	133L at 100cc = 5.0 ppm (cf-1)			
SVE-5		3.5	3.5	133L at 100cc = 3.5 ppm (cf-1)			
SVE-6		0	0.0	133LL at 100cc = 0.0 ppm (cf-1)			
RS-SSD		0	0.0	133LL at 100cc = 0.0 ppm (cf-1)	16-WAS-001-ES	2,000 JA	ND (5.4)
RS-SVE		1.75	1.75	133LL at 100cc = 1.75 ppm (cf-1)	16-WAS-002-ES	10,000	ND (32)
RS-1		1.5	1.5	133LL at 100cc = 1.5 ppm (cf-1)			

Notes:

cf - correction factor per manufacture

no temperature correction factor applied to Color-Tech readings

ND (x) - not detected at reporting limit in parentheses

Wendell Ave SVE/SSD System OM&M Data Sheet

Wendell Ave - SVE/SSD OM&M Data Sheet																					
Date:		9/27/16		Time:		16:10		Ambient Temp (°F):		41		Technician:		Cox/Boyette		Field Instrument Used/Last Calibrated:		RKI 9/20/16		9/27/16	
SSD System																					
Depressurization Wells								SSD System Mechanical Parameters				Indoor Vapor Monitoring Points									
Line	Vacuum (inWC)		Flow (scfm)		Valve % Open	Hex (ppm)	% CO2					%O2	Point ID	Vacuum (inWC)		Hex (ppm)	% CO2	% O2			
DW-1	23	<54	11	~10	50				Dilution Valve % open	0%	Closed	SS-4	NR	> 0.02	0	0.04	21.5				
DW-2	28	<54	6	~10	100	30	0.02	20.9	Knockout drum level	Empty	Empty	SS-5	0.172	> 0.02	35	0.04	21.2				
DW-3	10	<54	16	~10	50	20	0.00	20.9	Manifold Vacuum (inWC)	42	Max < 54 inWC Δ < 10 inWC	SS-8	0.40	> 0.02	0	0.04	21.2				
DW-4	13	<54	10	~10	50	5	0.02	20.9	Blower Vacuum (inWC)	45		SS-7	0.0		20	0.04	21.2				
DW-5	5	<54	10	~10	50	0	0.04	20.9	Exhaust Temp Digital (°F)	110.5	< 215 °F	SS-9	0.61		25	0.04	21.2				
DW-6	6	<54	9	~10	50	5	0.02	20.9	Exhaust Temp Gauge (°F)	120	< 215 °F	SS-10	-0.003		20	0.04	21.2				
Spare									Exhaust Flow (cfm)	* / 62	~60	SS-11	0.0		20	0.16	20.9				
Spare									Filters Checked/Cleaned?	No		SS-12	0.0		0	0.04	21.2				
SVE System																					
Extraction Wells								SVE System Mechanical Parameters				Outdoor Vapor Monitoring Points									
Line	Vacuum (inWC)		Flow (scfm)		Valve % Open	Hex (ppm)	% CO2					%O2	Point ID	Vacuum (inWC)		Hex (ppm)	%CO2	%O2			
SVE-1	-	<81	-	~15	-	-	-	-	Dilution Valve % open	0%	Closed	SG-2 @ 4' bgs	0.314	> 0.1	15	0.0	21.2				
SVE-2	11	<81	18	~15	50	0	0.02	20.9	Knockout drum level	Empty	Empty	SG-2 @ 8' bgs	0.573	> 0.1	20	0.02	21.1				
SVE-3	9	<81	20	~15	50	55	0.24	20.9	Manifold Vacuum (inWC)	31	Max < 81 inWC Δ < 10 inWC	SG-3 @ 4' bgs	0.371	> 0.1	20	0.0	21.1				
SVE-4	15	<81	13	~15	50	35	0.86	20.9	Blower Vacuum (inWC)	35		SG-3 @ 8' bgs	1.038	> 0.1	15	0.04	21.2				
SVE-5	15	<81	18	~15	50	65	0.40	20.9	Exhaust Temp Digital (°F)	112.0	< 275 °F	SG-7 @ 5' bgs	0.773	> 0.1	15	0.0	21.1				
SVE-6	14	<81	14	~15	100	35	0.10	20.9	Exhaust Temp Gauge (°F)	120	< 275 °F	SG-7 @ 9' bgs	NR	> 0.1	5	0.0	20.9				
Spare									Exhaust Flow (cfm)	* / 83	~75	SG-8 @ 5' bgs	0.232	> 0.1	10	0.0	21.1				
Spare									Filters Checked/Cleaned?	No		SG-22 @ 8' bgs	NR	> 0.1	NR	NR	NR				
Field Notes:												SG-24 @ 8' bgs	NR	> 0.1	NR	NR	NR				
Additional Mechanical and Shared Elements																					
Control Room							Exhaust Stack/Heat Trace					Laboratory Sample									
Parameter			SSD		SVE System																
Motor Speed (Hz)			58		41		Exhaust Stack Drained?					Yes		Effluent Sample ID		16-WAS-001-ES		16-WAS-002-ES			
IDEC Hourmeter Reading/Time			10682.00		26345.03		Exhaust Stack (Hex (ppm), %O2, %CO2)					40, 20.9, 0.26		Summa Canister ID		A9721		37414			
Hobbs Hourmeter Reading/Time			11662.7		4257.6		Exhaust Stack Colortec (ppm)					1.5		Time/Date		9/28/2016 14:10		9/28/2016 14:25			
Previous IDEC Hourmeter Reading/Date/Time			8037.45		23698.41		Heat Trace On?					2 on, 4 off		Initial Vacuum ("Hg)		30		29			
Previous Hobbs Hourmeter Reading/Date/Time			9018.2		1615.2		LEL Monitor Reading (%LEL)					1		Final Vacuum ("Hg)		< 5		6			
Total Hours Since Last Event IDEC/Hobbs			2644.55		2644.5		2642.4		GVEA Meter Reading (kW-hr)					180255				SSD Sample		SVE Sample	
Percent Operability			2646.62		100%		100%														
Field Notes: * - Both the SSD and SVE Exhaust flow gauges were not functioning properly, therefore sum of well flows used to obtain total flow. SSD and SVE Systems shut down at approximately 16:00 on 9/28/2016																					

Itemized values are the operational target for this monitoring parameter. Observed values should be entered and compared to the target values to determine if operational adjustment or maintenance is required

NR = not recorded

##/## = "I" between readings indicates guage reading "before" and "after" adjustment

SG-1 destroyed: SS-6, SS-7, SS-9, SS-10, SS-11, SS-12, SS-13 no longer safely accessible due to building condition



PHOTOGRAPH 1: NEW DRAINLINE AND CRACKS IN MIDNITE MINE FLOOR, REPRESENTING POTENTIAL VAPOR INTUSION ENTRANCE POINTS.



PHOTOGRAPH 2: CONTAINERS STORED IN MIDNITE MINE BUILDING.



PHOTOGRAPH 3: INSTALLATION OF SUB-SLAB SAMPLE POINT AT MIDNITE MINE.



PHOTOGRAPH 4: SUB-SLAB SAMPLE LOCATION SS-8 AT MIDNITE MINE.



PHOTOGRAPH 5: SUB-SLAB SAMPLE LOCATION SS-9 AT MIDNITE MINE.



PHOTOGRAPH 6: SUB-SLAB SAMPLE LOCATION SS-10 AT MIDNITE MINE.



**PHOTOGRAPH 7: MIDNITE MINE INDOOR AIR SAMPLE COLLECTION AT IA-12
(PRIMARY AND DUPLICATE SAMPLE).**



PHOTOGRAPH 8: SAMPLING AT SG-24 OUTSIDE MIDNITE MINE (NOVEMBER 2016).



PHOTOGRAPH 9: MIDNITE MINE INDOOR AIR SAMPLE COLLECTION AT IA-13.

Laboratory Data Review Checklist for Air Samples

Completed by:	Elsie King		
Title:	Project Chemist	Date:	Jan 30, 2017
CS Report Name:	Wendell Ave September 2016 Data Summary Report	Report Date:	Jan 30, 2017
Consultant Firm:	ERM Alaska, Inc.		
Laboratory Name:	Eurofins Air Toxics, Inc.	Laboratory Report Number:	1610031
ADEC File Number:		ADEC Haz ID:	

1. Laboratory

a. Did a NELAP certified laboratory receive and perform all of the submitted sample analyses?

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

--

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses NELAP approved?

☐ Yes ☐ No ☒ NA (Please explain.) Comments:

NA. Samples were not transferred or subcontracted to another laboratory.
--

2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

--

b. Correct analyses requested?

☒ Yes ☐ No ☐ NA (Please explain) Comments:

--

3. Laboratory Sample Receipt Documentation

a. Sample condition documented -Samples collected in gas tight, opaque/dark Summa canisters or other ADEC approved container? Canister vacuum/pressure checked, recorded upon receipt and contained no open valves?

☒ Yes ☐ No ☐ NA (Please explain) Comments:

--

b. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, canister not holding a vacuum etc.?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

Sample 16-WAS-001-SG was diluted and transferred from Low Level analysis to full scan TO-15 (5&20ppbv) due to high levels of target compounds.

Despite the use of flow controllers for sample collection, the final canister vacuum for sample 16-WAS-001-ES was reported at <5" Hg on the COC and measured at ambient pressure upon sample receipt (0.1 psi).

c. Data quality or usability affected? (Please explain.)

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

Data quality and usability is not affected with respect to the reported laboratory sample receipt documentation. Results for sample 16-WAS-001-ES were flagged 'JA' due to possible leak during transit. Results may be biased low.

4. Case Narrative

a. Present and understandable?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

Sample 16-WAS-001-SG was diluted and transferred from Low Level analysis to full scan TO-15 (5&20ppbv) due to high levels of target compounds. Sample 16-WAS-002-SG was cancelled on 9/29/16 per client's request.

c. Were all corrective actions documented?

☐ Yes ☐ No ☒ NA (Please explain)

Comments:

NA. There were no corrective actions.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Data quality and usability are not affected with respect to the case narrative report.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

b. Samples analyzed within 30 days of collection or within the time required by the method?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

c. Are the reported PQLs less than the Target Screening Level or the minimum required detection level for the project?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

Dilution (dilution factor = 12.1) was performed on sample 16-WAS-002-ES (dilution factor = 12.1) due to the presence of high level target species. Several ND results had elevated RLs.

d. Data quality or usability affected?

Comments:

Data quality and usability is not affected with respect to the reported sample results. The reported RLs were < the project remedial action objectives.

6. QC Samples

a. Method Blank

i. One method blank reported per analysis and 20 samples?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

ii. All method blank results less than PQL?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

iii. If above PQL, what samples are affected?

Comments:

NA. All method blank results were below PQL.

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?

☐ Yes ☐ No ☒ NA (Please explain)

Comments:

NA. All method blank results were below PQL.

v. Data quality or usability affected? (Please explain.)

Comments:

Data quality and usability is not affected with respect to the reported method blank results.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. One LCS/LCSD or one LCS and a sample/sample duplicate pair reported per analysis and 20 samples?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

iii. Precision - All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable.

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

iv. If %R or RPD is outside of acceptable limits, what samples are affected?

☐ Yes ☐ No ☒ NA (Please explain)

Comments:

All %R and RPD within acceptable limits.

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☐ No ☒ NA (Please explain)

Comments:

All %R and RPD within acceptable limits.

vi. Data quality or usability affected? (Please explain.)

Comments:

Data quality and usability is not affected with respect to the reported LCS/LCSD results.

c. Surrogates

i. Are surrogate recoveries reported for field, QC and laboratory samples?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☐ Yes ☐ No ☒ NA (Please explain)

Comments:

NA. All surrogates recoveries were within limits.

iv. Data quality or usability affected? (Please explain.)

Comments:

Data quality and usability is not affected with respect to the reported surrogate results.

d. Field Duplicate

i. One field duplicate submitted per analysis and 10 type (soil gas, indoor air etc.) samples?

☐ Yes ☒ No ☐ NA (Please explain)

Comments:

Field duplicates were not submitted with these samples. Field duplicates were not specified in the work plan for these samples.

ii. Submitted blind to lab?

☐ Yes ☐ No ☒ NA (Please explain)

Comments:

Field duplicates were not submitted with these samples.

iii. Precision - All relative percent differences (RPD) less than specified DQOs? (Recommended: 25 %)

$$\text{RPD (\%)} = \text{Absolute Value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

☐ Yes ☐ No ☒ NA (Please explain)

Comments:

Field duplicates were not submitted with these samples.

iv. Data quality or usability affected? (Please explain.)

Comments:

NA- Field duplicates were not submitted with these samples.

e. Field Blank (If not used explain why).

☐ Yes ☐ No ☒ NA (Please explain)

Comments:

NA. Field blank was not required.

i. All results less than PQL?

☐ Yes ☐ No ☒ NA (Please explain)

Comments:

NA. Field blank was not required.

ii. If above PQL, what samples are affected?

Comments:

NA. Field blank was not required.

iii. Data quality or usability affected? (Please explain.)

Comments:

NA. Field blank was not required.

7. Other Data Flags/Qualifiers

a. Defined and appropriate?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

Defined within the laboratory case narrative.

Reset Form

Laboratory Data Review Checklist for Air Samples

Completed by:	Elsie King		
Title:	Project Chemist	Date:	Dec 5, 2016
CS Report Name:	Wendell Ave November 2016 Data Summary Report	Report Date:	Dec 5, 2016
Consultant Firm:	ERM Alaska, Inc.		
Laboratory Name:	Eurofins Air Toxics, Inc.	Laboratory Report Number:	1611168A,B,C
ADEC File Number:		ADEC Haz ID:	

1. Laboratory

a. Did a NELAP certified laboratory receive and perform all of the submitted sample analyses?

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

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b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses NELAP approved?

☐ Yes ☐ No ☒ NA (Please explain.) Comments:

NA. Samples were not transferred or subcontracted to another laboratory.
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2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

☒ Yes ☐ No ☐ NA (Please explain.) Comments:

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b. Correct analyses requested?

☒ Yes ☐ No ☐ NA (Please explain) Comments:

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3. Laboratory Sample Receipt Documentation

a. Sample condition documented -Samples collected in gas tight, opaque/dark Summa canisters or other ADEC approved container? Canister vacuum/pressure checked, recorded upon receipt and contained no open valves?

☒ Yes ☐ No ☐ NA (Please explain) Comments:

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b. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, canister not holding a vacuum etc.?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

There was a significant difference (greater than 5.0" Hg) between the measured canister receipt vacuum (0.6" Hg) and that which was reported on the Chain of Custody (COC) for sample 16-WAS-026-SS (6.5" Hg). A leak test indicated that the valve was functioning properly. Despite the use of flow controllers for sample collection, the final canister vacuum for sample 16-WAS-029-IA was reported at 4" Hg on the COC and measured at ambient pressure upon sample receipt (0.2 psi).

c. Data quality or usability affected? (Please explain.)

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

Results for samples 16-WAS-026-SS and 16-WAS-029-IA were flagged 'JA' due to possible leak during transit. Results may be biased low.

4. Case Narrative

a. Present and understandable?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

b. Discrepancies, errors or QC failures identified by the lab?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

TO-3: The hydrocarbon profile present in samples 16-WAS-025-SG, 16-WAS-026-SS, 16-WAS-028-SS, 16-WAS-029-IA, 16-WAS-030-IA and 16-WAS-031-IA did not resemble that of commercial gasoline and the hydrocarbon profile present in sample 16-WAS-027-SS was heavier than that of commercial gasoline. Results were calculated using the response factor derived from the current gasoline linear calibration.

c. Were all corrective actions documented?

☐ Yes ☐ No ☒ NA (Please explain)

Comments:

NA. There were no corrective actions required.

d. What is the effect on data quality/usability according to the case narrative?

Comments:

Results for TPH-Gasoline were flagged JN as estimated, with uncertain identification as gasoline.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

☐ Yes ☒ No ☐ NA (Please explain)

Comments:

Samples 16-WAS-029-IA, 16-WAS-030-IA and 16-WAS-031-IA were transferred from SIM analysis to full scan TO-15 due to high levels of non-target compounds.

b. Samples analyzed within 30 days of collection or within the time required by the method?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

c. Are the reported PQLs less than the Target Screening Level or the minimum required detection level for the project?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

Dilution was performed on samples 16-WAS-029-IA, 16-WAS-030-IA and 16-WAS-031-IA due to the presence of high level non-target species. All ND results were reported with elevated RLs.

d. Data quality or usability affected?

Comments:

Data quality and usability is not affected with respect to the reported sample results. The reported RLs were < the project remedial action objectives.

6. QC Samples

a. Method Blank

i. One method blank reported per analysis and 20 samples?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

ii. All method blank results less than PQL?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

iii. If above PQL, what samples are affected?

Comments:

NA. All method blank results were below PQL.

iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined?

☐ Yes ☐ No ☒ NA (Please explain)

Comments:

NA. All method blank results were below PQL.

v. Data quality or usability affected? (Please explain.)

Comments:

Data quality and usability is not affected with respect to the reported method blank results.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. One LCS/LCSD or one LCS and a sample/sample duplicate pair reported per analysis and 20 samples?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

iii. Precision - All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable.

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

iv. If %R or RPD is outside of acceptable limits, what samples are affected?

☐ Yes ☐ No ☒ NA (Please explain)

Comments:

All %R and RPD within acceptable limits.

v. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

☐ Yes ☐ No ☒ NA (Please explain)

Comments:

All %R and RPD within acceptable limits.

vi. Data quality or usability affected? (Please explain.)

Comments:

Data quality and usability is not affected with respect to the reported LCS/LCSD results.

c. Surrogates

i. Are surrogate recoveries reported for field, QC and laboratory samples?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable.

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

☐ Yes ☐ No ☒ NA (Please explain)

Comments:

NA. All surrogates recoveries were within limits.

iv. Data quality or usability affected? (Please explain.)

Comments:

Data quality and usability is not affected with respect to the reported surrogate results.

d. Field Duplicate

i. One field duplicate submitted per analysis and 10 type (soil gas, indoor air etc.) samples?

☒ Yes ☐ No ☐ NA (Please explain) Comments:

Primary 16-WAS-029-IA with duplicate 16-WAS-030-IA

ii. Submitted blind to lab?

☒ Yes ☐ No ☐ NA (Please explain) Comments:

iii. Precision - All relative percent differences (RPD) less than specified DQOs? (Recommended: 25 %)

$$\text{RPD (\%)} = \text{Absolute Value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where R_1 = Sample Concentration

R_2 = Field Duplicate Concentration

☒ Yes ☐ No ☐ NA (Please explain) Comments:

iv. Data quality or usability affected? (Please explain.)

Comments:

Data quality and usability is acceptable.

e. Field Blank (If not used explain why).

☐ Yes ☐ No ☒ NA (Please explain) Comments:

NA. Field blank was not required.

i. All results less than PQL?

☐ Yes ☐ No ☒ NA (Please explain) Comments:

NA. Field blank was not required.

ii. If above PQL, what samples are affected?

Comments:

NA. Field blank was not required.

iii. Data quality or usability affected? (Please explain.)

Comments:

NA. Field blank was not required.

7. Other Data Flags/Qualifiers

a. Defined and appropriate?

☒ Yes ☐ No ☐ NA (Please explain)

Comments:

Defined within the laboratory case narrative.

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