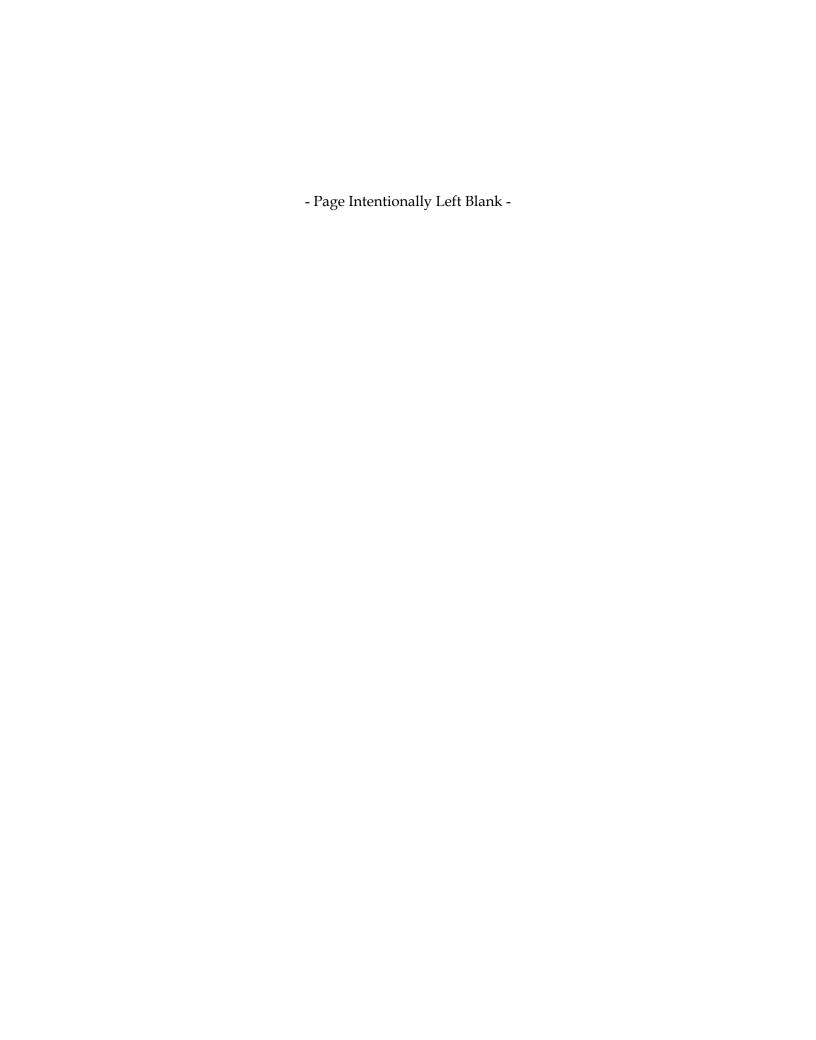
# Long-Term SSD/SVE System Operation, Maintenance and Monitoring Groundwater Monitoring

June 2017 Data Summary Report

Wendell Avenue Site Fairbanks, Alaska

July 2017

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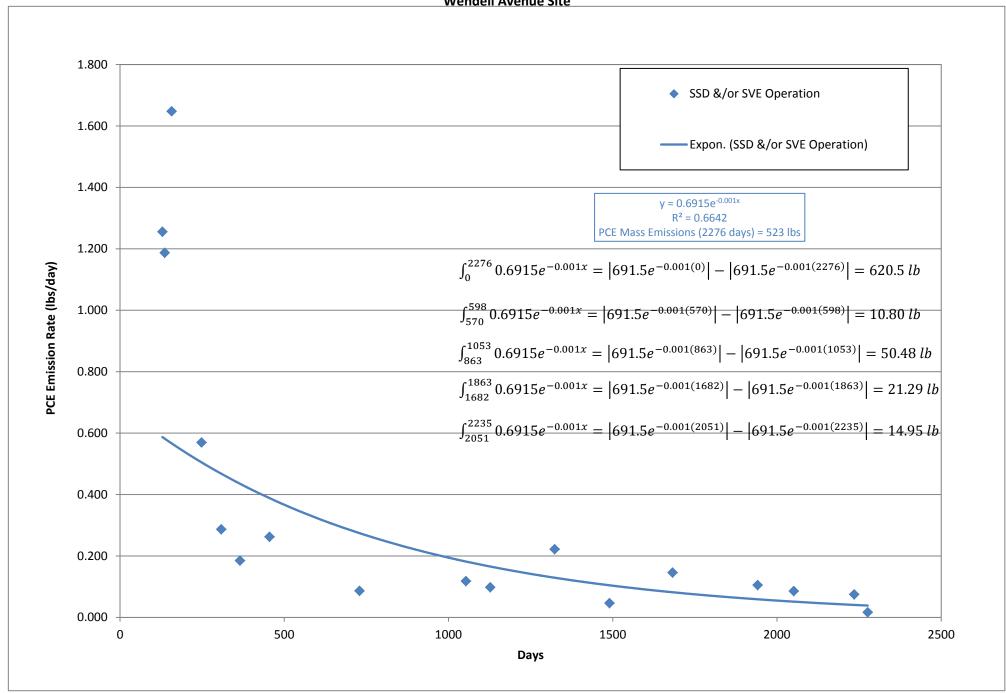
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Figure 3: SSD/SVE System PCE Emission Mass Estimate
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**Tables** 



# Table 1: OM&M and VI Assessment Analytical Results - October 2010 to May 2017 June 2017 Data Summary Report 314 Wendell Avenue Site

						3	14 Wen	dell Ave	enue Sit	e										
D 11 41 6 4				6 1		Te	trachloroetl	nene	Tı	richloroethe	ene	cis-1	,2-Dichloro	ethene	trans-	1,2-Dichloro	ethene	V	inyl Chloric	de
Remediation System Status	Location	Sample ID	Date Measured	Sample Type	Matrix		(μg/m <sup>3</sup> )			$(\mu g/m^3)$			(μg/m³)			$(\mu g/m^3)$			(μg/m³)	
Status				Type		Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag
Pre-Installation		10WAS402IA	10/21/2010	Primary	Indoor Air	320	0.48		1.2	0.38		0.82	0.28			1.4	ND		0.09	ND
1 TC-IIIStanation		10WAS403IA	10/21/2010	Duplicate	Indoor Air	320	0.5		1.2	0.39		0.81	0.29			1.4	ND		0.093	ND
		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
SSD System Operating		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
	IA-7	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		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
55D System Operating		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
		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
SSD/SVE System Operating		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
SOD/ SVE System Operating		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	IA-8	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
, 1 0		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
ADECT II 1 C	. 17 1	14-WAS-023-IA	3/18/2014	Duplicate	Indoor Air	4.4	0.21 <b>180 - 41</b>	JA		0.17 <b>8.4</b>	JA		0.12 <b>31 - NA</b>	JA		0.62 <b>260 - NA</b>	JA		0.04 <b>28</b>	JA
ADEC Target Levels for Cor	ilinerciai indoor	10WAS405SS	10/21/2010	Dariana carra	Sub-Slab Soil Gas	5,900,000	5900		10000	4600			1	ND			ND		2200	ND
Pre-Installation				Primary	Sub-Slab Soil Gas	12,000	34		10000	27	NID		<b>3400</b> 20			3400			13	
SSD System Operating		11-WAS-008-SS 11-WAS-052-SS	2/24/2011	Primary	Sub-Slab Soil Gas Sub-Slab Soil Gas	2,000	6.1			4.8	ND ND		3.5	ND ND		3.5	ND ND		2.3	ND ND
		11-WAS-052-33	5/18/2011 10/21/2011	Primary Primary	Sub-Slab Soil Gas	520	6.0			4.7	ND		3.5	ND		3.5	ND		2.3	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
SSD/SVE System Operating		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	94,000	390			310	ND		230	ND		230	ND		150	ND
·		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
SVE System Operating		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
		14-WAS-010-SS	1/2/2014	Primary	Sub-Slab Soil Gas	52,000	220			170	ND	1	130	ND		130	ND		82	ND
Post 190-day Shutdown	SS-4	14-WAS-011-SS	1/2/2014	Duplicate	Sub-Slab Soil Gas	49,000	220			170	ND		130	ND		130	ND		82	ND
OVER CO. 1		14-WAS-026-SS	3/18/2014	Primary	Sub-Slab Soil Gas	13,000	49			39	ND		29	ND		29	ND		18	ND
SVE System Operating		14-WAS-027-SS	3/18/2014	Duplicate	Sub-Slab Soil Gas	14,000	59			46	ND		34	ND		34	ND		22	ND
D1 02 1 C1 : 1		15-WAS-004-SS	1/7/2015	Primary	Sub-Slab Soil Gas	35,000	120			98	ND		72	ND		72	ND		46	ND
Post 92-day Shutdown		15-WAS-005-SS	1/7/2015	Duplicate	Sub-Slab Soil Gas	33,000	130			100	ND		74	ND		74	ND		48	ND
CVE Cyrotoma Ora Circ		15-WAS-006-SS	3/16/2015	Primary	Sub-Slab Soil Gas	6,900	26			20	ND		15	ND		15	ND		9.7	ND
SVE System Operating		15-WAS-007-SS	3/16/2015	Duplicate	Sub-Slab Soil Gas	6,900	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	30,000	55			43	ND		32	ND		32	ND		20	ND
1 05t 100-day 5Hutdown		16-WAS-019-SS	3/22/2016	Duplicate	Sub-Slab Soil Gas	28,000	52			41	ND		30	ND		30	ND		19	ND
		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
SVE System Operating		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
		17-WAS-004-SS	5/10/2017	Primary	Sub-Slab Soil Gas	6,500	21			17	ND		12	ND		12	ND		8.0	ND
ADEC Target Levels for Cor	nmercial Sub-Sla	b Soil Gas					1,800			88 - 84			310 - NA			2,600 - NA			280	

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### Table 1: OM&M and VI Assessment Analytical Results - October 2010 to May 2017 June 2017 Data Summary Report 314 Wendell Avenue Site

							trachloroeth	ene		richloroethe	ne	cie-1	2-Dichloroe	othene	trans_	1,2-Dichloro	ethene	V	inyl Chlori	ide
Remediation System	Tantina	C1- ID	Date Measured	Sample	Matrice	10		circ	•		.iic	C15-1,		tilelie	trans-	1,2-Dicinoro (μg/m³)	ctiletie	•		iuc
Status	Location	Sample ID	Date Measured	Type	Matrix	Result	(μg/m³) MRL	Dataflag	Result	(μg/m³) MRL	Dataflag	Result	(μg/m³) MRL	Dataflag	Result	(μg/m ) MRL	Dataflag	Result	(μg/m³) MRL	Dataflag
Pre-Installation		10WAS404SS	10/21/2010	Primary	Sub-Slab Soil Gas	310,000	490	Datariag	3900	390	Datariag	Result	280	ND	Result	280	ND	Result	180	ND
	ì	11-WAS-011-SS	2/24/2011	Primary	Sub-Slab Soil Gas	200	5.9		2300	4.7	ND		3.5	ND		3.5	ND		2.2	ND
SSD System Operating		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	SS-5	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	ĺ	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		10WAS406SS	10/21/2010	Primary	Sub-Slab Soil Gas	14,000	40			31	ND		23	ND		23	ND		15	ND
r re-installation		10WAS407SS	10/21/2010	Duplicate	Sub-Slab Soil Gas	15,000	43			34	ND		25	ND		25	ND		16	ND
	[	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
SSD System Operating		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
55D System Operating	SS-6	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
	55-6	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
55D/ 5VE System Operating	ļ	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	ļ	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 Com	ımercial Sub-Slal	o Soil Gas					1,800			88 - 84			310 - NA			2,600 - NA			280	
Pre-Installation		08WAS531SG	10/8/2008	Primary	Deep Soil Gas	8,200	39		790	31		150	23		73	23			15	ND
SSD/SVE System Operating	66.2001	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	SG-2 @ 8' bgs	12-WAS-137-SG	10/5/2012	Primary	Deep Soil Gas	3,000	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
CCD Creatons On anotin a		11-WAS-003-SG	2/18/2011	Primary	Deep Soil Gas	560,000	1500		4800	1200		1600	860			860	ND		550	ND
SSD System Operating		11-WAS-054-SG	5/18/2011	Primary	Deep Soil Gas	91,000	370		970	290		370	210			210	ND		140	ND
		11-WAS-058-SG	6/24/2011	Primary	Deep Soil Gas	150,000	440		390	350			260	ND		260	ND		160	ND
		11-WAS-061-SG	7/22/2011	Primary	Deep Soil Gas	20,000	91			72	ND		53	ND		53	ND		34	ND
SSD/SVE System Operating		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
	SG-3 @ 8' bgs	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	ļ	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	ľ	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		16-WAS-001-SG	9/28/2016	Primary	Deep Soil Gas	76,000	120			93	ND		68	ND	720	68			44	ND
Post 180-day Shutdown	SVE-4	17-WAS-001-SG	3/30/2017	Primary	Deep Soil Gas	18,000	82		140	65		69	48		280	48			31	ND
ADEC Target Levels for Com	mercial Deep So		, , .	,	1	,	18,000			880 - 840			3,100 - NA			26,000 - NA			2,800	
LE L'AIGET LEVEIS IOI COII	interctur Deep 30	11 345					10,000			000-010			5/100 - 14A			_0,000 - 14A			<b>=</b> ,500	

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# Table 1: OM&M and VI Assessment Analytical Results - October 2010 to May 2017 June 2017 Data Summary Report 314 Wendell Avenue Site

Remark State   Parcel State   Parcel Sample   Date Messare   Parcel State   Par								trachloroeth	ene		ichloroethe	ne	cis-1	2-Dichloroe	thene	frans-	1,2-Dichloro	ethene	Vi	inyl Chlori	de
Settise   Pre-Installation   P	Remediation System	Losstion	Commis ID	Data Massauri	Sample	Matrix	10		CIIC	11			C15-1,		CIIC	trans-	•	CHICHE	V		
Pre-Installation	Status	Location	Sample 1D	Date Measured	Type	Matrix	D16		D. C.	D 11		D ( d	D 11		D. C	D 11		D. C	D11		D. C.
SSF) System Operating   SSF)									Datariag	Result		U	Result		U	Result		U	Result		U
SED System Operating	Pre-Installation			, ,	,																
SED   SYSTE System Operating   SYSTE System O					,																
Third No. Stock   11-WAS-600-AA   0/23/2011   Primary   Onkloor Air   1.2   0.23   0.10   0.10   0.10   0.10   0.10   0.067   0.067   0.0083   ND	SSD System Operating				,																
Self-System Operating   Self-System Operating   1-WAS-002-AA   10/20/2011   Primary   Outdoor Air   2.3   0.19   0.15   NID   0.16   NID   0.11   NID   0.55   NID   0.038   NID   0.036   NID   0.0					,									+	-			ND			
1-MAS-032-AA   10/20/2011   Primary   Outdoor Air   0.76   0.2   0.16   ND   0.12   ND   0.99   ND   0.038   ND		AA-3		· · · · ·	,											0.7					
SVE System Operating   13-WAS-001-AA   2/13/2013   Primary   Outdoor Air   1.3   0.16   JA   0.13   JA   0.096   JA   0.48   JA   0.033   JA   SVE System Operating   14-WAS-01-AA   3/18/2014   Primary   Outdoor Air   1.3   0.16   JA   0.13   JA   0.096   JA   0.48   JA   0.033   JA   0.096   JA   0.48   JA   0.033   JA   0.096   JA   0.48   JA   0.0033   JA   0.096   JA   0.096   JA   0.098   JA   0.098   JA   0.099   JA   0.098   JA   0.098   JA   0.099   JA   0.098   JA   0.099	SSD/SVE System Operating	11110		, ,	,																
Post 190-day Shutdown				, ,	,										-						
SVE System Operating	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
SSD System Operating   SSSD System Operating   SSSSD System Operating   SSSSSD System Operating   SS	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
SSD System Operating   Fig.	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
SED/SVE System Operating   SED/SVE System Operating   SES System Operating   SES System Operating   SES System Operating   Set System O			11WAS-002-ES	2/17/2011	Primary	RS Exhaust Stack	130,000	570			450	ND		330	ND		330	ND		210	ND
11-WAS-057-ES   6/24/2011   Primary   RS Exhaust Stack   97,000   350   450   280   260   200     200   ND   130   ND	SSD System Operating		11-WAS-012-ES	2/25/2011	Primary	RS Exhaust Stack	120,000	360		330	280			210	ND		210	ND		140	ND
SED/SVE System Operating   FSD/SVE System Oper			11-WAS-055-ES	5/19/2011	Primary	RS Exhaust Stack	57,000	220			170	ND		120	ND		120	ND		81	ND
SSD/SVE System Operating RS-1 RS-1 RS-1 RS-1 RS-1 RS-1 RS-1 RS-1			11-WAS-057-ES	6/24/2011	Primary	RS Exhaust Stack	97,000	350		450	280		260	200			200	ND		130	ND
11-WAS-071-ES   10/21/2011   Primary   RS Exhaust Stack   44,000   120   94   ND   69   ND   440   69   44   ND			11-WAS-059-ES	7/1/2011	Primary	RS Exhaust Stack	93,000	360			280	ND		210	ND		210	ND		140	ND
11-WAS-071-ES   10/21/2011   Primary   RS Exhaust Stack   44,000   120   94   ND   69   ND   440   69   44   ND	CCD /CVE Crystom On systim a		11-WAS-060-ES	7/22/2011	Primary	RS Exhaust Stack	130,000	450			350	ND		260	ND	2700	260			170	ND
RS-1   12-WAS-079-ES   2/15/2012   Primary   RS Exhaust Stack   14,000   85   67   ND   50   ND   140   50   32   ND	33D/3VE System Operating		11-WAS-071-ES	10/21/2011	Primary	RS Exhaust Stack	44,000	120			94	ND		69	ND	440	69			44	ND
12-WAS-007-ES   2/15/2012   Primary   RS Exhaust Stack   14,000   RS   RS   RS   RS   RS   RS   RS		DC 1	11-WAS-072-ES	12/20/2011	Primary	RS Exhaust Stack	22,000	71			56	ND		42	ND	250	42			27	ND
Post 190-day Shutdown		K5-1	12-WAS-079-ES	2/15/2012	Primary	RS Exhaust Stack	14,000	85			67	ND		50	ND	140	50			32	ND
14-WAS-030-ES   3/18/2014   Primary   RS Exhaust Stack   14,000   83     66   ND   49   ND   180   49     31   ND     14-WAS-047-ES   10/7/2014   Primary   RS Exhaust Stack   19,000   79   63   ND   46   ND     15-WAS-008-ES   3/16/2015   Primary   RS Exhaust Stack   7,400   34   33   27   24   20   130   20   130   ND     15-WAS-008-ES   9/24/2015   Primary   RS Exhaust Stack   14,000   54   42   ND   31   ND   170   31   20   ND     16-WAS-004-ES   6/9/2016   Primary   RS Exhaust Stack   9,600   34   27   ND   20   ND   110   20   13   ND   ND   ND   ND   ND   ND   ND   N	SVE System Operating		13-WAS-003-ES	2/13/2013	Primary	RS Exhaust Stack	13,000	41		64	32		60	24		240	24			15	ND
SVE System Operating    14-WAS-047-ES   10/7/2014   Primary   RS Exhaust Stack   19,000   79   63   ND   46   ND     30   ND	Post 190-day Shutdown		14-WAS-015-ES	1/3/2014	Primary	RS Exhaust Stack	18,000	76		290	60		260	44		690	44			29	ND
SVE System Operating    15-WAS-008-ES   3/16/2015   Primary   RS Exhaust Stack   7,400   34   33   27   24   20   130   20   130   20   130   ND     15-WAS-009-ES   9/24/2015   Primary   RS Exhaust Stack   14,000   54   42   ND   31   ND   170   31   31   31   ND     16-WAS-024-ES   6/9/2016   Primary   RS Exhaust Stack   9,600   34   27   ND   20   ND   110   20   13   ND     RS-SSD   16-WAS-001-ES   9/28/2016   Primary   SSD Exhaust Stack   2,000   6.8   JA   5.4   ND, JA   4.0   ND, JA   4.0   ND, JA     RS-SVE   16-WAS-002-ES   9/28/2016   Primary   SVE Exhaust Stack   10,000   41   32   ND   24   ND   140   24   36   ND     Post 180 day Shutdown   RS-SVE   17-WAS-001-ES   3/30/2017   Primary   SVE Exhaust Stack   9,700   42   110   33   140   24   170   24   36   ND     RS-SVE   17-WAS-001-ES   3/30/2017   Primary   SVE Exhaust Stack   9,700   42   110   33   140   24   170   24   36   16   ND     RS-SVE   17-WAS-001-ES   3/30/2017   Primary   SVE Exhaust Stack   9,700   42   110   33   140   24   170   24   36   16   ND     RS-SVE   17-WAS-001-ES   3/30/2017   Primary   SVE Exhaust Stack   9,700   42   110   33   140   24   170   24   36   16   ND     RS-SVE   17-WAS-001-ES   3/30/2017   Primary   SVE Exhaust Stack   9,700   42   110   33   140   24   170   24   36   16   ND     RS-SVE   17-WAS-001-ES   3/30/2017   Primary   SVE Exhaust Stack   9,700   42   110   33   140   24   170   24   170   24   16   ND     RS-SVE   17-WAS-001-ES   3/30/2017   Primary   SVE Exhaust Stack   9,700   42   110   33   140   24   170   24   170   24   16   ND     RS-SVE   17-WAS-001-ES   17-WAS-001-			14-WAS-030-ES	3/18/2014	Primary	RS Exhaust Stack	14,000	83			66	ND		49	ND	180	49			31	ND
SVE System Operating   15-WAS-009-ES   9/24/2015   Primary   RS Exhaust Stack   14,000   54			14-WAS-047-ES	10/7/2014	Primary	RS Exhaust Stack	19,000	79			63	ND		46	ND					30	ND
RS-SSD   16-WAS-024-ES   6/9/2016   Primary   RS Exhaust Stack   9,600   34   27   ND   20   ND   110   20   20   ND   13   ND			15-WAS-008-ES	3/16/2015	Primary	RS Exhaust Stack	7,400	34		33	27		24	20		130	20			13	ND
RS-SSD 16-WAS-001-ES 9/28/2016 Primary SSD Exhaust Stack 2,000 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 10,000 41 32 ND 24 ND 140 24 DD 15 ND Post 180 day Shutdown RS-SVE 17-WAS-001-ES 3/30/2017 Primary SVE Exhaust Stack 9,700 42 110 33 140 24 170 24 DD 170 24 ND 16 ND	SVE System Operating		15-WAS-009-ES	9/24/2015	Primary	RS Exhaust Stack	14,000	54			42	ND		31	ND	170	31			20	ND
RS-SVE 16-WAS-002-ES 9/28/2016 Primary SVE Exhaust Stack 10,000 41 32 ND 24 ND 140 24 15 ND Post 180 day Shutdown RS-SVE 17-WAS-001-ES 3/30/2017 Primary SVE Exhaust Stack 9,700 42 110 33 140 24 170 24 170 24 16 ND			16-WAS-024-ES	6/9/2016	Primary	RS Exhaust Stack	9,600	34			27	ND		20	ND	110	20			13	ND
Post 180 day Shutdown RS-SVE 17-WAS-001-ES 3/30/2017 Primary SVE Exhaust Stack 9,700 42 110 33 140 24 170 24 16 ND		RS-SSD	16-WAS-001-ES	9/28/2016	Primary	SSD Exhaust Stack	2,000	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	10,000	41			32	ND		24	ND	140	24			15	ND
SVE System Operating RS-SVE 17-WAS-002-ES 5/10/2017 Primary SVE Exhaust Stack 3.100 12 16 9.7 7.2 ND 150 7.2 4.6 ND	Post 180 day Shutdown	RS-SVE	17-WAS-001-ES	3/30/2017	Primary	SVE Exhaust Stack	9,700	42		110	33		140	24		170	24			16	ND
Δ · · · · · · · · · · · · · · · · · · ·	SVE System Operating	RS-SVE	17-WAS-002-ES	5/10/2017	Primary	SVE Exhaust Stack	3,100	12		16	9.7			7.2	ND	150	7.2			4.6	ND

#### Notes:

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

Bold values indicate exceedance of ADEC Target Levels

NA = ADEC has not calculated a Target Level for this chemical due to lack of toxicity information for inhalation exposure pathway.

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

 $\mu g/m^3$  = micrograms per cubic meter

MRL = Method Reporting Limit

ND = Not detected above method reporting limit

 $\label{eq:JA} JA = Analytical\ result\ considered\ estimated\ because\ can ister\ received\ by\ laboratory\ at\ ambient\ pressure$ 

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<sup>&#</sup>x27; bgs = feet below ground surface



#### Table 2: VI Assessment Chlorinated Analytical Results - Boundary Vicinity January 2014 - May 2017 June 2017 Data Summary Report 314 Wendell Avenue Site

										en Aven						• D	.,	¥** 10**	• •		D1 11	
			Date	Sample		Tetı	rachloroet	thene	Tri	ichloroeth	ene	cis-1,	2-Dichloro	ethene	trans-1,	,2-Dichlor	roethene	Vinyl Chlo		1,1-1	Dichloroet	hene
Building	Location	Sample ID	Measured	Type	Matrix		(µg/m3)			(μg/m3)			(μg/m3)			(μg/m3)		(μg/m3)			(μg/m3)	
				<b>7 F</b> -		Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag	Result MRL	Dataflag	Result	MRL	Dataflag
		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			
FNA Hanna	CS-1	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			
TAA Hailia	C3-1	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			
		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			
TNIA II	<i>C</i> C 0	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			
FNA Hanna	CS-3	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			
TNIA C	T.1. d	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			
FNA Services	IA-1	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			
		14-WAS-005-IA	1/2/2014	Primary	Indoor Air	0.94	0.30	JΑ	0.23	0.23	JΑ	0.17	0.17	JΑ	0.86	0.86	JA	0.056	JΑ			
FNA Hanna	IA-4	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			
		16-WAS-029-IA	11/3/2016	Primary	Indoor Air		60	ND, JA		<u>47</u>	ND, JA		<u>35</u>	ND, JA		35	ND, JA	22	ND, JA		35	ND, JA
Midnight		16-WAS-030-IA	11/3/2016	Duplicate	Indoor Air		86	ND		68	ND		<u>50</u>	ND		50	ND	32	ND		50	ND
Basement	IA-12	17-WAS-002-IA	5/10/2017	Primary	Indoor Air		1.4	ND		1.1	ND		0.83	ND		4.2	ND	0.27	ND		0.42	ND
		17-WAS-003-IA	5/10/2017	Duplicate	Indoor Air		1.2	ND		0.95	ND		0.70	ND		3.5	ND	0.23	ND		0.35	ND
Midnight		16-WAS-031-IA	11/3/2016	Primary	Indoor Air		71	ND		<u>56</u>	ND		<u>42</u>	ND		42	ND	27	ND		42	ND
Upstairs	IA-13	17-WAS-001-IA	5/10/2017	Primary	Indoor Air	1.1	0.94	JA		0.75	ND, JA		0.55	ND, JA		2.8	ND, JA	0.18	ND, JA		0.28	ND, JA
Opstans		17 77118 001 111	0/ 10/ 2017	Timery	mator m	1.1	0.71	J. 1		0.70	112/ 3/11		0.00	112/11		2.0	112/ 111	0.10	112/ 121		0.20	112/111
ADFC Target	Levels for Co	ommercial Indoor	Air				180 - 41			8.4			31 - NA			260 - NA		28			880	
TIDEC Turget	Levels for ex	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		000	
		14-WAS-025-SS	3/18/2014	Primary	Sub-Slab Soil Gas	410	6.9			5.4	ND		4.0	ND	140	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			+
FNA Services	SS-1	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
	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
	55 0	17-WAS-003-SS	5/10/2017	Primary	Sub-Slab Soil Gas	9.9	1.3			1.1	ND		0.78	ND		0.78	ND	0.51	ND		0.78	ND
Midnight	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
Mine		17-WAS-001-SS	5/9/2017	Primary	Sub-Slab Soil Gas	4.5	1.5	т.	2.7	1.2	ND		0.85	ND		0.85	ND	0.55	ND		0.85	ND
	SS-10	16-WAS-026-SS 17-WAS-002-SS		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
		17-WAS-002-55	5/9/2017	Primary	Sub-Slab Soil Gas	210	1.3		2.3	1.0			0.76	ND	2.9	0.76		0.49	ND		0.76	ND
ADEC Target	Lovels for Co	ommercial Sub-Sl	ah Soil Cas				1,800			88 - 84			310 - NA			2,600 - NA	٨	280			8,800	
ADEC Target		15-WAS-011-SG		Duima aura	Deep Soil Gas	2000		ID	4.8	4.7									NID			NID
	SG-20	15-WAS-011-SG		Primary Duplicate	Deep Soil Gas	2400	5.9 12	JD JD	4.0	9.5	ND		3.4 7.0	ND ND		7.0	ND ND	2.2 4.5	ND ND		3.4	ND ND
	SG-21	15-WAS-012-SG		Primary	Deep Soil Gas	2000	5.6	JD	5.7	4.4	ND		3.2	ND		3.2	ND	2.1	ND		3.2	ND
		16-WAS-015-SG		Primary	Deep Soil Gas	290	5.8		5.7	4.4	ND		3.4	ND	19	3.4	IND	2.2	ND		3.4	ND
		15-WAS-010-SG		Primary	Deep Soil Gas	4400	19		89	15			11	ND	96	11		7.3	ND		11	ND
Midnight		16-WAS-014-SG		Primary	Deep Soil Gas	2600	12		25	9.2			6.8	ND	100	6.8		4.4	ND		6.8	ND
Mine	SG-24	16-WAS-025-SG		Primary	Deep Soil Gas	800	5.2		7.2	4.1			3.0	ND	24	3.0		2.0	ND		3.0	ND
	Levels for Co	ommercial Deep S			•		18,000			880 - 840			3,100 - NA			26,000 - N	A	2,800	•		88,000	
AA-5		14-WAS-020-AA		Primary	Outdoor Air	1.6	0.21			0.17	ND		0.12	ND		0.63	ND	0.040	ND			
Notes:			-, -,	)				1										2.2.10			l	

Bold/shaded values indicate exceedance of ADEC Target Levels

Underlined values indicate method reporting limit (MRL) exceedance of ADEC Target Levels

NA = ADEC has not calculated a Target Level for this chemical due to lack of toxicity information for inhalation exposure pathway.

 $\mu g/m^3$  = 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

JD = Results qualified as estimated due to RPD between primary and duplicate sample not meeting criteria.

### Table 3: VI Assessment Petroleum Analytical Results - Boundary Vicinity November 2015 - May 2017 June 2017 Data Summary Report 314 Wendell Avenue Site

Building	Location	Sample ID	Date Measured	Sample Type	Matrix	Tì	PH-Gasol (μg/m3)	ine		Benzene (µg/m3)			Toluene (μg/m3)		E	thylbenzei (µg/m3)	ne	Xy	ylenes (to (μg/m3)	al)
			Wicusarea	Type		Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag	Result	MRL	Dataflag
		16-WAS-029-IA	11/3/2016	Primary	Indoor Air	910	130	JA,JN												
Midnight	IA-12	16-WAS-030-IA	11/3/2016	Duplicate	Indoor Air	790	190	JN												
Basement	111-12	17-WAS-002-IA	5/10/2017	Primary	Indoor Air	390	210	JN, JD												
		17-WAS-003-IA	5/10/2017	Duplicate	Indoor Air	240	180	JN, JD												
Midnight	IA-13	16-WAS-031-IA	11/3/2016	Primary	Indoor Air	680	160	JN												
Upstairs	IA-13	17-WAS-001-IA	5/10/2017	Primary	Indoor Air	810	140	JN												
<b>ADEC Target</b>	Levels for Co	mmercial Indoor	Air							16		2	1,900 - 7,50	00		49			440	
	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	
	55 0	17-WAS-003-SS	5/10/2017	Primary	Sub-Slab Soil Gas		200	ND		0.63	ND		0.75	ND		0.86	ND		1.72	ND
Midnight	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	2.2	3.2	
Mine	33-7	17-WAS-001-SS	5/9/2017	Primary	Sub-Slab Soil Gas		220	ND	1.1	0.68		7.5	0.81		2.4	0.93		19	1.86	
	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
	33-10	17-WAS-002-SS	5/9/2017	Primary	Sub-Slab Soil Gas	790	200	JN		0.61	ND	1.2	0.72			0.83	ND	1.8	1.66	
<b>ADEC Target</b>	Levels for Co	mmercial Sub-Sl	ab Soil Gas							160			220,000			490 - 94			4,400	
	SG-20	15-WAS-011-SG	11/6/2015	Primary	Deep Soil Gas															
	5G-20	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	SG-24	16-WAS-014-SG	3/22/2016	Primary	Deep Soil Gas															
Mine	5G-24	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
<b>ADEC Target</b>	Levels for Co	mmercial Deep S	oil Gas							1,600			2,200,000			4,900			44,000	

#### Notes:

Bold/shaded values indicate exceedance of ADEC Target Levels

All samples were collected with Summa™ Canisters

 $\mu g/m^3$  = 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

JD = 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.

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#### TABLE 4: COMPREHENSIVE CHLORINATED ETHENE RESULTS 2008-2017 Groundwater and Chena River Monitoring

314 Wendell Avenue Site

					Che	emical Name	Tet	rachloroeth	nene	Tr	richloroethe	ne	cis-1,	2-Dichloroe	thene	trans-1	1,2-Dichloro	ethene	V	inyl Chloric	de
				ADEC Cleanu	p Levels for C	Groundwater		41			2.8			36			360			0.19	
						Units		μg/L			μg/L			μg/L			μg/L			μg/L	
		Date			Sample QC				Data			Data			Data			Data			Data
Area	Location	Measured	Sample ID	Sample Type	Type	Lab Name	Result	MRL	Flags	Result	MRL	Flags	Result	MRL	Flags	Result	MRL	Flags	Result	MRL	Flags
	MW-1	10/9/2008	08WAS389GW	Groundwater	Primary	Onsite		0.20	ND		0.20	ND		0.20	ND		0.20	ND		0.20	ND
t n	MW-1	10/20/2009	09WAS208GW	Groundwater	Primary	Onsite		0.20	ND		0.20	ND		0.20	ND		0.20	ND		0.20	ND
Northeast Delineation	MW-1	4/19/2010	10WAS129GW	Groundwater	Primary	Onsite	0.39				0.20	ND		0.20	ND		0.20	ND		0.20	ND
the	MW-1	6/22/2010	10WAS183GW	Groundwater	Primary	Onsite		0.20	ND		0.20	ND		0.20	ND		0.20	ND		0.20	ND
Nor	MW-1	3/27/2012	12-WAS-083-GW	Groundwater	Primary	Onsite		0.20	ND		0.20	ND		0.20	ND		0.20	ND		0.20	ND
~ A	MW-1	6/5/2012	12-WAS-098-GW	Groundwater	Primary	Onsite		0.20	ND		0.20	ND		0.20	ND		0.20	ND		0.20	ND
	PP-3	10/9/2008	08WAS388GW	Groundwater	Primary	Onsite	0.89				0.20	ND		0.20	ND		0.20	ND		0.20	ND
	MW-5	10/18/2008	08WAS429GW	Groundwater	Primary	Onsite	31				0.20	ND		0.20	ND		0.20	ND		0.20	ND
	MW-5	10/18/2009	09WAS198GW	Groundwater	Primary	Onsite	27				0.20	ND		0.20	ND		0.20	ND		0.20	ND
Upgradient	MW-5	5/11/2010	10WAS165GW	Groundwater	Primary	Onsite	10				0.20	ND		0.20	ND		0.20	ND		0.20	ND
dié	MW-5	6/22/2010	10WAS184GW	Groundwater	Primary	Onsite	11	0.0			0.20	ND		0.20	ND		0.20	ND		0.20	ND
gra	MW-5 MW-5	10/20/2010	10WAS-216-GW	Groundwater	Primary	Onsite	9.6	0.2			0.20	ND ND		0.20	ND ND		0.2	ND ND		0.20	ND ND
ď	MW-5	3/27/2012 6/5/2012	12-WAS-087-GW 12-WAS-104-GW	Groundwater Groundwater	Primary Primary	Onsite Onsite	6.8	0.20		0.29	0.20	ND		0.20	ND		0.20	ND		0.20	ND
	PP-2	10/10/2008	08WAS400GW	Groundwater	Primary	Onsite	21	0.20		0.29	0.20			0.20	ND		0.20	ND		0.20	ND
	PP-2	10/20/2009	09WAS209GW	Groundwater	Primary	Onsite	22			0.72				0.20	ND		0.20	ND		0.20	ND
	MW-6S	10/20/2003	10WAS430GW	Groundwater	Primary	Onsite	1200			77			150	0.20	ND	26	0.20	ND		10	ND
	MW-6S	10/20/2009	09WAS210GW	Groundwater	Primary	Onsite	630			100			220			31				4.0	ND
	MW-6S	5/11/2010	10WAS164GW	Groundwater	Primary	Onsite	200			30			160			39				1.0	ND
	MW-6S	6/22/2010	10WAS189GW	Groundwater	Primary	Onsite	240			20			96			18				1.0	ND
	MW-6S	5/6/2011	11-WAS-044-GW	Groundwater	Primary	Onsite	96	1		12	1		50	1		18	1			1	ND
	MW-6S	3/28/2012	12-WAS-090-GW	Groundwater	Primary	Onsite	150	1.0		56	1.0		180	1.0		57	1.0			1.0	ND
	MW-6S	6/5/2012	12-WAS-105-GW	Groundwater	Primary	Onsite	85	0.40		13	0.40		31	0.40		64	0.40			0.40	ND
	MW-6S	3/29/2017	17-MW6S-002-GW	Groundwater	Primary	SGS	56.6	0.500		52.3	0.500		197	0.500		51.8	0.500			0.0750	ND
	MW-6M	3/26/2013	13-WAS-021-GW	Groundwater	Primary	Onsite	2.3	0.20		0.22	0.20			0.20	ND	0.46	0.20			0.20	ND
	MW-6M	5/16/2013	13-WAS-030-GW	Groundwater	Primary	Onsite		1.0	ND		0.20	ND		0.20	ND		0.20	ND		0.20	ND
	MW-7	10/18/2008	08WAS432GW	Groundwater	Primary	Onsite	390			14			34				2.0	ND		2.0	ND
	MW-7	10/20/2009	09WAS214GW	Groundwater	Primary	Onsite	360			8.8			14				2.0	ND		2.0	ND
	MW-7	4/20/2010	10WAS133GW	Groundwater	Primary	Onsite	350			14			42				2.0	ND		2.0	ND
	MW-7	5/22/2010	10WAS188GW	Groundwater	Primary	Onsite	320			14			25				2.0	ND		2.0	ND
	MW-7	3/29/2017	17-MW7-001-GW	Groundwater	Primary	SGS	3.45	0.500		1.49	0.500		11.1	0.500			0.500	ND		0.0750	ND
	MW-8S	10/18/2008	08WAS433GW	Groundwater	Primary	Onsite	13000			150			200				60	ND		60	ND
	MW-8S	10/20/2009	09WAS212GW	Groundwater	Primary	Onsite	3700			230			420				20	ND		20	ND
ea	MW-8S	4/20/2010	10WAS132GW	Groundwater	Primary	Onsite	8900			280			340				50	ND		50	ND
Ar	MW-8S	6/22/2010	10WAS186GW	Groundwater	Primary	Onsite	3400			200			580				20	ND		20	ND
3,56	MW-8S	10/20/2010	10WAS-213-GW	Groundwater	Primary	Onsite	10000	50		610	50		590	50			50	ND		50	ND
Source Area	MW-8S	5/6/2011	11-WAS-042-GW	Groundwater	Primary	Onsite	6900	50		400	50		800	50			50	ND		50	ND
Ω.	MW-8S	3/28/2012	12-WAS-091-GW	Groundwater	Primary	Onsite	2600	20		320	20		230	20			20	ND		20	ND
	MW-8S	6/5/2012	12-WAS-106-GW	Groundwater	Primary	Onsite	550	10	<u> </u>	41	0.40		66	0.40		6.4	0.40		<u> </u>	0.40	ND
	MW-8S	8/14/2012	12-WAS-125-GW	Groundwater	Primary	Microseeps	1500	50	-	120	5	-	290	50 10	-	1.1	10	т	<b> </b>	10	NID T
	MW-8SR	8/14/2012 3/25/2013	12-WAS-125-GW 13-WAS-015-GW	Groundwater	Primary	Onsite	1400 1100	10 10	J	130 140	10 10	J	240 260	10	J	11 10	10 10	J	1	10 10	ND,J ND
	MW-8SR MW-8SR	3/25/2013 5/16/2013	13-WAS-015-GW 13-WAS-027-GW	Groundwater Groundwater	Primary Primary	Onsite Onsite	760	20	<del>                                     </del>	90	4.0		230	4.0		7.8	4.0		1	4.0	ND ND
	MW-8SR MW-8SR	3/26/2014	13-WAS-027-GW 14-WAS-039-GW	Groundwater	Primary	Pace	902	10.0	<b> </b>	213	4.0		304	10.0		6.4	1.0		1	0.40	ND ND
	MW-8SR MW-8SR	3/26/2014	14-WAS-039-GW 14-WAS-040-GW	Groundwater	Duplicate	Pace	902 887	10.0	1	205	4.0		294	10.0		7.0	1.0		1	0.40	ND ND
	MW-8SR MW-8SR	3/29/2014	17-MW8SR-003-GW	Groundwater	Primary	SGS	412	10.0		96.3	0.500	JM	112	0.500	JM	3.40	0.500			0.0750	ND
	MW-8SR MW-8SR	3/29/2017	17-MWX-006-GW	Groundwater	Duplicate	SGS	421	10.0		99.0	0.500	JM	117	0.500	JM	3.30	0.500			0.0750	ND
	MW-8M	3/25/2017	13-WAS-016-GW	Groundwater	Primary	Onsite	1.0	0.20	JD	0.26	0.20	OTAT	117	0.20	ND	0.00	0.300	ND		0.20	ND
	MW-8M	3/25/2013	13-WAS-017-GW	Groundwater	Duplicate	Onsite	1.5	0.20	JD	0.29	0.20		0.26	0.20	.415	<b>†</b>	0.20	ND	1	0.20	ND
	MW-8M	5/16/2013	13-WAS-028-GW	Groundwater	Primary	Onsite	1.0	1.0	ND	0.20	0.20	ND	0.20	0.20	ND	-	0.20	ND	1	0.20	ND
	MW-8M	5/16/2013	13-WAS-029-GW	Groundwater	Duplicate	Onsite	1.1	1.0	1.12		0.20	ND		0.20	ND		0.20	ND		0.20	ND
	MW-8D	6/22/2010	10WAS187GW	Groundwater	Primary	Onsite	5.9	1.0	<u> </u>		0.20	ND	0.5	0.20	.,,,,		0.20	ND	<u> </u>	0.20	ND
	MW-8D	10/20/2010	10WAS-214-GW	Groundwater	Primary	Onsite	0.23	0.2			0.2	ND		0.2	ND		0.2	ND	1	0.2	ND
	MW-8D	10/20/2010	10WAS-215-GW	Groundwater	Duplicate	Onsite	0.24	0.2			0.2	ND		0.2	ND		0.2	ND	1	0.2	ND
	MW-8D	5/6/2011	11-WAS-043-GW	Groundwater	Primary	Onsite		0.2	ND		0.2	ND		0.2	ND		0.2	ND	1	0.2	ND
								•	•		•	•	•	•	•			•	•	1	

#### TABLE 4: COMPREHENSIVE CHLORINATED ETHENE RESULTS 2008-2017 Groundwater and Chena River Monitoring

314 Wendell Avenue Site

Acta   Color   State						Ch	emical Name	Tet	rachloroeth	ene	T	richloroethe	ne	cis-1,	2-Dichloroe	thene	trans-	1,2-Dichloro	ethene	V	inyl Chlori	de
Control   Cont					ADEC Cleanup	Levels for (	Groundwater		41			2.8			36			360			0.19	
Marche   M							Units		μg/L			μg/L			μg/L			μg/L			μg/L	
## WWG (000000) UPG-001-000000000000000000000000000000000			Date			Sample QC				Data			Data			Data			Data			Data
May 80   Colorent   Prince   Prince   Colorent   Prince   Pr	Area	Location	Measured	Sample ID	Sample Type	Type	Lab Name	Result	MRL	Flags	Result	MRL	Flags	Result	MRL	Flags	Result	MRL	Flags	Result	MRL	Flags
WW. St.   Control   W. W. St.   Control   W. W. St.   Control   W. W. St.   Control   W. W. St.   W. W. W. St.   W. W. W. St.   W. W. W. St.   W.		MW-9S	10/18/2008	08WAS434GW	Groundwater	Primary	Onsite	1.7			5			19			3.4				0.20	ND
No.   Section   Processing		MW-9S	10/18/2009		Groundwater	Primary	Onsite	1.2			4.7			25			4.6				0.20	
## WW 98   100-92819   100-928																						
No. 00   101-102-00   OPMASS/FOW   OPMASS/							1		0.2			0.2			0.2			0.2				
Winds						-	1															
NW   Secretary   1000																						
WW.SE   1999/1991   1998/SE   1999/SE   1999																						
New No.   1999  10   1998/SPE   1998   199						-			0.9			0.0			0.9			0.9				
Wilson   W																						
Windows   40,000   1   11,948-075000   Consententer   Option   O						-																
Winds						-																
New Part   Principle   Princ						_																
New Part   1988   198																						
Web						-	1											0.40				
Web	rea	MW-9M	6/5/2012		Groundwater	_	Onsite	0.78	0.40		83	0.40		33	0.40		4.4	0.40			0.40	ND
Web	A é						1			JD												
Web	rce	MW-9M	8/14/2012	12-WAS-123-GW	Groundwater	Primary	Microseeps	61	5		45	5		25	5							
Web	Şon	MW-9M	8/14/2012	12-WAS-123-GW	Groundwater	Primary	Onsite	56	0.40	J	51	0.40	J	19	0.40	J	3.1	0.40	J		0.40	ND,J
MW-W    My-20013   33-WAS-910-W    Groundwater   Frimany   Onsite   13   0.40   48   0.40   41   0.40   3.5   0.40   0.40   ND	52	MW-9M	1/14/2013	13-WAS-002-GW	Groundwater	Primary	Microseeps	80	5			5		52	5							
MW-08					Groundwater	Primary	Microseeps															
MW-100   14-WAS-097-0W   Groundwater   Primary   Primary   Primary   Primary   Constitute   Primary   Primary   Constitute   Primary   Prim																						
MW-180    3292013   17-3MW8400-06-W   Groundwater   Primary   SGS   6.76   0.200   15.0   0.500   0.210   0.500   0.20   ND																						
MW-13M   3282013   13-WAS-9036 W   Groundwater   Primary   Onsite   0.47   0.20   0.51   0.20   ND																						
MW-13M   515/2013   3-WAS-026-GW   Groundwater   Primary   Prima														1	1		3.16					
MW-13M   328/2014   1-WAS-038-GW   Groundwater   Primary   Pace   1.0   ND   0.58   0.40   1.0   ND   1.0   ND   0.40   ND   ND   Primary   ND   ND   ND   ND   ND   ND   ND   N								0.47		1770	0.51			0.24		270						
PP1							1				0.50		ND									
PF-5   10/10/2008   08WAS-101GW   Grandwater   Primary   Onsite   24								F.CO.	1.0	ND		0.40		F.CO	1.0	ND	00	1.0	ND			
PP-5   1/20/20/20/9   1/0WAS13/GW   Groundwater   Primary   Onsite   38     4.5   5     0.99     0.20   ND																						
PP-5   6222010   10WAS130GW   Groundwater   Primary   Onsite   61   10   11   1   2.2   2   0.20   ND						-	1															
PF-5 (2222010   10WAS185GW   Groundwater   Primary   Onsite   46   0.2   7.6   0.2   7.9   0.2   2   0.2   0.2   ND																						
PF-5 MG-2011 II-WAS-027-GW Groundwater Primary Onsite 46 0.2 7.6 0.2 7.9 0.2 2 0.2 MD MW-48 10192000 09WAS-033GW Groundwater Primary Onsite 0.72 5 55 17 1 10 0.40 ND MW-48 41992010 10WAS-033GW Groundwater Primary Onsite 0.81 49 21 12 12 0.40 ND MW-48 41992010 10WAS-033GW Groundwater Primary Onsite 0.81 49 21 12 12 0.40 ND MW-48 41992010 10WAS-033GW Groundwater Primary Onsite 0.81 48 21 12 12 0.40 ND MW-48 (802)2010 10WAS-033GW Groundwater Primary Onsite 0.81 49 21 12 0.2 0.40 ND MW-48 (802)2010 10WAS-033GW Groundwater Primary Onsite 0.89 ND 9.3 22 15 0.2 112 0.2 0.2 ND MW-48 10192000 10WAS-033GW Groundwater Primary Onsite 0.89 0.2 ND 9.3 2 0.2 15 0.2 112 0.2 0.2 ND MW-48 10192000 10WAS-035GW Groundwater Primary Onsite 0.69 0.2 ND 7.99 0.2 16 0.2 12 0.2 12 0.2 ND MW-48 30302017 17-MWAS-035-GW Groundwater Primary Onsite 0.69 0.2 ND 7.99 0.2 14 0.2 13 0.2 ND MW-48 10192000 09WAS-035GW Groundwater Primary Onsite 0.2 ND 7.99 0.2 14 0.2 13 0.2 0.2 ND MW-48 10192000 09WAS-035GW Groundwater Primary Onsite 0.2 ND 7.99 0.2 14 0.2 13 0.2 0.2 ND MW-4M 10192000 09WAS-035GW Groundwater Primary Onsite 1.7 0.500 ND 1.79 0.500 26.4 0.500 9.33 0.2 0.2 ND MW-4M 10192000 10WAS-035GW Groundwater Primary Onsite 1.7 0.500 ND 1.79 0.500 26.4 0.500 9.33 0.2 0.000 ND MW-4M 10192000 10WAS-035GW Groundwater Primary Onsite 1.7 0.500 ND 1.79 0.500 26.4 0.500 9.33 0.2 0.500 ND MW-4M 10192000 10WAS-035GW Groundwater Primary Onsite 1.7 0.500 10WAS-035GW Groundwater Primary Onsite 1.7 0.2 48 0.2 13 0.2 40 0.2 ND MW-4M 10192010 10WAS-035GW Groundwater Primary Onsite 1.7 0.2 48 0.2 13 0.2 40 0.2 ND MW-4M 10192010 10WAS-035GW Groundwater Primary Onsite 1.7 0.2 48 0.2 13 0.2 40 0.2 13 0.2 0.2 ND MW-4M 10192010 10WAS-035GW Groundwater Primary Onsite 1.7 0.2 48 0.2 13 0.2 40 0.2 13 0.2 0.2 ND MW-4M 10192010 10WAS-035GW Groundwater Primary Onsite 1.7 0.2 14 0.0 0.0 14 0.0 0 14 0.0 0 14 0.0 0 0.0 0.0 0.0 ND MW-4M 10192010 10WAS-035GW Groundwater Primary Onsite 1.0 ND 17 0.0 0 11 0.0 0 11 0.0 0 0 0.0 0.0 0.0 0																						
MW-48   0192008   08WAS4376W   Groundwater   Primary   Onsite   1						-	1		0.2			0.2			0.2			0.2				
MW-48   My-2010   OWAS123GW   Groundwater   Primary   Onsite   0.72     53     17     9.9     0.40   ND   MW-48   My-2010   OWAS123GW   Groundwater   Duplicate   Onsite   0.78   48   21   12     0.40   ND   MW-48   My-2010   OWAS124GW   Groundwater   Duplicate   Onsite   0.78     48   21     12     0.40   ND   MW-48   My-2010   OWAS124GW   Groundwater   Duplicate   Onsite   0.78     48   21     12     0.2   0.2   ND   MW-48   My-2010   OWAS124GW   Groundwater   Primary   Onsite   0.80   ND   MW-48   My-2010   OWAS124GW   Groundwater   Primary   Onsite   0.69   0.2   ND   MW-48   My-2011   Owas124GW   Groundwater   Primary   Onsite   0.69   0.2   ND   MW-48   My-48   M								1	0.2			0.2			0.2			0.2				
MW-48								0.72														
MW-48   479/2010   10WAS124GW   Groundwater   Primary   Onsite   0.78   0.20   ND   9.3   22   19   0.20   ND   ND   ND   NW-48   672/12010   10WAS124GW   Groundwater   Primary   Onsite   0.20   ND   9.3   22   19   0.20   ND   ND   NW-48   672/12010   10WAS-202-GW   Groundwater   Primary   Onsite   0.69   0.2   37   0.2   16   0.2   12   0.2   0.2   ND   ND   ND   NW-48   46/2011   11-WAS-035-GW   Groundwater   Primary   Onsite   0.69   0.2   ND   7.9   0.2   14   0.2   13   0.2   0.2   ND   ND   ND   NW-48   56/2011   11-WAS-035-GW   Groundwater   Primary   Onsite   0.69   0.2   ND   7.9   0.2   14   0.2   13   0.2   0.2   ND   ND   ND   ND   NW-4M   10/18/2008   0.8WAS438GW   Groundwater   Primary   Onsite   2   0.69   0.50   ND   1.79   0.500   0.60   0.500   0.0750   ND   ND   ND   ND   ND   NW-4M   4/9/2010   10WAS12GGW   Groundwater   Primary   Onsite   4.3   0.50   0.000   0.00000   0.0000   0.0000   0.0000   0.0000   0.0000   0.0000   0.00000   0.00000   0.00000   0.0000   0.0000   0.00000   0.00000   0.00000   0.00000						-	1															
MW-48 6/21/2010 10WAS174GW Groundwater Primary Onsite 1.4 0.2 ND My-48 10/19/2010 10WAS-202-GW Groundwater Primary Onsite 1.4 0.2 S2 0.2 15 0.2 12 0.2 0.2 ND My-48 4 6/2011 11-WAS-023-GW Groundwater Primary Onsite 0.69 0.2 ND My-48 5 6/2/2011 11-WAS-023-GW Groundwater Primary Onsite 0.69 0.2 ND My-48 5 6/2/2011 11-WAS-035-GW Groundwater Primary Onsite 0.69 0.2 ND My-48 10/19/2009 09WAS205-GW Groundwater Primary Onsite 0.69 0.2 ND My-48 10/19/2009 09WAS205-GW Groundwater Primary Onsite 0.69 0.2 ND My-48 10/19/2009 09WAS205-GW Groundwater Primary Onsite 1.7 Onsite 1.3 S 12 S 12 S 12 S 13 S 14 S 15 S 14 S 14 S 15 S 14 S 14 S 15 S 15															1					1		
MW-48   4/6/2011   11-WAS-023-GW   Groundwater   Primary   Onsite   0.69   0.2   ND   7.9   0.2   14   0.2   13   0.2   0.2   ND   ND   ND   ND   ND   ND   ND   N		MW-4S			Groundwater	_	Onsite		0.20	ND				22			19					
MW-48   5/6/2011   11-WAS-035-GW   Groundwater   Primary   Onsite   0.2   ND   7.9   0.2   14   0.2   13   0.2   0.2   ND   ND   ND   NW-4M   01/8/2008   SWAS438GW   Groundwater   Primary   Onsite   2   69   12   4.9   0.500   4.9   0.40   ND   ND   NW-4M   10/19/2009   09WAS205GW   Groundwater   Primary   Onsite   1.7   60   10   4.2   0.40   ND   ND   NW-4M   10/19/2010   10WAS122GW   Groundwater   Primary   Onsite   4.3   55   13   5   0.40   ND   NW-4M   10/19/2010   10WAS125GW   Groundwater   Primary   Onsite   4.3   55   13   5   0.40   ND   NW-4M   10/19/2010   10WAS12GW   Groundwater   Primary   Onsite   4.3   55   13   5   0.40   ND   NW-4M   10/19/2010   10WAS12GW   Groundwater   Primary   Onsite   4.3   55   19   5.9   0.20   ND   NW-4M   10/19/2010   10WAS203-GW   Groundwater   Primary   Onsite   3.9   0.2   40   0.2   9   0.2   4   0.2   0.2   ND   ND   NW-4M   46/2011   11-WAS-032-GW   Groundwater   Primary   Onsite   3.0   0.2   40   0.2   9   0.2   4   0.2   0.2   ND   ND   NW-4M   3/27/2012   12-WAS-101-GW   Groundwater   Primary   Onsite   2.5   0.20   ND   ND   NW-4M   8/14/2012   12-WAS-101-GW   Groundwater   Primary   Onsite   0.20   ND   ND   ND   ND   ND   ND   ND   N		MW-4S	10/19/2010	10WAS-202-GW	Groundwater	Primary	Onsite	1.4	0.2		32	0.2		15	0.2		12	0.2			0.2	ND
MW-4M   MW-4		MW-4S	4/6/2011	11-WAS-023-GW	Groundwater	Primary	Onsite	0.69	0.2		37	0.2		16	0.2		12	0.2			0.2	
MV-4M   10/19/2010   10WAS-203-GW   Groundwater   Primary   Onsite   3.9   0.2   39   0.2   7.4   0.2   3.6   0.2   0.2   ND	e	MW-4S	5/6/2011		Groundwater	Primary	Onsite		0.2	ND	7.9	0.2					13	0.2				
MV-4M   10/19/2010   10WAS-203-GW   Groundwater   Primary   Onsite   3.9   0.2   39   0.2   7.4   0.2   3.6   0.2   0.2   ND	йr								0.500	ND		0.500			0.500			0.500				
MV-4M   10/19/2010   10WAS-203-GW   Groundwater   Primary   Onsite   3.9   0.2   39   0.2   7.4   0.2   3.6   0.2   0.2   ND	Ρľ																					
MV-4M   10/19/2010   10WAS-203-GW   Groundwater   Primary   Onsite   3.9   0.2   39   0.2   7.4   0.2   3.6   0.2   0.2   ND	ıse																					
MV-4M   10/19/2010   10WAS-203-GW   Groundwater   Primary   Onsite   3.9   0.2   39   0.2   7.4   0.2   3.6   0.2   0.2   ND	2h3																					
MV-4M   10/19/2010   10WAS-203-GW   Groundwater   Primary   Onsite   3.9   0.2   39   0.2   7.4   0.2   3.6   0.2   0.2   ND	d I				Groundwater				0.0					19	0.0			0.0				
MW-4M         3/27/2012         12-WAS-085-GW         Groundwater Primary         Onsite         2.5         0.20         MD         44         0.20         14         0.20         4.3         0.20         ND           MW-4M         6/5/2012         12-WAS-101-GW         Groundwater         Primary         Onsite         0.20         ND         39         0.20         31         0.20         8.9         0.20         ND           MW-4M         8/14/2012         12-WAS-117-GW         Groundwater         Primary         Onsite         0.60         0.20         J         40         0.20         J         4.0         0.20         J         4.0         0.20         J         0.20         ND,J           MW-4M         3/25/2013         13-WAS-013-GW         Groundwater         Primary         Onsite         1.0         0.20         35         0.20         23         0.20         5.3         0.20         ND           MW-4M         5/15/2013         13-WAS-023-GW         Groundwater         Primary         Onsite         1.0         ND         17         0.20         21         0.20         4.5         0.20         0.20         ND           MW-4M         3/26/2014         14-WAS-035																						
MW-4M         3/27/2012         12-WAS-085-GW         Groundwater Primary         Onsite         2.5         0.20         MD         44         0.20         14         0.20         4.3         0.20         ND           MW-4M         6/5/2012         12-WAS-101-GW         Groundwater         Primary         Onsite         0.20         ND         39         0.20         31         0.20         8.9         0.20         ND           MW-4M         8/14/2012         12-WAS-117-GW         Groundwater         Primary         Onsite         0.60         0.20         J         40         0.20         J         4.0         0.20         J         4.0         0.20         J         0.20         ND,J           MW-4M         3/25/2013         13-WAS-013-GW         Groundwater         Primary         Onsite         1.0         0.20         35         0.20         23         0.20         5.3         0.20         ND           MW-4M         5/15/2013         13-WAS-023-GW         Groundwater         Primary         Onsite         1.0         ND         17         0.20         21         0.20         4.5         0.20         0.20         ND           MW-4M         3/26/2014         14-WAS-035	sso						1															
MW-4M         6/5/2012         12-WAS-101-GW         Groundwater         Primary         Onsite         0.20         ND         39         0.20         31         0.20         8.9         0.20         ND           MW-4M         8/14/2012         12-WAS-117-GW         Groundwater         Primary         Microseeps         0.7         5         J         35         5         19         5	Di																					
MW-4M         8/14/2012         12-WAS-117-GW         Groundwater         Primary         Microseeps         0.7         5         J         35         5         19         5   .							1	4.0		VID												
MW-4M         8/14/2012         12-WAS-117-GW         Groundwater         Primary         Onsite         0.60         0.20         J         40         0.20         J         4.0         0.20         J         0.20         ND,J           MW-4M         3/25/2013         13-WAS-013-GW         Groundwater         Primary         Onsite         1.0         0.20         35         0.20         23         0.20         5.3         0.20         0.20         ND           MW-4M         5/15/2013         13-WAS-023-GW         Groundwater         Primary         Onsite         1.0         ND         17         0.20         21         0.20         4.5         0.20         0.20         ND           MW-4M         3/26/2014         14-WAS-035-GW         Groundwater         Primary         Pace         1.0         ND         11.8         0.40         20.5         1.0         7.2         1.0         0.40         ND								0.7									0.9	0.20			0.20	MD
MW-4M         3/25/2013         13-WAS-013-GW         Groundwater         Primary         Onsite         1.0         0.20         35         0.20         23         0.20         5.3         0.20         ND           MW-4M         5/15/2013         13-WAS-023-GW         Groundwater         Primary         Onsite         1.0         ND         17         0.20         21         0.20         4.5         0.20         0.20         ND           MW-4M         3/26/2014         14-WAS-035-GW         Groundwater         Primary         Pace         1.0         ND         11.8         0.40         20.5         1.0         7.2         1.0         0.40         ND													T,			Ţ,	4 0	0.20	T,		0.90	I UN
MW-4M         5/15/2013         13·WAS-023·GW         Groundwater         Primary         Onsite         1.0         ND         17         0.20         21         0.20         4.5         0.20         ND           MW-4M         3/26/2014         14·WAS-035·GW         Groundwater         Primary         Pace         1.0         ND         11.8         0.40         20.5         1.0         7.2         1.0         0.40         ND							1			9			-			9			9			
MW-4M 3/26/2014 14-WAS-035-GW Groundwater Primary Pace 1.0 ND 11.8 0.40 20.5 1.0 7.2 1.0 0.40 ND							1	1.0		ND												
						· ·																

#### TABLE 4: COMPREHENSIVE CHLORINATED ETHENE RESULTS 2008-2017

#### Groundwater and Chena River Monitoring

#### 314 Wendell Avenue Site

					Ch	emical Name	Tet	rachloroeth	ene	T:	richloroethe	ne	cis-1,	2-Dichloroe	thene	trans-	1,2-Dichlor	ethene	7	inyl Chlori	de
				ADEC Cleanup	Levels for (	Groundwater		41			2.8			36			360			0.19	
						Units		μg/L			μg/L			μg/L			μg/L			μg/L	
Area	Location	Date Measured	Sample ID	Sample Type	Sample QC Type	Lab Name	Result	MRL	Data Flags	Result	MRL	Data Flags	Result	MRL	Data Flags	Result	MRL	Data Flags	Result	MRL	Data Flags
	MW-4D	6/21/2010	10WAS173GW	Groundwater	Primary	Onsite	1.3			12			4.9			2.6				0.20	ND
	MW-4D	10/19/2010	10WAS-204-GW	Groundwater	Primary	Onsite	2.4	0.2		7.9	0.2		2.1	0.2		1.2	0.2			0.2	ND
	MW-4D	4/5/2011	11-WAS-021-GW	Groundwater	Primary	Onsite	2.5	0.2		13	0.2		4.1	0.2		2.5	0.2			0.2	ND
	MW-4D	5/5/2011	11-WAS-031-GW	Groundwater	Primary	Onsite	0.41	0.2		3.8	0.2		1.9	0.2		0.66	0.2			0.2	ND
	MW-12S	10/19/2009	09WAS201GW	Groundwater	Primary	Onsite	0.23			0.64			0.72			0.33				0.20	ND
	MW-12S	4/19/2010	10WAS125GW	Groundwater	Primary	Onsite	0.22			0.96			1.3			0.96				0.20	ND
	MW-12S	6/22/2010	10WAS181GW	Groundwater	Primary	Onsite		0.20	ND	2.3			7			3.5				0.20	ND
	MW-12S	10/20/2010	10WAS-208-GW	Groundwater	Primary	Onsite	0.24	0.2		0.81	0.2		0.63	0.2		0.64	0.2			0.2	ND
	MW-12S	5/5/2011	11-WAS-032-GW	Groundwater	Primary	Onsite	0.21	0.2		3.3	0.2		5.7	0.2		4.3	0.2			0.2	ND
	MW-12M	10/19/2009	09WAS200GW	Groundwater	Primary	Onsite	6.2			58			7.5			3.1				0.40	ND
	MW-12M	4/19/2010	10WAS126GW	Groundwater	Primary	Onsite	20			34			8.9			2.2				0.20	ND
	MW-12M	6/22/2010	10WAS180GW	Groundwater	Primary	Onsite	5.5			60			13			3.7				0.20	ND
ē	MW-12M	10/20/2010	10WAS-207-GW	Groundwater	Primary	Onsite	4.4	0.2		31	0.2		4.7	0.2		2	0.2		ļ	0.2	ND
Dissolved Phase Plume	MW-12M	4/6/2011	11-WAS-024-GW	Groundwater	Primary	Onsite	7.7	0.2		33	0.2		6.1	0.2		2.2	0.2		ļ	0.2	ND
Ы	MW-12M	5/5/2011	11-WAS-033-GW	Groundwater	Primary	Onsite	10	0.2		24	0.2		5.2	0.2		1.7	0.2			0.2	ND
rse	MW-12M	5/5/2011	11-WAS-034-GW	Groundwater	Duplicate	Onsite	11	0.2		24	0.2		5.2	0.2		1.8	0.2			0.2	ND
ha	MW-12M	3/28/2012	12-WAS-088-GW	Groundwater	Primary	Onsite	7.8	0.20		39	0.20		9.1	0.20		2.4	0.20			0.20	ND
d I	MW-12M	3/28/2012	12-WAS-092-GW	Groundwater	Duplicate	Onsite	6.9	0.20		39	0.20		9.1	0.20		2.2	0.20			0.20	ND
lve	MW-12M	6/5/2012	12-WAS-102-GW	Groundwater	Primary	Onsite	1.5	0.40		52	0.40		21	0.40		4.8	0.40			0.40	ND
980	MW-12M	6/5/2012	12-WAS-107-GW	Groundwater	Duplicate	Onsite	2.1	0.40	JD	51	0.40		22	0.40		4.8	0.40			0.40	ND
Ď.	MW-12M		12-WAS-119-GW	Groundwater	Primary	Microseeps	4.8	5	J	34	5	_	14	5							
	MW-12M	8/14/2012	12-WAS-119-GW	Groundwater	Primary	Onsite	4.8	0.20	J	42	0.20	J	12	0.20	J	2.8	0.20	J		0.20	ND,J
	MW-12M	8/14/2012	12-WAS-120-GW	Groundwater	Duplicate	Onsite	4.5	0.20	J	39	0.20	J	11	0.20	J	2.4	0.20	J		0.20	ND,J
	MW-12M	3/25/2013	13-WAS-014-GW	Groundwater	Primary	Onsite	9.2	0.20		31	0.20		12	0.20		2.5	0.20			0.20	ND
	MW-12M	5/15/2013	13-WAS-024-GW	Groundwater	Primary	Onsite	11	1.0		23	0.20		8.5 4.9	0.20		1.7	0.20			0.20	ND
	MW-12M	3/26/2014	14-WAS-036-GW	Groundwater	Primary	Pace	7.4	1.0		16.8 12.3	0.40			1.0 0.500		1.5 1.90	1.0			0.40	ND
	MW-12M MW-12D	3/29/2017	17-MW12M-005-GW 09WAS202GW	Groundwater	Primary	SGS	1.48 0.98	0.500		12.3	0.500		10.9 0.31	0.500		1.90	0.500	ND		0.0750 0.20	ND ND
	MW-12D	10/19/2009 4/19/2010	10WAS127GW	Groundwater Groundwater	Primary Primary	Onsite Onsite	0.98			0.38			0.31	0.20	ND		0.20	ND ND		0.20	ND ND
	MW-12D	6/21/2010	10WAS178GW		·		0.85			0.89			0.00	0.20	ND		0.20	ND		0.20	ND
	MW-12D	6/21/2010	10WAS178GW 10WAS179GW	Groundwater Groundwater	Primary Duplicate	Onsite Onsite	0.78			0.89			0.28 0.24				0.20	ND		0.20	ND
	MW-12D	10/20/2010	10WAS179GW 10WAS-209-GW	Groundwater	Primary	Onsite	0.45	0.2		0.82	0.2		0.24	0.2	ND		0.20	ND		0.20	ND
	MW-12D	5/6/2011	11-WAS-039-GW	Groundwater	Primary	Onsite	0.40	0.2		0.26	0.2		0.27	0.2	ND		0.2	ND		0.2	ND
	MW-12D	5/6/2011	11-WAS-040-GW	Groundwater	Duplicate	Onsite	0.9	0.2		0.92	0.2		0.27	0.2			0.2	ND		0.2	ND
	MW-10S	10/19/2009	09WAS206GW	Groundwater	Primary	Onsite	0.0	0.20	ND	0.34	0.20	ND	6.7	0.2		5.5	0.2	IND		0.20	ND
	MW-10S	4/19/2010	10WAS120GW	Groundwater	Primary	Onsite		0.20	ND	0.24	0.40	1410	2.3			2.3		<del>                                     </del>	<del>                                     </del>	0.20	ND
	MW-10S	6/21/2010	10WAS171GW	Groundwater	Primary	Onsite		0.20	ND	0.24	0.20	ND	4.2	-		4.3			<b> </b>	0.20	ND
	MW-10S	10/19/2010	10WAS-71GW	Groundwater	Primary	Onsite		0.20	ND	0.33	0.20	1415	2.9	0.2		3	0.2			0.2	ND
ry	MW-10S	5/5/2011	11-WAS-030-GW	Groundwater	Primary	Onsite		0.2	ND	0.63	0.2		3.2	0.2		2.9	0.2		<b> </b>	0.2	ND
da:	MW-10M	5/11/2010	10WAS167GW	Groundwater	Primary	Onsite	2	0.2	1117	14	0.2		5.3	0.2		4.3	9.2	t	1	0.20	ND
Downgradient Boundary	MW-10M	6/21/2010	10WAS1772GW	Groundwater	Primary	Onsite	1.4			9.1			5.9			6.2				0.20	ND
å	MW-10M	10/19/2010	10WAS-201-GW	Groundwater	Primary	Onsite	3.7	0.2		10	0.2		1.7	0.2		0.89	0.2			0.2	ND
int	MW-10M	4/5/2011	11-WAS-020-GW	Groundwater	Primary	Onsite	3.5	0.2		10	0.2		1.3	0.2		0.89	0.2			0.2	ND
die	MW-10M	5/6/2011	11-WAS-036-GW	Groundwater	Primary	Onsite	1.9	0.2		9	0.2		3	0.2		3	0.2			0.2	ND
ŗra	MW-10M	3/27/2012	12-WAS-084-GW	Groundwater	Primary	Onsite	4.6	0.20		15	0.20		3.4	0.20		1.1	0.20			0.20	ND
vng	MW-10M	6/5/2012	12-WAS-100-GW	Groundwater	Primary	Onsite	0.54	0.20		3.0	0.20		5.7	0.20		6.1	0.20			0.20	ND
)ov	MW-11S	10/20/2009	09WAS207GW	Groundwater	Primary	Onsite	3.01	0.20	ND	<b>-</b>	0.20	ND	25			14				0.20	ND
	MW-11S	4/19/2010	10WAS121GW	Groundwater	Primary	Onsite		0.20	ND	0.31			26			17				0.20	ND
	MW-11S	6/21/2010	10WAS177GW	Groundwater	Primary	Onsite		0.20	ND	0.2			19			11				0.20	ND
	MW-11S	10/19/2010	10WAS-206-GW	Groundwater	Primary	Onsite		0.20	ND	0.54	0.2		24	0.2		16	0.2			0.2	ND
	MW-11S	5/5/2011	11-WAS-028-GW	Groundwater	Primary	Onsite		0.2	ND	1.5	0.2		22	0.2		14	0.2			0.2	ND
1	111.17 1110	3.3.2011	_1 ,,110 020 0 11	310anawatel		3.115160		U.2	1 112	1.0	. V.2	1		U.2	1	1	J.2	1	1	J.2	

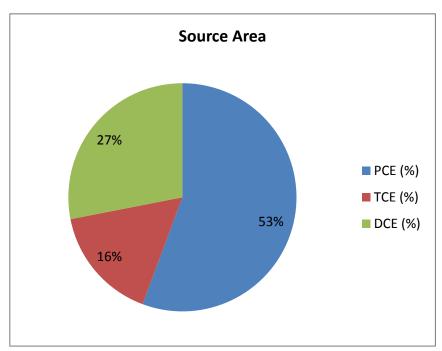
#### TABLE 4: COMPREHENSIVE CHLORINATED ETHENE RESULTS 2008-2017

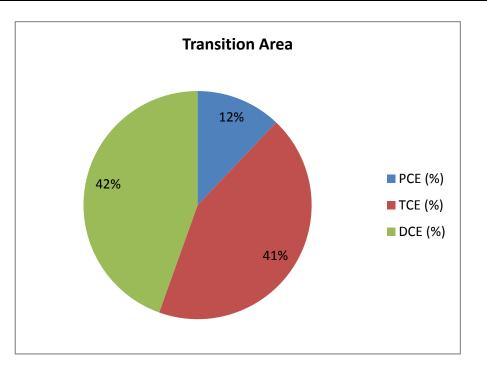
### Groundwater and Chena River Monitoring 314 Wendell Avenue Site

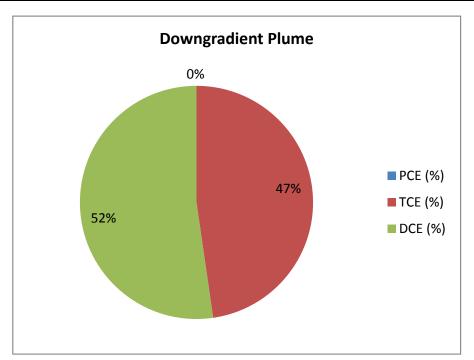
					Che	emical Name	Tet	trachloroeth	iene	T	richloroethe	ne	cis-1.	2-Dichloroe	thene	trans-	1,2-Dichloro	ethene	v	inyl Chloric	de
				ADEC Cleanu		-		41			2.8			36			360		•	0.19	
					<b>F</b>	Units		μg/L			μg/L			μg/L			μ <b>g/L</b>			μg/L	
		Date			Sample QC				Data			Data			Data			Data		<u> </u>	Data
Area	Location	Measured	Sample ID	Sample Type	Type	Lab Name	Result	MRL	Flags	Result	MRL	Flags	Result	MRL	Flags	Result	MRL	Flags	Result	MRL	Flags
	MW-11M	5/11/2010	10WAS168GW	Groundwater	Primary	Onsite	0.87			1.2			12			7				0.20	ND
Downgradient Boundary	MW-11M	6/21/2010	10WAS176GW	Groundwater	Primary	Onsite	0.27			1.2			9.8			5.9				0.20	ND
die	MW-11M	10/19/2010	10WAS-205-GW	Groundwater	Primary	Onsite	0.59	0.2		2.2	0.2		2.8	0.2		1.5	0.2			0.2	ND
ra	MW-11M	4/5/2011	11-WAS-019-GW	Groundwater	Primary	Onsite	0.45	0.2		2.7	0.2		3.2	0.2		1.5	0.2			0.2	ND
gu/ om	MW-11M	5/5/2011	11-WAS-029-GW	Groundwater	Primary	Onsite	0.21	0.2		2.4	0.2		9.8	0.2		4.4	0.2			0.2	ND
)ow D	MW-11M	3/27/2012	12-WAS-086-GW	Groundwater	Primary	Onsite	0.31	0.20		2.3	0.20		6.9	0.20		2.7	0.20			0.20	ND
	MW-11M	6/5/2012	12-WAS-099-GW	Groundwater	Primary	Onsite		0.20	ND	0.84	0.20		21	0.20		9.1	0.20			0.20	ND
ļ	MW-11M	3/26/2014	14-WAS-041-GW	Groundwater	Primary	Pace		1.0	ND		0.40	ND		1.0	ND		1.0	ND		0.40	ND
	PW-1	10/1/2008	09WAS003SW	Surface Water	Primary	Onsite		0.20	ND		0.20	ND	0.81			0.25		1770		0.20	ND
•	PW-1	6/10/2010	10WAS191PW	Porewater	Primary	Onsite		0.20	ND		0.20	ND	0.29	0.7		0 :-	0.20	ND		0.20	ND
•	PW-1	10/20/2010	10WAS-300-PW	Porewater	Primary	Onsite		0.2	ND	0.00	0.2	ND	1.5	0.2		0.41	0.2			0.2	ND
	PW-2	10/8/2008	09WAS002SW	Porewater	Primary	Onsite		0.20	ND	0.66			7.9			7.5				0.20	ND
1	PW-2	6/10/2010	10WAS192PW	Porewater	Primary	Onsite		0.20	ND	0.21			1.7			1.2				0.20	ND
1	PW-2	10/20/2010	10WAS-303-PW	Porewater	Primary	Onsite		0.2	ND	2.4	0.2		4.9	0.2		5.4	0.2			0.2	ND
1	PW-2	3/29/2012	12-WAS-080-PW	Porewater	Primary	Onsite		0.20	ND	2.1	0.20		7.0	0.20		5.6	0.20			0.20	ND
	PW-2	6/4/2012	12-WAS-095-PW	Porewater	Primary	Onsite		0.20	ND	0.23	0.20		0.58	0.20		0.45	0.20			0.20	ND
	PW-2	3/24/2014	14-WAS-032-PW	Porewater	Primary	Pace		1.0	ND	0.54	0.40		4.6	1.0		3.2	1.0			0.40	ND
	PW-2	3/24/2014	14-WAS-033-PW	Porewater	Duplicate	Pace		1.0	ND	0.41	0.40		6.2	1.0		4.2	1.0			0.40	ND
1	PW-3	10/8/2008	09WAS001SW	Porewater	Primary	Onsite		0.20	ND	0.49	0.00	NTD	9.9			9.7				0.20	ND
ury	PW-3	6/10/2010	10WAS193PW	Porewater	Primary	Onsite		0.20	ND		0.20	ND	3.5			3.5				0.20	ND
nds.	PW-3	10/20/2010	10WAS-307-PW	Porewater	Primary	Onsite		0.2	ND	5.7	0.2		7.9	0.2		8.4	0.2			0.2	ND
Boundary	PW-3	10/20/2010	10WAS-310-PW	Porewater	Duplicate	Onsite		0.2	ND	5.7	0.2		7.6	0.2		8.1	0.2			0.2	ND
	PW-3	3/24/2014	14-WAS-034-PW	Porewater	Primary	Pace		1.0	ND	0.41	0.40	1770	9.2	1.0	1770	6.8	1.0	1770		0.40	ND
Discharge	PW-4	6/10/2010	10WAS194PW	Porewater	Primary	Onsite		0.20	ND		0.20	ND		0.20	ND		0.20	ND		0.20	ND
ha	PW-4	10/20/2010	10WAS-301-PW	Porewater	Primary	Onsite		0.2	ND		0.2	ND	1	0.2			0.2	ND		0.2	ND
isc	PW-4	3/24/2014	14-WAS-031-PW	Porewater	Primary	Pace		1.0	ND	0.00	0.40	ND	1.8	1.0		2.4	1.0	ND		0.40	ND
G .	PW-5	6/10/2010	10WAS195PW	Porewater	Primary	Onsite		0.20	ND	0.23			2.6	0.0		2.4	0.0			0.20	ND
River	PW-5	10/20/2010	10WAS-305-PW	Porewater	Primary	Onsite		0.2	ND	3.2	0.2		6.1	0.2		6.6	0.2			0.2	ND
R.	PW-6	10/20/2010	10WAS-309-PW	Porewater	Primary	Onsite		0.2	ND	0.55	0.2		15	0.2		8.1	0.2			0.2	ND
Chena	PW-7	10/20/2010	10WAS-302-PW	Porewater	Primary	Onsite		0.2	ND	0.56	0.2		5.6	0.2		5.7	0.2			0.2	ND
λhe	PW-8	10/20/2010	10WAS-304-PW	Porewater	Primary	Onsite		0.2	ND	1.4	0.2		5.9	0.2		6.1	0.2			0.2	ND
0	PW-9	10/20/2010	10WAS-306-PW	Porewater	Primary	Onsite		0.2	ND	2.5	0.2		6.8	0.2		7.5	0.2			0.2	ND ND
Ī '	PW-9	3/29/2012	12-WAS-081-PW	Porewater	Primary	Onsite		0.20	ND	1.5	0.20	NID	9.5	0.20	ND	7.9	0.20	NID	-		
Ī '	PW-9	6/4/2012	12-WAS-096-PW	Porewater	Primary	Onsite		0.20	ND ND	0.0	0.20	ND	0.0	0.20	ND	0.2	0.20	ND	-	0.20	ND
•	PW-10	10/20/2010	10WAS-308-PW	Porewater	Primary	Onsite		0.2	ND ND	<b>3.6</b> 0.86	0.20		8.6	0.2		9.3 8.0	0.2			0.2	ND ND
Ī '	PW-10	3/30/2012	12-WAS-082-PW	Porewater	Primary	Onsite			ND ND	0.86		NID	12	0.20	ND	8.0	0.20	NID	-		ND ND
1	PW-10	6/4/2012	12-WAS-097-PW	Porewater	Primary	Onsite		0.20		1.4	0.20	ND			ND	0.4	0.20	ND	-	0.20	
•	PW-11 PW-12	4/5/2011 4/5/2011	11-WAS-013-PW 11-WAS-014-PW	Porewater	Primary	Onsite Onsite		0.2	ND ND	1.4 0.35	0.2		5.7	0.2		8.4 0.99	0.2			0.2	ND ND
<b>I</b> '				Porewater	Primary								1.3						-		
Ī '	PW-13	4/5/2011	11-WAS-015-PW	Porewater	Primary	Onsite		0.2	ND	1.6	0.2		1.7	0.2		0.47	0.2	-	-	0.2	ND
•	PW-13	4/5/2011	11-WAS-016-PW	Porewater	Duplicate	Onsite		0.2	ND ND	1.5			1.7			0.48	0.2			0.2	ND
,	PW-14	4/5/2011	11-WAS-017-PW	Porewater	Primary	Onsite		0.2	ND	2	0.2		3.5	0.2		2.3	0.2			0.2	ND
	PW-15	4/5/2011	11-WAS-018-PW	Porewater	Primary	Onsite		0.2	ND	3	0.2		11	0.2		7.6	0.2		<u> </u>	0.2	ND

Table 5: Chlorinated Ethene Molar Percentages June 2017 Data Summary Report 314 Wendell Avenue Site

			Mar	ch 2013			Mar	ch 2014			Mar	ch 2017			Median	
Area	Well	PCE (%)	TCE (%)	DCE (%)	Total Chlorinated Ethenes (µmol/L)	PCE (%)	TCE (%)	DCE (%)	Total Chlorinated Ethenes (µmol/L)	PCE (%)	TCE (%)	DCE (%)	Total Chlorinated Ethenes (µmol/L)	PCE (%)	TCE (%)	DCE (%)
	MW-6S/M	68%	8%	23%	0.020					10%	12%	78%	3.310			
Source Area	MW-8SR	63%	10%	27%	10.480	53%	16%	31%	10.260	56%	17%	27%	4.410	53%	16%	27%
	MW-13M	31%	42%	27%	0.009	0%	100%	0%	0.004							
TT '.' A	MW-9M	9%	41%	51%	0.900	27%	42%	32%	0.700	10%	25%	64%	0.390	100/	44.0/	400/
Transition Area	MW-12M	13%	54%	34%	0.440	19%	54%	28%	0.240	4%	40%	56%	0.230	12%	41%	42%
Downgradient	MW-4M	1%	47%	52%	0.560	0%	24%	76%	0.380	0%	8%	92%	0.340	0.0/	470/	F20/
Plume	PW-2					0%	5%	95%	0.080					0%	47%	52%







Notes:

PCE tetrachloroethene
TCE trichloroethene

DCE dichloroethene (sum of cis- and trans-isomers)

VC vinyl chloride µmol/L micromoles per liter



# Groundwater Sample Data Sheets March 2017



		GROUND	WATER SA	MPLING F	ORM		CLIENT:	ADEC	
		•					SITE: 1	endell	
SAMPLER(S) NA	AME: A.(O	L. AISW	valt				DATE: 3/3		
MPLE ID ON			007-011	N		•		ng well id: $ u$	IW 4M
YSI #/SN:						•	SHEET	of 1	
	My cloud	<u> </u>				1 in = 0.083 ft: 2 in		.25 ft; 4 in = 0.333 ft	
PRODUCT PRE		· · · · · · · · · · · · · · · · · · ·			DIAMETER OF	•		0.125	(FT)
PURGE AND SA		D: Low Flow		•	RADIUS OF W			0.065	(FT)
WATER LEVEL			/ater Interface P	•			OW MEASUR	ING POINT (D): 2	29.52 (ET)
TYPE OF PUMP				•	DEPTH TO GW			1 1 1	11.03 (FT)
WELL INTEGR		has P.T.			LENGTH OF W	ATER COLUM	N (L): (D-d)=	Fa. 89	17.89 (FT)
REQUIRED REI	11				VOLUME OF V	VATER COLUM	N (V): (3.14xR)	(RXL) 0.27	(CUBIC FT)
PUMP INTAKE	20	1			WELL VOLUM	E: (7.48xV)=			4.92 (GAL)
					Note: Groundwater volu		orge Volume ed in the field and use	Max Purg I for approximate purge volu	
		WATER			shown for informational	purposes only.	<u> </u>	TURBIDITY	APPEARANCE
ТІМЕ	VOLUME (GAL)	LEVEL (ft BTOC)	TEMP (deg C)	Conductivity (µS/cm)	DO (mg/L)	рН	ORP (mV)	(Visual: High, Med, Low, Clear)	OF WATER (Visual)
1009	0.00	11-43	3.42	331	2.70	6.89	-75.6	Chew #	clear
1014	0.20	11.91	3.64	ろかろ	0.72	6.89	-71.9	cear 4	cuar
1019	0.40	11.70	3.66	324	0.70	4.89	-72.1	Warx	diar
1024	0.40	11.70	3.70	335	0,25	6.89	-71.2	crearx	dear
1029	0.80	11:10	3.09	330	0.15	689	-67.7	clear	clear
1034	1,00	11.70	3 W8	326	0.11	4.89	-655	clear 4	cuar.
				mysenger Ann State (State and State and Anna Angel State and A	The Emilian is a resemble to a 10,000 in which is shown become in section				
			A A	VOLUMAR	۸	and a second			
			-2000	Chairil	ted				
			WW	Slow	MM	-			
				murts	<b>V</b> • • • • • • • • • • • • • • • • • • •		,		
				/XVV					
			:						
(1) STABILIZATION	ON is achieved wh	en three (3) conse	cutive readings of	pH, conductivity,	and DO collected				<u> </u>
	vals meet the follow ±0.1 standard un ±3% for tempera ±3% for conduct	its for pH ture			RP or ±10% if be > 0.50 mg/L. Thr			be considered stab	le.
		PURGE UNTI	PARAMETER S	STABILIZATION	or UNTIL 3 WEI	LL VOLUMES AI			
TOTAL VOLUM	IE PURGED:	15 (GAL)		FLOW RATE	(desired range is	100 to 500 mL/	<sub>min):</sub> 180	mlim - c	5,04ga1/m
SAMPLE TIME	: 1045			QC SAMPLES	COLLECTED:	none			
ANALYSIS (fill i		ttles collected)					2 . 3 . 1		
GRO (3 vials, HC			VOCs (3 vials, I	HCL) - D <del>SM-Sh</del> o	p Site Only	1	3 vials		
DRO ([2] 250ml a									Land State Control of the Control of
PAHs ([2] 1-L-am						Other:			
OMMENTS:	suifur sm	લ)	* organ	il susper	idid sono	ls presun	オ		
Turbidity (NTU)							-11-		s AM ATTERNATION
Sampler Signatu	re				OC Check Sign	nature			

	**************************************	GROUND	WATER SA	MPLING I	ORM		CLIENT:	ADEC	
	, t	GROUND			JI			Jendell	
	· \ (	· Δ	Curalt	gard*				129117	
SAMPLER(S) N			SuraH			-			
MPLE ID ON		111M@2 - C	02-GW			-		NG WELL ID:	100 6 3
	14100450					_	SHEET	OF	
Weather: OV	xucast_					_1 in = 0.083 ft; 2 in	= 0.167 ft; 3 in = 0	0.25 ft; 4 in = 0.333 ft	
PRODUCT PRE	ESENT: 1/0	ne		_	DIAMETER OF	F WELL:		0.125	(FT
PURGE AND SA	AMPLE METHO	DD: Low Flow		-	RADIUS OF W			<u>0.062</u>	
WATER LEVE	L MEASURING	DEVICE: Oil/V	Vater Interface I	Probe	TOTAL DEPTH	H OF WELL BEL	OW MEASUR	RING POINT (D):	•
TYPE OF PUM		*		-	DEPTH TO GW	V BELOW MEAS	SURING POIN	T (d):	<u>13.39 (ft</u>
WELL INTEGR	uty: 600	od		-	LENGTH OF W	VATER COLUMI	N (L): (D-d)=	2 4 0	1.09 (FT
REQUIRED RE			record	-	VOLUME OF V	WATER COLUM	IN (V): (3.14xR		(CUBIC FT
PUMP INTAKE	DEPTH: 14	, 1		_	WELL VOLUM		(GAL	L) X3= 0.3 Max Purg	(GAL
					Note: Groundwater volumes of the shown for informational	umes above were calculat		ed for approximate purge vol	•
	VOLUME	WATER	TENED	Conductivity	DO	- purposes only.	ORP	TURBIDITY (Visual: High,	APPEARANCE
TIME	VOLUME (GAL)	LEVEL (ft BTOC)	TEMP (deg C)	Conductivity (µS/cm)	(mg/L)	р <b>Н</b>	(mV)	Med, Low,	OF WATER (Visual)
1017	0	1452	-0.15	813	5.00	6.65	218.9	Low	Clear
1022	250mL	13.52	-0118	817	2.35	6.64	1932	Low	Clear
1024	500mL	13.54	-0.19	317	1,41	6.65	232.3	Low	Clear
1629	906m2	13.55	-0,02	817	1.11	6.66	215	10W	
1034	1000 ml	13.60	0.45	928	0.56	6.06	211	1000	CLEOUV
1				1.0 4.5		and the second s			
		0 1	M NOVO	1					
		75000	WWO C		TH				
			W	IW					
				1 July					
			The second secon	<i>ϕ</i> -3			4734		
1''	ION is achieved wh		cutive readings of	PH, conductivity,	and DO collected	1			
	<ul> <li>±0.1 standard un</li> <li>±3% for tempera</li> <li>±3% for conduct</li> </ul>	its for pH iture iivity	, DADAMETED	• ±10% for DO	> 0.50 mg/L. The	etween -100 mV a ree DO readings < LL VOLUMES A	< 0.50 mg/L ca	n be considered stab	ole.
TOTAL VOICE	ME DIDOPP	<u> </u>				s 100 to 500 mL/	1 7		
TOTAL VOLUM	1000	U·D (GAL)	1						
SAMPLE TIME	in number of bo	ttles collected)		JQC SAMPLES	S COLLECTED	: 10118			
GRO (3 vials, HO		concettu)	VOCs (3 vials.	HCL) <del>- DSM-Sh</del> t	op Site Only	V	3	***************************************	
BTEX (3 vials, H									
DRO ([2] 250ml									
	nbers) - SW Only					Other:			- WATER
MMENTS:						Igal =	3785.4m 1= 1135.6	L	
						. 3 ga	1=1135.6	v	
Turbidity (NTU	):								marana da santa da s
Sampler Signatu	are Jun	m	0		QC Check Sig	nature	us i	1	
		8		_					

		GROUND	WATER SA	AMPLING I	FORM		CLIENT: ADEC				
	J	^ .					SITE:Ac	3/30/17	-		
SAMPLER(S)	NAME: A	Cox, A	. Surra			····	BATE:AC U	verdell			
MPLE ID O	N COC: 17	-mw49	5-008	-GW		_	MONITORING WELL ID: MW45				
YSI #/SN:	44100 450			7700			SHEET	OF	1		
Weather: 🖒	unny	W				1 in = 0.083 ft; 2 in	= 0.167 ft; 3 in = 0	.25 ft; 4 in = 0.333 ft			
PRODUCT PR	ESENT: 10			_	DIAMETER O	F WELL:		0.1	25 (F.		
PURGE AND S	SAMPLE METHO	OD: Low Flow		_	RADIUS OF W	VELL (R):	210-220-2	0.00	63 (F)		
WATER LEVE	EL MEASURING	DEVICE: Oil/V	Vater Interface	Probe	TOTAL DEPTI	H OF WELL BEI	OW MEASUR	ING POINT (D):	19.64 (F)		
TYPE OF PUM	IP: Peristaltie			_	DEPTH TO GV	W BELOW MEA	SURING POIN	T (d):	1.64 (FI		
WELL INTEG	RITY: GOOC	, has PT		_	LENGTH OF V	WATER COLUM	N (L): (D-d)=		9.00 (FI		
REQUIRED R		one		=	VOLUME OF	WATER COLUM	IN (V): (3.14xR:	(RxL) O.1	(CUBIC F		
PUMP INTAK	<u>е depth: / (</u>	3.64		_	WELL VOLUM	ΔΕ: (7.48xV)= ()		,	(GAI		
						lumes above were calcula	urge Volume ted in the field and use	Max Purg d for approximate purge vol			
TIME	VOLUME (GAL)	WATER LEVEL (ft BTOC)	TEMP (deg C)	Conductivity (µS/cm)	DO (mg/L)	pH	ORP (mV)	TURBIDITY (Visual: High, Med, Low, Clear)	APPEARANCE OF WATER (Visual)		
9920	0.05	11.107	3.62	328	4.12	10.61	12.2	Clear	Clear		
0925	0.070,25		3.46	323	0.62	6.71	-133	Clear	Clear		
0930	0.090.95	11/2	3.42	320	0.360	6:75	-16.3	Clear	Chew		
11925	0.65	11.1.7	3.21	319	0.36	0.77	75.3	Clea-	Clear		
0940	0.85	11.67	3.18	320	0.33	6.78	-160	Clear	<u> </u>		
0170 0	0,00	17.07	3.10	340	0.35	0.75	160	Crew	Clear		
<u> </u>											
· · · · · · · · · · · · · · · · · · ·						<u> </u>					
				ws St	No. 120	1					
			30.000	303							
			300						**********		
4											
	TON is achieved wherevals meet the follow ±0.1 standard un ±3% for tempera ±3% for conduct	wing criteria: its for pH ture ivity		• ±10 mV for O	RP or ±10% if be > 0.50 mg/L. Thr	etween -100 mV a	0.50 mg/L can	be considered stab	le. V		
TOTAL VOLU	ME PURGED:	(GAL)		FLOW RATE	TE (desired range is 100 to 500 mL/min): 175 ml/m/m						
SAMPLE TIMI	E: 0945			QC SAMPLES	COLLECTED	: Non	e				
················	l in number of bo	ttles collected)		Millioniawawaniaw							
GRO (3 vials, H			VOCs (3 vials, 1	HCL) - DSM-Sho T	p-Site-Only	$\overline{}$	3 010	ris	***************************************		
BTEX (3 vials, F				<u> </u>							
DRO ([2] 250ml	mbers) - SW Only					Other:	<u> </u>				
MMENTS:	SULFUV SM	nell				Tomer.					
Turbidity (NTU	J):										
Sampler Signati					OC Check Sign	- 0 4					

	GROUNDWATER SAMPLING FORM								CLIENT: ADEC			
		t		SITE: Windell								
SAMPLER(S) N	AME: A C	ο · · · · · · · · · · · · · · · · · · ·	Sweett				DATE: 3/29/17					
SAMPLER(S) N  APLE ID ON	1000: 17-	MW7-1	101 - 6W			-		NG WELL ID: 1	Fun			
·	441004		<u> </u>			-	SHEET	\ OF }				
	wind					- 1 in = 0.083 ft; 2 in			·			
PRODUCT PRE	1.0	70			DIAMETER OF	_	1.5" =		(FT)			
PURGE AND SA	ew.			-	RADIUS OF W		,	0.063	(FT)			
WATER LEVEL			ater Interface l	- Probe			OW MEASUR	ING POINT (D):				
TYPE OF PUMI				<del></del>		V BELOW MEAS			(FT)			
WELL INTEGR	$\sim$	od		<del>-</del>	LENGTH OF W	ATER COLUM	N (L): (D-d)=	0.6	(FT)			
REQUIRED RE		lone		-		WATER COLUM		(RxL) ().0073	36 (CUBIC FT)			
PUMP INTAKE	4.	1.2		-		IE: (7.48xV)= ()		سعر دا ش	(GAL)			
		1,32		-		Min Pi	urge Volume	Max Purge I for approximate purge volu				
	1				shown for informationa		1	TURBIDITY				
TIME	VOLUME (GAL)	WATER LEVEL (ft BTOC)	TEMP (deg C)	Conductivity (µS/cm)	DO (mg/L)	рН	ORP (mV)	(Visual: High, Med, Low, Clear)	APPEARANCE OF WATER (Visual)			
And the state of t		Martin page registration and the special control of the special cont						The transport of the control of the				
		***************************************					- which are the second					
			•••••	1. \		W						
			~ //	ROLL	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\							
\		,	(9)		0							
		40	4	1 enou	SU ON							
		V	100	10	No.							
	- Constitution of the Cons	and the second second	7 (0						m-100-1			
				Contract of the Contract of th	and the second s							
		$(A_{ij},A_{ij}$	Company of the South State Company				The state of the s					
						<u></u>						
(1) STABILIZATI		, ,	cutive readings of	pH, conductivity,	and DO collected							
	vais meet the follow ±0.1 standard un ±3% for tempera ±3% for conduct	its for pH ture ivity	. PARAMETER S		> 0.50 mg/L. Thr	· ·	0.50 mg/L can	be considered stabl	e.			
TOTAL VOLUM	ME PURGED:	(GAL)				s 100 to 500 mL/		a				
SAMPLE TIME	2000	(3.22)			COLLECTED	10	······································	······································				
ANALYSIS (fill		tles collected)	The same of the sa	QC SAMI LES	COLLECTED	1 10 1 1						
GRO (3 vials, HC	CL)		VOCs (3 vials, 1	HCL) -\D8M-She	p-Site-Only-		3 vial	Δ				
BTEX (3 vials, H	CL)											
DRO ([2] 250ml a	ambers, HCL)			Ţ		T						
PAHs ([2] 1-L am		<u> </u>		<u> </u>		Other:			***************************************			
	F5 10.	fill MAJ										
Turbidity (NTU)	):											
Sampler Signatu	re Au	ans			QC Check Sign	1ature	mer	V				
		) 7					0					

		CLIENT: ADEC							
		SITE: Wendell							
SAMPLER(S) N	AME: A.	Ox, A.	Swrat	_	DATE: 3/29/17				
MPLE ID ON	1 coc: 17 - 1	,			006-6W	)	MONITORIN	NG WELL ID: Υ	NW 8512
1	1410045					_	SHEET	( OF	l
	vercost	1				1 in = 0.083 ft; 2 in	= 0.167 ft; 3 in = 0.	25 ft; 4 in = 0.333 ft	
PRODUCT PRE	SENT: MO	M			DIAMETER OF	- F WELL:		0.16	7 (FT)
PURGE AND SA				-	RADIUS OF W	ELL (R):		0.08	(FT)
WATER LEVEI			ater Interface I	Probe	TOTAL DEPTH	I OF WELL BEL	OW MEASURI	ING POINT (D):	16.68 (FT)
TYPE OF PUMI	P: Peristaltic	- 1000000000		•	DEPTH TO GW	V BELOW MEAS	SURING POINT	Γ (d):	13.28 (FT)
WELL INTEGR	AITY: (7000	1. has Pi			LENGTH OF W	VATER COLUMI	N (L): (D-d)=	3,40	13-28 AC (FT)
REQUIRED RE		re bolts		-		WATER COLUM			
PUMP INTAKE		i	Contractor and Contractor Contractor	-	WELL VOLUM	ACTO	-655 0.55 -53 46 (GAL)	1.1.	S (GAL)
				-	Note: Groundwater volu		irge Volume	Max Purg for approximate purge volu	
***************************************	1				shown for informationa		1	TURBIDITY	T
TIME	VOLUME (GAL)	WATER LEVEL (ft BTOC)	TEMP (deg C)	Conductivity (µS/cm)	DO (mg/L)	рН	ORP (mV)	(Visual: High, Med, Low, Clear)	APPEARANCE OF WATER (Visual)
12:43	0.0	13.37	36	802	8.01	6.93	146.5	Med	Cloudy
12:46	6.1	13.38	 3.71	806	10.2	6.92	147.1	Med	Cloudy
12:49	0.2	13.39	3.70	805	8.2	6.93	148,2	Med	Cloudy
12:52	0.4	13.39	3.67	805	80	6.94	147.5	med	Cloudy
12:55	0.6	13.39	3.65	806	0.95	694	147.6	low	Clear
12:58	0.8	13.40	3.70	807	0.75	10.94	147.6	r lear	Cher
	1.0	13.39	3.70	809	0.59	6.93	148.4	Clear	Clear
13:01	1.2	13.40	3.69	819	0.55	692	148.5	clear	Chier
13:04	1.2	1 3.90	ا الله	010	0.00	0.12	1 10.0	Coco	Concer
-				,	Gilize				
				5 S/a	BILLE				
		280	runet						
								***************************************	
									-
		wing criteria: its for pH  ture ivity	J	• ±10 mV for O	RP or ±10% if be > 0.50 mg/L. Thr	etween -100 mV a	0.50 mg/L can	be considered stab	le.
TOTAL VOLUN	ME PURGED:	.3 (GAL)		FLOW RATE	(desired range is	s 100 to 500 mL/	min): 150		
SAMPLE TIME	: 13:10	5		QC SAMPLES	COLLECTED:	mwx	@ 13:	20 + MS	MSD
ANALYSIS (fill	in number of bot	ttles collected)			4/1				
GRO (3 vials, HC	CL)		VOCs (3 vials, l	HCL) - D <mark>SM Sh</mark> o	p-Site-Only	T	V 3V	1) als	
BTEX (3 vials, H									
DRO ([2] 250ml a						lou			
PAHs ([2] 1-L am MMENTS:	ibers) - SW Only					Other:			
Turbidity (NTU)	):								
Sampler Signatu	re Jul	XUL,	2		QC Check Sign	nature Ac	ur ('er	$\sim$	
L-	1	)		-			0	(>_	101

		GROUNDY	VATER SA	AMPLING I	FORM		CLIENT:	ADEC				
		OILO OILD	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				SITE: W	nchell				
SAMPLER(S) NA	мь. <i>А</i>	.Cox, F	Succe	· ++				128117				
y1=1.45-40 <sub>10</sub>		4H1004	< 70 /	lo Somple		-		<del></del>	7 W T			
MPLE ID ON	- 7	THIOT	30 /	10 Surgice		-	SHEET	of OF	1			
YSI#/SN:	A City of the	<u>.</u>	MARANIA	: /								
	was-	<u> </u>	on the state of th		DIAL GETTER OF	<del>-</del>	= 0.167 ft; 3 m = 0	.25 ft; 4 in = 0.333 ft	70-			
PRODUCT PRES		ne			DIAMETER OF	_	C- 01	1974 7"	AC (FT)			
PURGE AND SA				<u>-</u> (1),	RADIUS OF W		0.0	NG PODUTI (D)	2			
WATER LEVEL	VI IIIMIIOV	DEVICE: Oil/W	ater Interface	Probe				ING POINT (D): /				
TYPE OF PUMP		,				V BELOW MEAS			3.95 (FT)			
WELL INTEGR			····			ATER COLUM			.60 (FT)			
REQUIRED REI	PAIRS: 10	ne		-				(RxL) 0.0013	(CUBIC FT)			
PUMP INTAKE	DEPTH: 14	·. 3			WELL VOLUM	1E: (7.48xV)= () . Min Po	UW (GAL urge Volume	X3= () \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	(GAL) e Volume			
l					Note: Groundwater vol	umes above were calculat	•	d for approximate purge volu	imes; rounded values are			
	VOLUME	WATER	TEMB	C = 4 - 4 - 4 - 4 - 4 -	ро	, parpose only	ORP	TURBIDITY (Visual, High	APPEARANCE			
TIME	VOLUME (GAL)	LEVEL (ft BTOC)	TEMP (deg C)	Conductivity (µS/cm)	(mg/L)	pН	(mV)	(Visual: High, Med, Low, Clear)	OF WATER (Visual)			
17:53	0.01	Q14.55	4.66	504	2.39	6.63	-7.7	LOWAL	Clear			
		The state of the s		A CONTRACTOR OF THE PARTY OF TH	and the second section of the production of the		to the second state of the	and the properties of the contract and t				
						and the state of t	and the second s					
AND ADDRESS OF THE PARTY OF THE					and the state of t	The second secon						
				AW								
. )		0.5	ild	Fail -								
		700	<u>Y - 6</u>	w\'								
	**************************************	A CONTRACTOR OF THE PARTY OF TH	10									
	and the second second											
	Martin and the state of the sta											
ee**		grande for the control of the contro	anne an ann an 194 (Marcadell Color disease (1983) an an an	n a marina di Kalaman dan dikanan kilayan kanan di silaman di kanan di silaman di silaman di silaman di silama	the state of the s							
								and the second s				
(1) STABILIZATIO	ON is achieved wh	en three (3) conse	cutive readings of	f pH, conductivity,	and DO collected		.]		<u></u>			
•	wals meet the follow ±0.1 standard un ±3% for tempera ±3% for conduct	nits for pH nture tivity	, PARAMETER		> 0.50 mg/L. Thr		< 0.50 mg/L can	be considered stab	le.			
TOTAL VOLUM	IE PURGED:	0.01 (GAL)		FLOW RATE	(desired range i	s 100 to 500 mL/	min): n /	<u>۸</u>				
SAMPLE TIME:	. 1				LES COLLECTED: MA							
ANALYSIS (fill i		ttles collected)										
GRO (3 vials, HC	L)		VOCs (3 vials,	HCL) - DSM Sho	p Site Only			***************************************				
BTEX (3 vials, HO	CL)					Ι						
DRO ([2]-250ml a					/000 DE 2000	Other:						
MMENTS:			L	1	t 1 -		`	·······				
	Thrged o	lry.			1991 =	37854 x Sgal= 625	ml					
Turbidity (NTU)	·											
Sampler Signatui	re ALLIN	INP	-		QC Check Sign	nature	m m	$\sim$				
	/	<del>'\'-'(</del>		_		<u>v1</u> ,	<i>X</i> -	$\sim$				

		CLIENT: ADEC								
		SITE: Wenchel								
SAMPLER(S) N	AME: A	Cox	A. Surro	H.			DATE: \$	the 3/291	17	
MPLE ID ON			m-004-1				MONITORIN	G WELL ID: //	เพ 9m	
	44100450						SHEET	) OF	1	
· · · ·	ercast					1 in = 0.083 ft; 2 in :			WE ASSESSED TO SEE	
	1				DIAMETER OF		- 0.107 H, 5 M - 0.	10.125	(FT)	
PRODUCT PRE					RADIUS OF WI			0.0629		
PURGE AND SA					Market Ma		OW MEASUR	ING POINT (D):		
WATER LEVEI		DEVICE: Oil/W	ater Interface F	robe	DEPTH TO GW				13.44 (FT	
TYPE OF PUMI	.1	les et T	) T	•				r (u).	16.13 (FT	
WELL INTEGR	J	nast	· 1 ·	•	LENGTH OF W	VATER COLUM		DI 1075	AC 0.198	
REQUIRED RE		<u> </u>					$\frac{10(V)}{48}$ (GAL)	21.61	(GAL	
PUMP INTAKE	DEPTH: 28	<u> </u>			WELL VOLUM	Min Pr	arge Volume	Max Purg	e Volume	
					Note: Groundwater volu shown for informational		ed in the field and used	for approximate purge vol	umes; rounded values are	
TIME	VOLUME (GAL)	WATER LEVEL (ft BTOC)	TEMP (deg C)	Conductivity (µS/cm)	DO (mg/L)	рН	ORP (mV)	TURBIDITY (Visual: High, Med, Low, Clear)	APPEARANCE OF WATER (Visual)	
1447	MO-050.0	13.45	3.56	291	4.92	7.03	-36.7	dear	dear	
1462	19-10025		3.74	299	1.11	7.01	-38.2	diar	dear	
1457	0.50	13.45	3.81	334	0.38	6.97	-45.6	clear	clear	
1002	0.15	13.45	383	369	0.29	10.94	-42.5	dear	dear	
			3.85	370	0.31	6.92	-28.2	diar	dear	
1507	1.00	13.44		210	· · · · · · · · · · · · · · · · · · ·	1			dar	
1512	1.25	13.44	3.84	1987	034	6.90	-12.8	dear	7	
1517	1.50	13.45	3.88	391	0.38	691	-7.9	clear	dear	
1572	1.75	13.44	3.81	39D	0.30	6.90	-10.2	elian	acar	
And the Control of Con	~									
						A CONTRACTOR OF THE PARTY OF TH				
		ک ۱۱۱۰ ح	maline	2				:		
		Thou								
	and the same of th			A STATE OF THE PROPERTY OF THE						
(1) STABILIZAT	ION is achieved wh	en three (3) conse	ecutive readings of	pH, conductivity	, and DO collected					
,	• ±0.1 standard un • ±3% for tempera • ±3% for conduct	its for pH ature iivity		• ±10% for DO	-	ree DO readings	< 0.50 mg/L car	n be considered stal	ole.	
22-2		2			N or UNTIL 3 WE				5gailm)	
TOTAL VOLU	ic: 27	(GAL)	)		(desired range i	4	min): [10			
SAMPLE TIME		ttles collected)		QC SAMPLE	S COLLECTED	: 110nz				
GRO (3 vials, HO	in number of bo	tties conected)	VOCs (3 vials.	HCL) - Đ <del>SM Sh</del>	on-Site-Only	$\sim$				
BTEX (3 vials, F					<u> </u>					
	DRO ([2] 250ml ambers, HCL)									
PAHs ([2] 1-L at	mbers) - SW Only					Other:				
MMENTS:	sulfur oc	tor								
Turbidity (NTU			Anna Anna Anna Anna Anna Anna Anna Anna							
Sampler Signat	ure Ay	1 WX	<u> </u>	<del></del>	QC Check Sig	nature . Hu	y 0	<del>\</del>		
	/	1				(		)		

				CLIENT: ADEC						
			site: M	WIZM						
	SAMPLER(S) NA	ME. A.	SI MORALLY	A. (O	X			DATE: 3/	29/17	
-  -			MUIZA	•			·	MONITORIN		
ĺ.	-			1-005-	0700			SHEET	of \	
ŀ		1110045	>0							alle sand
Г	Weather: 0V	A					1 in = 0.083 ft; 2 in =	= 0.167  ft;  3  in  = 0.2	0.125	(1771)
ŀ	PRODUCT PRE	SENT: //O				DIAMETER OF			0.0625	(FT
ı	PURGE AND SA					RADIUS OF WI				(FT)
	WATER LEVEL	MEASURING	DEVICE: Oil/W	ater Interface P	robe				NG POINT (D): 2	
-	TYPE OF PUME	: Peristaltic				DEPTH TO GW				(FT
	WELL INTEGR					LENGTH OF W			16.8°	
	REQUIRED RE	PAIRS: MCC	ds longer	100115		VOLUME OF W	ATER COLUM	N (V): (3.14xRx	RxL) 0.21	(CUBIC FT
	PUMP INTAKE	DEPTH: 😞	17.4			WELL VOLUM		(GAL)	X3= 4, 05 Max Purge	(GAL Volume
					**	Note: Groundwater volu	mes above were calculat		for approximate purge volu	mes; rounded values are
	TIME	VOLUME (GAL)	WATER LEVEL (ft BTOC)	TEMP (deg C)	Conductivity (µS/cm)	DO (mg/L)	рН	ORP (mV)	TURBIDITY (Visual: High, Med, Low, Clear)	APPEARANCE OF WATER (Visual)
	16:22	0.04	12.51	3.56	35a	1.32	6.84	-82.5	Clear	Clear
	16:07	0.26	12.52	3.64	386	0.48	6.85	-98.1	Clear	Clear
	16:32	0.46	12.52	3.66	395	0.40	6.87	-98.6	Clear	Clear
	7 4			3.71	399	0.35	687v	-914	Clear	Clear
	16:37	0.66	12.52		4000		6.882	-81.5	Char	Cleen
	110:40	0.86	12.53	3.30		<del>                                     </del>	6.88	-70.6	Clean	0
1	16:46	1.06	12.53	368	401	0.17	Ø: 33	10.00	Cucio	Wear
						· · · · ·	-\\000			
					100	Sta	2111			
				- " T	ex					
			(	Parm						
	in 3-5 minute inter		nits for pH ature ctivity		• ±10 mV for O • ±10% for DO	RP or ±10% if be	etween -100 mV aree DO readings	< 0.50 mg/L can	be considered stab	le.
	TOTAL VOLU	ME PURGED:	1. 2 (GAL)		FLOW RATE	(desired range i			55	
	SAMPLE TIME	17.71			QC SAMPLES	S COLLECTED	: Non	<u>e</u>		
	ANALYSIS (fill		ottles collected)							
	GRO (3 vials, HO	CL)		VOCs (3 vials,	HCL) <del>- DSM-Sh</del> T	op Site Only—				
	BTEX (3 vials, F		>-				<u> </u>	<del> </del>		
6	DRO ([2] 250ml	7					Other:			
,	PAHs ([2] 1-L ar		r-like ode		<u> </u>		Other:			
		- CI VICE	TIME OUT	,· .						
	TD. ALIAN AND T	D.								
	Turbidity (NTU	); <i></i>				<u></u>		J	$\bigcirc$	· · · · · · · · · · · · · · · · · · ·
	Sampler Signat	ure A	UN Q	1/2		QC Check Sig	nature –	THIS		

SVE/SSD System OM&M Data Sheets



## Wendell Ave SVE/SSD System OM&M Data Sheet

										Wendell Ave - SVE/SSD OM8	&M Data Sheet						
Date:	3/30/17		Time:	7:40			Ambient <sup>1</sup>	Γemp (⁰F):		13	Technician:	Cox/Surratt	Cox/Surratt Field Instrument Used/Last Calibrated:				
			Depress		n Welle				T T	SSD System			Indoor Voney Moni	taring Dainta			
Line	Vacuum (i	nMC)	Flow (s		Valve %	Hex	% CO2	%O2	S	SD System Mechanical Param	neters	Point ID	Vacuum (inWC)	Vacuum (inWC) Hex (ppm)		% (	12
Line	vacuum (i	,	Flow (s		Open	(ppm)	% CO2	%U2					, ,	nex (ppm)	% CO2	70 C	)2
DW-1		<54		~10					Dilution Valve	e % open	Closed	SS-4	> 0.02				
DW-2		<54		~10					Knockout dru	ım level	Empty	SS-5	> 0.02				
DW-3		<54		~10					Manifold Vac	uum (inWC)	Max < 54 inWC	SS-8	> 0.02				
DW-4		<54		~10					Blower Vacu	um (inWC)	Δ < 10 inWC						
DW-5		<54		~10					Exhaust Tem	p Digital (°F)	< 215 ° F						
DW-6		<54		~10					Exhaust Tem	np Gauge (°F)	< 215 ° F						
Spare									Exhaust Flow	v (cfm)	~60						
Spare									Filters Check								
			Evtro	otion M	/alla				T	SVE System			Outdoor Vapor Mon	itering Deinte			
Line	Extraction Wells			%O2	S	SVE System Mechanical Parameters		Point ID	Vacuum (inWC)	Hex (ppm)	%CO2	%C	12				
SVE-1	-	<81	-	~15	-	-	-	-	Dilution Valve	e % open 0	Closed	SG-2 @ 4' bgs	> 0.1				
SVE-2	9	<81	16	~15	75	0	0.6	20.3	Knockout dru	ım level Empty	Empty	SG-2 @ 8' bgs	> 0.1				%
SVE-3	9	<81	19	~15	75	0	1.7	17.4	Manifold Vac	euum (inWC) 31	Max < 81 inWC	SG-3 @ 4' bgs	> 0.1				v 20.9
SVE-4	12	<81	17	~15	75	0	2.3	16.7	Blower Vacu	um (inWC) 34	Δ < 10 inWC	SG-3 @ 8' bgs	> 0.1				pelor
SVE-5	15	<81	18	~15	75	0	2.7	16.4	Exhaust Tem	np Digital (°F) 105	< 275 ° F	SG-7 @ 5' bgs	> 0.1				At least one reading below 20.9%
SVE-6	14	<81	16	~15	100	5	0.2	20.2	Exhaust Tem	np Gauge (°F) 120	< 275 ° F	SG-7 @ 9' bgs	> 0.1				ne re
Spare									Exhaust Flow	v (cfm) 105	~75	SG-8 @ 5' bgs	> 0.1				sast o
TOTAL FLOW			86						Filters Check	xed/Cleaned? no		SG-22 @ 8' bgs	> 0.1				At h
Field Notes:												SG-24 @ 8' bgs	> 0.1				
										Additional Mechanical and SI	hared Elements			•		•	
						SVE	System	Exha	aust Stack/Heat	Trace		Laboratory	Sample				
Motor Speed (Hz)					65	Exhaust Stack Drained?		Yes	Effluent Sample ID 17		VAS-001-ES 17		17-WAS-001-SG				
					378.98	Exhaust Stack (Hex (ppm), %C	)2, %CO2)	0.0, 18.3%, 1.5%	Summa Canister ID	3825		1L1623					
					295.7	Exhaust Stack Colortec (ppm)	. ,	NA	Time/Date	3/30/2017 13:51		3/30/2017 13:05					
	IDEC Hourmeter Reading/Date/Time 26345.03 Heat Trace On? Yes Initial Vacuum ("Hg) 30					28											
													` 3/				

LEL Monitor Reading (%LEL)

GVEA Meter Reading (kW-hr)

0

188041

Final Vacuum ("Hg)

SVE Exhaust Stack

SVE-4

#### Field Notes:

Percent Operability

SVE System was started at 19:30 on 3/29/2017 after approximately 180 day shutdown period.

33.95

SSD System remains shut down.

Previous Hobbs Hourmeter Reading/Date/Time

Total Hours Since Last Event IDEC/Hobbs

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 adjustement or maintenance is required NR = not recorded

4257.6

38.1

1%

##/## = "/" 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



## Wendell Ave SVE/SSD System OM&M Data Sheet

								,	Wendell Ave - SV	E/SSD OM8	&M Data Sheet							
Date:	5/9/17	Time:	9:50			Ambient 1	remp (⁰F):		40		Technician:	Cox/Powers	Field Instru	nent Used/L	ast Calibrated	d:	RKI 5/9/17	
		_						•	SS	SD System								
	., ,,,,,,		ssurizatio	Valve %	Hex	l		ss	D System Mechar	nical Param	eters			Indoor Vapor Monitoring Points				
Line	Vacuum (inWC)	Flow	v (scfm)	Open	(ppm)	% CO2	%O2		.,			Point ID			Hex (ppm)	% CO2	% (	)2
DW-1	<54		~10					Dilution Valve	% open		Closed	SS-4	0.024	> 0.02	0	0.02	20	.9
DW-2	<54		~10					Knockout drun	n level		Empty	SS-5	0.003	> 0.02	0	0.0	20	.9
DW-3	<54		~10					Manifold Vacu	ium (inWC)		Max < 54 inWC	SS-8	NR	> 0.02	NR	NR	NI	₹
DW-4	<54		~10					Blower Vacuu	m (inWC)		Δ < 10 inWC	SS-9	0.000	> 0.02	0	0.0	20	.9
DW-5	<54		~10					Exhaust Temp	Digital (°F)		< 215 ° F	SS-13	0.000	> 0.02	0	0.0	20	.9
DW-6	<54		~10					Exhaust Temp	Gauge (°F)		< 215 ° F							
Spare								Exhaust Flow	(cfm)		~60							
Spare								Filters Checke	ed/Cleaned?									
		_						•	SI	/E System								
Extraction Wells  Valve % Hex (2000 2000)						sv	SVE System Mechanical Parameters				Outdoor Vapor Mon		Ī		%CO2 %O2			
Line	Vacuum (inWC)	Flow	v (scfm)	Open	(ppm)	% CO2	%O2					Point ID	Vacuun	(inWC)	Hex (ppm)	%CO2	%C	2
SVE-1	_ <81	-	~15	-	-	-	-	Dilution Valve	% open	0	Closed	SG-2 @ 4' bgs	0.577	> 0.1	0	0.06	20.0	]
SVE-2	10 <81	16	~15	75	20	0.42	20.9	Knockout drun	n level	Empty	Empty	SG-2 @ 8' bgs	0.770	> 0.1	0	0.38	18.7	%6
SVE-3	10 <81	20	~15	75	0	0.40	20.9	Manifold Vacu	ium (inWC)	32	Max < 81 inWC	SG-3 @ 4' bgs	1.62	> 0.1	0	0.00	20.6	ow 20
SVE-4	16 <81	13	~15	75	5	0.76	20.9	Blower Vacuu	m (inWC)	36	Δ < 10 inWC	SG-3 @ 8' bgs	1.69	> 0.1	0	1.38	18.9	g belc
SVE-5	17 <81	18	~15	75	0	0.92	20.7	Exhaust Temp	Digital (°F)	110.6	< 275 ° F	SG-7 @ 5' bgs	NR	> 0.1	NR	NR	NR	adin
SVE-6	16 <81	14	~15	100	35	0.0	20.9	Exhaust Temp	Gauge (°F)	126	< 275 ° F	SG-7 @ 9' bgs	NR	> 0.1	NR	NR	NR	At least one reading below 20.9%
Spare								Exhaust Flow	(cfm)	100	~75	SG-8 @ 5' bgs	2.73	> 0.1	0	0.42	20.3	east
TOTAL FLOW		81						Filters Checke	ed/Cleaned?	no		SG-22 @ 8' bgs	NR	> 0.1	NR	NR	NR	Atı
Field Notes:												SG-24 @ 8' bgs	0.797	> 0.1	10	0.02	20.9	
								Α	Additional Mechar	nical and Sh	nared Elements		1					
	Parar	neter	Cont	rol Room	S	SD	SVF	System		Exha	aust Stack/Heat	Trace			Laboratory	/ Sample		
Motor Speed (H								- t	Exhaust Stack Drai	ined?		Yes	Effluent Sam	nle ID				
, ,	er Reading/Time								Exhaust Stack (He		)2 %CO2)	20, 20.9%, 0.48%	Summa Can					
Hobbs Hourmeter Reading/Time 5258.5					·	Exhaust Stack Cold	W 1 //	22, 70002)	NA	Time/Date	0.0.1.0							
Previous IDEC Hourmeter Reading/Date/Time 26378.98						Heat Trace On?	- ···· (FF····)		Yes	Initial Vacuu	n ("Ha)							
Previous Hobbs Hourmeter Reading/Date/Time 4295.7						EL Monitor Readi	ng (%LEL)		0	Final Vacuur								
Total Hours Since Last Event IDEC/Hobbs 0 962.8						GVEA Meter Read	, ,		192938		. 0,							
	Percent Operability #VALUE!					00%		J \ "/					Ī		ļ.	J		
Percent Operability #VALUE																		

#### Field Notes:

SSD System remains shut down.

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 adjustement or maintenance is required

NR = not recorded

##/## = "/" 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

## Wendell Ave SVE/SSD System OM&M Data Sheet

										Wendell Ave -	SVE/SSD OM	&M Data Sheet							
Date:	5/10/17		Time:	11:35			Ambient	Γemp (⁰F):	1	55		Technician:	Cox/Powers	Field Instru	ment Used/l	Last Calibrated	i:	RKI 5/9/17	
			Depress	urizatio	n Welle				_		SSD System			Indoor	Vanor Mon	itoring Points			
Line	Vacuum	(in\\(C)	Flow (s		Valve %	Hex	% CO2	%O2	s	SD System Med	:hanical Parar	neters	Point ID		n (inWC)		ex (ppm) % CO2		)2
	vacuum	,	1 10W (3	,	Open	(ppm)	78 CO2	7802								"" /			
DW-1		<54		~10					Dilution Valv	ve % open		Closed	SS-4	0.036	> 0.02	0	0.04	20.	
DW-2		<54		~10					Knockout dr	um level		Empty	SS-5	0.003	> 0.02	0	0.02	20.	9
DW-3		<54		~10					Manifold Vac	cuum (inWC)		Max < 54 inWC Δ < 10 inWC	SS-8	NR	> 0.02	NR	NR	NF	<u> </u>
DW-4	-	<54		~10					Blower Vacu	ıum (inWC)			SS-9	0.003	> 0.02	0	0.04	20.	9
DW-5		<54		~10					Exhaust Ten	np Digital (°F)		< 215 ° F	SS-13	0.000	> 0.02	0	0.02	20.	9
DW-6		<54		~10					Exhaust Ten	np Gauge (°F)		< 215 ° F							
Spare									Exhaust Flov	w (cfm)		~60							
Spare									Filters Check	ked/Cleaned?									
SVE System  Extraction Wells Outdoor Vapor Monitoring Points																			
Line	Vacuum	(inWC)	Flow (s		Valve % Open	Hex (ppm)	% CO2	%O2	s	VE System Med	hanical Paran	neters	Point ID		n (inWC)	Hex (ppm)	%CO2	%C	12
SVE-1	-	<81	-	~15	-	(ppiii) -	-	-	Dilution Valv	re % open	0	Closed	SG-2 @ 4' bgs	0.574	> 0.1	0	0.06	20.5	
SVE-2	_	<81	0	~15	0	-	-	-	Knockout dru	'	Empty	Empty	SG-2 @ 8' bgs	0.756	> 0.1	0	0.40	20.5	%
SVE-3	23	<81	12	~15	75	0	0.38	20.9	1	cuum (inWC)	35	Max < 81 inWC	SG-3 @ 4' bgs	1.85	> 0.1	0	0.12	20.9	least one reading below 20.9%
SVE-4	19	<81	15	~15	75	0	0.78	20.7	Blower Vacu	\ /	39	Δ < 10 inWC	SG-3 @ 8' bgs	1.93	> 0.1	0	1.26	19.7	belov
SVE-5	21	<81	18	~15	75	0	0.98	20.5		np Digital (°F)	108.6	< 275 ° F	SG-7 @ 5' bgs	NR	> 0.1	NR	NR	NR	ading
SVE-6	18	<81	15	~15	100	20	0.20	20.9		np Gauge (°F)	124	< 275 ° F	SG-7 @ 9' bgs	NR	> 0.1	NR	NR	NR	ne re
Spare									Exhaust Flov		60	~75	SG-8 @ 5' bgs	3.20	> 0.1	30	0.46	20.7	asto
TOTAL FLOW			60						Filters Check	ked/Cleaned?	no		SG-22 @ 8' bgs	NR	> 0.1	NR	NR	NR	At le
Field Notes:					•			•					SG-24 @ 8' bgs	0.929	> 0.1	0	0.02	20.9	
										Additional Med	hanical and S	hared Elements							
		Parame	ter	Cont	rol Room	s	SD	SVE	System	_	Exh	aust Stack/Heat	Trace			Laboratory	Sample		
Motor Speed (H	Hz)							-	65	Exhaust Stack	Drained?		Yes	Effluent Sam	ple ID	17-WAS	-002-ES	17-WAS-	004-SS
IDEC Hourmet		/Time						No	Reading	Exhaust Stack		O2. %CO2)	0, 20.9%, 0.34%	Summa Can		6L0		00000	
Hobbs Hourme									283.2	Exhaust Stack	V VI //		NA	Time/Date		5/10/20		5/10/201	
Previous IDEC Hourmeter Reading/Date/Time  No Reading  No Reading					Heat Trace On	W 1 /		No	Initial Vacuu	m ("Ha)	2		30						
	evious IDEC Flourmeter Reading/Date/Time No Reading					LEL Monitor Re			0	Final Vacuum ("Hg)				12.5					
Total Hours Since Last Event IDEC/Hobbs 0 24.7			GVEA Meter R	,	ı	193063		. 0,	SVE Exha	aust Stack	SS								
Percent Operability #VALUE! 96%					<u> </u>			_				,							
Field Notes:	•												192938						
	SSD Syst	em rema	ns shut do	wn.									125						
1	COD Cyst	5.71 TOTAL	orial do										120						

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 adjustement or maintenance is required NR = not recorded

##/## = "/" 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

Shut off flow to SVE-2 to concentrate flow on primary source of contamination.

# **ATTACHMENT 5**

Photo Log





PHOTOGRAPH 1: LOCATING AND CLEARING MW-9.



PHOTOGRAPH 2: COLLECTING GROUNDWATER SAMPLE AT MW-12M.



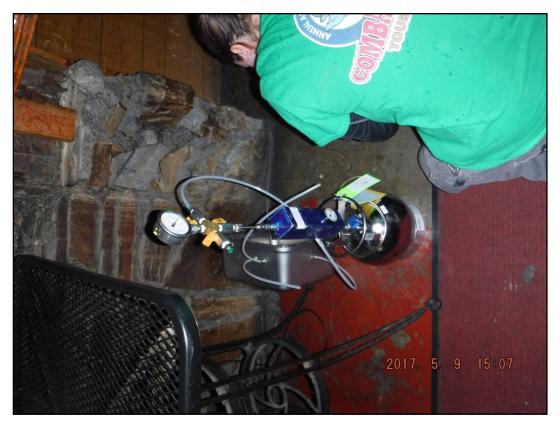
PHOTOGRAPH 3: CONTROL PANEL WITH SVE SYSTEM OPERATING.



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



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



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



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



PHOTOGRAPH 8: COLLECTING FIELD MEASUREMENTS AT SG-8 OUTSIDE 314 WENDELL AVENUE (ES LAUNDROMAT).



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

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# ATTACHMENT 6

Groundwater Mann-Kendall Trend Analysis



## Wendell Avenue Mann-Kendall Test for Trend Analysis

Monitoring Well No.
Contaminant

MW-6S

PCE, TCE, cis-1,2-DCE, trans-1,2-DCE

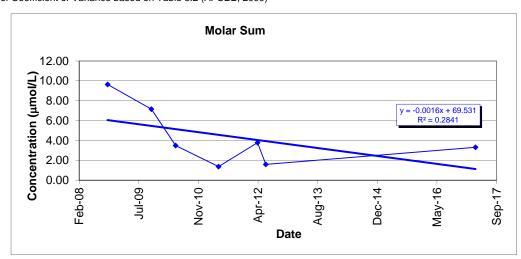
Monitoring date:	18-Oct-08	20-Oct-09	11-May-10	6-May-11	28-Mar-12	5-Jun-12	29-Mar-17			
-	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10
Molar Sum (µmol/L)	9.64	7.15	3.49	1.37	3.78	1.59	3.31			
Row 1: Compare to Event 1		-1	-1	-1	-1	-1	-1			
Row 2: Compare to Event 2			-1	-1	-1	-1	-1			
Row 3: Compare to Event 3				-1	1	-1	-1			
Row 4: Compare to Event 4			-		1	1	1			
Row 5: Compare to Event 5					_	-1	-1			
Row 6: Compare to Event 6							1			
Row 7: Compare to Event 7										
Row 8: Compare to Event 8							<u>-</u>			
Row 9: Compare to Event 9										

Mann-Kendall Statistic (S) = Total Confidence Level Coefficient of Variance (CV)

#### Notes:

- A minimum of four (4) independent sampling events are required for this test to be valid.
- Non-detects are listed as 1/2 of the Method Detection Limit (MDL)
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is not a statistical concentration trend.
- A negative S value with confidence < 90% and CV <1 is a stable plume.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R2 values greater than 0.8 indicate a correlation, suggesting that there is a trend.

Confidence Level Determination Based on Table A18 (Gilbert 1987)



-11
> 90%
0.70

Trend Analysis											
Statistical Method	Result										
Linear Regression	No Trend										
Mann-Kendall	Decreasing										

## Wendell Avenue

## Mann-Kendall Test for Trend Analysis

Monitoring Well No.
Contaminant

MW-8S

PCE, TCE, cis-1,2-DCE, trans-1,2-DCE

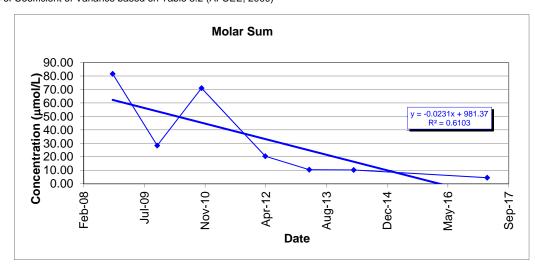
Monitoring date:	18-Oct-08	20-Oct-09	20-Oct-10	28-Mar-12	25-Mar-13	26-Mar-14	29-Mar-17			
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10
Molar Sum (μmol/L)	81.60	28.39	71.03	20.49	10.48	10.26	4.53			
Row 1: Compare to Event 1		-1	-1	-1	-1	-1	-1			
Row 2: Compare to Event 2			1	-1	-1	-1	-1			
Row 3: Compare to Event 3				-1	-1	-1	-1			
Row 4: Compare to Event 4					-1	-1	-1			
Row 5: Compare to Event 5						-1	-1			
Row 6: Compare to Event 6							-1			
Row 7: Compare to Event 7							<u>_</u>			
Row 8: Compare to Event 8										
Row 9: Compare to Event 9										

Mann-Kendall Statistic (S) = Total Confidence Level Coefficient of Variance (CV)

#### Notes

- A minimum of four (4) independent sampling events are required for this test to be valid.
- Non-detects are listed as 1/2 of the Method Detection Limit (MDL)
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is not a statistical concentration trend.
- A negative S value with confidence < 90% and CV <1 is a stable plume.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R2 values greater than 0.8 indicate a correlation, suggesting that there is a trend.

Confidence Level Determination Based on Table A18 (Gilbert 1987)



-6
-3
-4
-3
-2
-1
0
0
0

Н	10
L	-19
	> 90%
Г	0.96

Trend Analysis											
Statistical Method Result											
Linear Regression	Possibly Decreasing										
Mann-Kendall	Decreasing										

### Wendell Avenue Mann-Kendall Test for Trend Analysis

MW-9M Monitoring Well No. Contaminant PCE, TCE, cis-1,2-DCE, trans-1,2-DCE

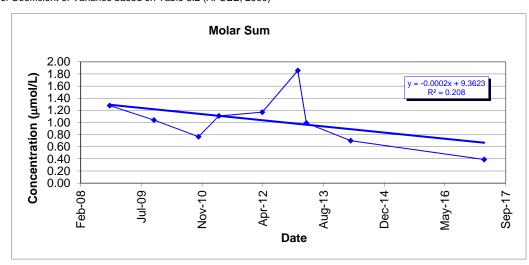
Monitoring date:	18-Oct-08	18-Oct-09	20-Oct-10	6-Apr-11	28-Mar-12	14-Jan-13	26-Mar-13	26-Mar-14	29-Mar-17	
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10
Molar Sum (μmol/L)	1.28	1.04	0.77	1.11	1.17	1.86	0.99	0.70	0.39	
	_									
Row 1: Compare to Event 1		-1	-1	-1	-1	1	-1	-1	-1	
Row 2: Compare to Event 2	•		-1	1	1	1	-1	-1	-1	
Row 3: Compare to Event 3		•		1	1	1	1	-1	-1	
Row 4: Compare to Event 4					1	1	-1	-1	-1	
Row 5: Compare to Event 5						1	-1	-1	-1	
Row 6: Compare to Event 6							-1	-1	-1	
Row 7: Compare to Event 7								-1	-1	
Row 8: Compare to Event 8									-1	
Row 9: Compare to Event 9									_	

Mann-Kendall Statistic (S) = Total **Confidence Level** Coefficient of Variance (CV)

#### Notes:

- A minimum of four (4) independent sampling events are required for this test to be valid.
- Non-detects are listed as 1/2 of the Method Detection Limit (MDL)
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is not a statistical concentration trend.</li>
   A negative S value with confidence < 90% and CV <1 is a stable plume.</li>
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R2 values greater than 0.8 indicate a correlation, suggesting that there is a trend.

Confidence Level Determination Based on Table A18 (Gilbert 1987)



-6
-1
2
-1
-2
-3
-2
-1
0

-14
> 90%
0.40

Trend Analysis							
Statistical Method	Result						
Linear Regression	No Trend						
Mann-Kendall	Possibly Decreasing						

## Wendell Avenue Mann-Kendall Test for Trend Analysis

Monitoring Well No.
Contaminant

MW-12M

PCE, TCE, cis-1,2-DCE, trans-1,2-DCE

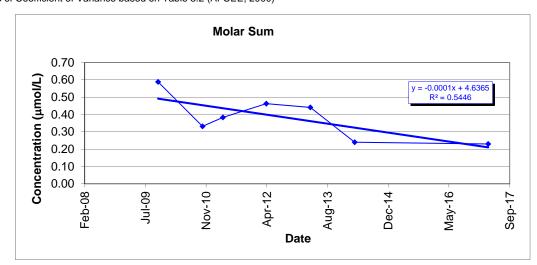
Monitoring date:	19-Oct-09	20-Oct-10	6-Apr-11	28-Mar-12	25-Mar-13	26-Mar-14	29-Mar-17			
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10
Molar Sum (μmol/L)	0.59	0.33	0.38	0.46	0.44	0.24	0.23			
										•
Row 1: Compare to Event 1		-1	-1	-1	-1	-1	-1			
Row 2: Compare to Event 2	•		1	1	1	-1	-1			
Row 3: Compare to Event 3		_		1	1	-1	-1			
Row 4: Compare to Event 4					-1	-1	-1			
Row 5: Compare to Event 5						-1	-1			
Row 6: Compare to Event 6							-1			
Row 7: Compare to Event 7										
Row 8: Compare to Event 8										
Row 9: Compare to Event 9										

Mann-Kendall Statistic (S) = Total Confidence Level Coefficient of Variance (CV)

#### Notes:

- A minimum of four (4) independent sampling events are required for this test to be valid.
- Non-detects are listed as 1/2 of the Method Detection Limit (MDL)
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is not a statistical concentration trend.
- A negative S value with confidence < 90% and CV <1 is a stable plume.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R2 values greater than 0.8 indicate a correlation, suggesting that there is a trend.

Confidence Level Determination Based on Table A18 (Gilbert 1987)



-6
1
0
-3
-2
-1
0
0
0

I	-11
I	> 95%
ľ	0.33

Trend Analysis							
Statistical Method	Result						
Linear Regression	Possibly Decreasing						
Mann-Kendall	Decreasing						

### Wendell Avenue Mann-Kendall Test for Trend Analysis

Monitoring Well No.

Contaminant

MW-4S

PCE, TCE, cis-1,2-DCE, trans-1,2-DCE

Monitoring date:	18-Oct-08	19-Oct-09	19-Oct-10	6-Apr-11	30-Mar-17					
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10
Molar Sum ( $\mu$ mol/L)	0.78	0.69	0.53	0.57	0.38					
Row 1: Compare to Event 1		-1	-1	-1	-1					
Row 2: Compare to Event 2	•		-1	-1	-1					
Row 3: Compare to Event 3				1	-1					
Row 4: Compare to Event 4					-1					
Row 5: Compare to Event 5					_					
Row 6: Compare to Event 6										
Row 7: Compare to Event 7										
Row 8: Compare to Event 8										
Row 9: Compare to Event 9										

Mann-Kendall Statistic (S) = Total Confidence Level Coefficient of Variance (CV)

#### -8 > 95% 0.26

#### Notes

- A minimum of four (4) independent sampling events are required for this test to be valid.
- Non-detects are listed as 1/2 of the Method Detection Limit (MDL)
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is not a statistical concentration trend.
- A negative S value with confidence < 90% and CV <1 is a stable plume.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R2 values greater than 0.8 indicate a correlation, suggesting that there is a trend.

Confidence Level Determination Based on Table A18 (Gilbert 1987)



Trend Analysis							
Statistical Method	Result						
Linear Regression	Decreasing						
Mann-Kendall	Decreasing						

## Wendell Avenue Mann-Kendall Test for Trend Analysis

Monitoring Well No.

Contaminant

MW-4M

PCE, TCE, cis-1,2-DCE, trans-1,2-DCE

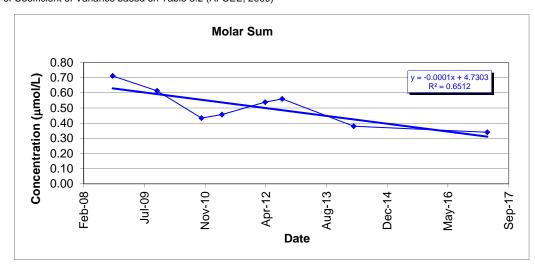
Monitoring date:	18-Oct-08	19-Oct-09	19-Oct-10	6-Apr-11	27-Mar-12	14-Aug-12	26-Mar-14	30-Mar-17		
	Event 1	Event 2	Event 3	Event 4	Event 5	Event 6	Event 7	Event 8	Event 9	Event 10
Molar Sum ( $\mu$ mol/L)	0.71	0.61	0.43	0.46	0.54	0.56	0.38	0.34		
Row 1: Compare to Event 1		-1	-1	-1	-1	-1	-1	-1		
Row 2: Compare to Event 2	•		-1	-1	-1	-1	-1	-1		
Row 3: Compare to Event 3		•		1	1	1	-1	-1		
Row 4: Compare to Event 4					1	1	-1	-1		
Row 5: Compare to Event 5						1	-1	-1		
Row 6: Compare to Event 6							-1	-1		
Row 7: Compare to Event 7								-1		
Row 8: Compare to Event 8										
Row 9: Compare to Event 9										

Mann-Kendall Statistic (S) = Total Confidence Level Coefficient of Variance (CV)

#### Notes

- A minimum of four (4) independent sampling events are required for this test to be valid.
- Non-detects are listed as 1/2 of the Method Detection Limit (MDL)
- A negative S value with confidence > 90% indicates a decreasing concentration trend.
- A positive S value with confidence > 90% indicates an increasing concentration trend.
- Any S value with confidence < 90% indicates that there is not a statistical concentration trend.
- A negative S value with confidence < 90% and CV <1 is a stable plume.
- The closer to zero the CV is, the less variation in concentrations between sampling events.
- R2 values between 0.5 and 0.8 indicate possible correlation, suggesting that there is possibly a trend.
- R2 values greater than 0.8 indicate a correlation, suggesting that there is a trend.

Confidence Level Determination Based on Table A18 (Gilbert 1987)



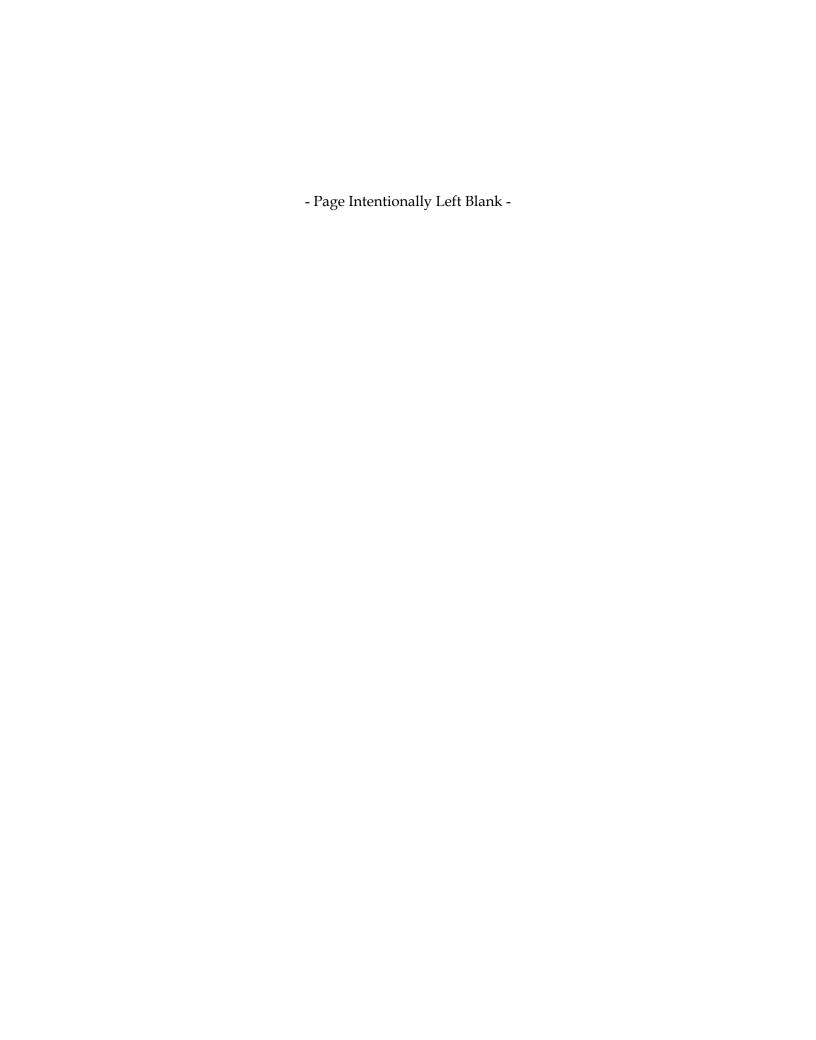
-7
-6
1
0
-1
-2
-1
0
0

-16
> 95%
0.25

Trend Analysis				
Statistical Method Result				
Linear Regression	Possibly Decreasing			
Mann-Kendall	Decreasing			

# ATTACHMENT 7

Laboratory Data Review Checklists



# **Laboratory Data Review Checklist**

Completed by:
Elsie King
Title:
Project Chemist
Date:
April 27, 2017
CS Report Name:
Wendell Avenue
Report Date:
April 07, 2017
Consultant Firm:
ERM Alaska, Inc.
Laboratory Name:
SGS
Laboratory Report Number:
1171377
ADEC File Number:
Hazard Identification Number:

1.	Labora	<u>atory</u>		
	a.	Did an ADE	EC CS appro	oved laboratory receive and <u>perform</u> all of the submitted sample analyses?  Comments:
	b.	-		asferred to another "network" laboratory or sub-contracted to an alternate oratory performing the analyses ADEC CS approved?  Comments:
	2	Samples were	not transfer	<u>red</u>
2.	Chain	of Custody (	COC)	
	a.	COC inform Yes	nation comp	leted, signed, and dated (including released/received by)?  Comments:
	b.	Correct anal	lyses reques	ted? Comments:
3.	Labora	atory Sample	Receipt Do	cumentation
			-	
	a.	Sample/coo	ler temperat  No	ure documented and within range at receipt (0° to 6° C)?  Comments:
		103		
	b.			ceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, lvents, etc.)?
		Yes	□ No	Comments:
	c.	Sample con	dition docur	mented – broken, leaking (Methanol), zero headspace (VOC vials)?  Comments:
	I .	Five (5) VOA ne analysis of		received with bubbles > 6 mm. There were additional vials provided for s.
	d.		reservation,	pancies, were they documented? For example, incorrect sample sample temperature outside of acceptable range, insufficient or missing
		Yes	□ No	Comments:

e.	Data quality	or asacrity a	Comments:
	Data is accept	able.	Comments.
	•		
ase	<u>Narrative</u>		
a.	Present and		
	<b>⊡</b> Yes	□ No	Comments:
_	D' '		
b.	. Discrepanci  Yes	es, errors or Q	QC failures identified by the lab?  Comments:
	MS/MSD %R GW	were low for	cis-1,2-dichloroethene and trichloroethene in sample 17-MW8SR-03-
c.	Were all con	rrective action	as documented?
	Yes	No	Comments:
	NA - correctiv	ve action was	not required
_		effect on data	quality/usability according to the case narrative?
d.	. What is the		quality/usability according to the case narrative?  Comments:  ethene and trichloroethene in sample 17-MW8SR-03-GW and the field
d.	. What is the	s-1,2-dichloro	Comments:
d.	. What is the	s-1,2-dichloro	Comments:  ethene and trichloroethene in sample 17-MW8SR-03-GW and the field
d.	. What is the Results for cise duplicate were bles Results	s-1,2-dichloro flagged JM a	Comments:  ethene and trichloroethene in sample 17-MW8SR-03-GW and the field
d.	Results for cise duplicate were bles Results  Correct analogous	s-1,2-dichloroe flagged JM a	Comments:  ethene and trichloroethene in sample 17-MW8SR-03-GW and the field as estimated, with a low bias due to matrix interference.
d.	Results for cise duplicate were bles Results  Correct analogous	s-1,2-dichloroe flagged JM a	Comments:  ethene and trichloroethene in sample 17-MW8SR-03-GW and the field as estimated, with a low bias due to matrix interference.  ed/reported as requested on COC?
d.	Results for cise duplicate were bles Results  Correct analogous	s-1,2-dichloroe flagged JM a lyses performe	Comments:  ethene and trichloroethene in sample 17-MW8SR-03-GW and the field is estimated, with a low bias due to matrix interference.  ed/reported as requested on COC?  Comments:
d.	Results for cise duplicate were bles Results Correct anal	s-1,2-dichloroe flagged JM a lyses performe	Comments:  ethene and trichloroethene in sample 17-MW8SR-03-GW and the field is estimated, with a low bias due to matrix interference.  ed/reported as requested on COC?  Comments:
d.  amp  a.  b.	Results for cisduplicate were bles Results Correct anale Yes All applicate	s-1,2-dichloroe flagged JM a lyses performe No le holding tim	Comments:  ethene and trichloroethene in sample 17-MW8SR-03-GW and the field as estimated, with a low bias due to matrix interference.  ed/reported as requested on COC?  Comments:  nes met?  Comments:
d.  amp  a.  b.	Results for cisduplicate were bles Results Correct anale Yes All applicate	s-1,2-dichloroe flagged JM a lyses performe No le holding tim	Comments:  ethene and trichloroethene in sample 17-MW8SR-03-GW and the field as estimated, with a low bias due to matrix interference.  ed/reported as requested on COC?  Comments:
d.  amp a.  b.	Results for cise duplicate were soles Results Correct analog Yes  All applicate Yes  All soils rep	s-1,2-dichloroe flagged JM a service flagged JM a s	Comments:  ethene and trichloroethene in sample 17-MW8SR-03-GW and the field as estimated, with a low bias due to matrix interference.  ed/reported as requested on COC?  Comments:  nes met?  Comments:
d.  amp a.  b.	Results for cisduplicate were oles Results Correct anale Yes All applicate Yes All soils rep	s-1,2-dichloroe flagged JM a lyses performe No le holding time No le holding time No le No	Comments:  ethene and trichloroethene in sample 17-MW8SR-03-GW and the field as estimated, with a low bias due to matrix interference.  ed/reported as requested on COC?  Comments:  nes met?  Comments:

OC Samj	ta is accept	able.	
•	nlos		
a. M	<u>pies</u>		
a. 1v	Iethod Bla	nk	
			reported per matrix, analysis and 20 samples?
	• Yes	□ No	Comments:
	ii. All n	nethod blank	results less than limit of quantitation (LOQ)?
	☑ Yes	□ No	Comments:
	iii. If ab	ove LOQ, wh	at samples are affected?  Comments:
NA	- Blank res	sults < LOQ.	
			mple(s) have data flags? If so, are the data flags clearly defined?
	C Yes	<b>☑</b> No	Comments:
NA	- Blank res	sults < LOQ.	
	v. Data	quality or usa	ability affected?  Comments:
Dat	ta is accept	able.	
b. L	i. Orga	nnics – One Lo	le/Duplicate (LCS/LCSD) CS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSE nethods, LCS required per SW846) Comments:
	ii. Meta samp	•	– one LCS and one sample duplicate reported per matrix, analysis an
	☐ Yes	<b>©</b> No	Comments:

ii	And	project specifi	cent recoveries (%R) reported and within method or laboratory limits? ed DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK103 60%-120%; all other analyses see the laboratory QC pages)
0	Yes	□ No	Comments:
	labo LCS othe	ratory limits? A ALCSD, MS/M r analyses see t	tive percent differences (RPD) reported and less than method or And project specified DQOs, if applicable. RPD reported from SD, and or sample/sample duplicate. (AK Petroleum methods 20%; all the laboratory QC pages)
	Yes	□ No	Comments:
v	. If %	R or RPD is ou	atside of acceptable limits, what samples are affected?  Comments:
NA - L	CS %I	R and RPD wer	e within acceptance limits.
	i. Do t ] Yes	he affected san	nple(s) have data flags? If so, are the data flags clearly defined?  Comments:
NA - L	CS %I	R and RPD wer	e within acceptance limits.
V	ii. Data	ı quality or usal	bility affected? Comments:
Data is	accept	table.	
i.	Are	_	y veries reported for organic analyses – field, QC and laboratory samples Comments:
ii	And	project specific	cent recoveries (%R) reported and within method or laboratory limits? ed DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other poratory report pages)
	Yes	□ No	Comments:
ii		he sample resus s clearly define	lts with failed surrogate recoveries have data flags? If so, are the data d?
	Yes	<b>☑</b> No	Comments:
NA - S	urroga	te %Rs were w	ithin control limits.

	Comments:
Data is acceptable.	
<ul> <li>d. Trip blank – Volatile analyses or <u>Soil</u></li> </ul>	nly (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and
i. One trip blank reported p	per matrix, analysis and cooler?
☑ Yes ☑ No	Comments:
	sport the trip blank and VOA samples clearly indicated on the COC? ining why must be entered below)  Comments:
Yes - One trip blank was listed on	the COC with one sample cooler.
iii. All results less than LOQ	)?
☑ Yes ☑ No	Comments:
iv. If above LOQ, what sam	nples are affected? Comments:
NA - Blanks results < LOQ.	
v. Data quality or usability	affected? Comments:
Data is acceptable.	
e. Field Duplicate i. One field duplicate subm	nitted per matrix, analysis and 10 project samples?
🖸 Yes 🔲 No	Comments:
17-MW8SR-003-GW and 17-MW	X-006-GW
ii. Submitted blind to lab?	
Yes No	Comments:

iv. Data quality or usability affected?

	(Recommended: 30% water, 50% soil)
	RPD (%) = Absolute value of: $(R_1-R_2)$
	${((R_1+R_2)/2)}$ x 100
	Where $R_1$ = Sample Concentration $R_2$ = Field Duplicate Concentration
	☑ Yes ☑ No Comments:
	iv. Data quality or usability affected?
	Comments:
Dat	ta is acceptable
	Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below.)
	☐ Yes ☐ No ☐ Not Applicable
	i. All results less than LOQ?
	☐ Yes ☐ No Comments:
NA	A - disposable equipment was used
	ii. If above LOQ, what samples are affected?
	Comments:
NA	A - disposable equipment was used
	iii. Data quality or usability affected?
	Comments:
NA	A - disposable equipment was used
Other Da	ata Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)
a. D	Defined and appropriate?

iii. Precision – All relative percent differences (RPD) less than specified DQOs?

# **Laboratory Data Review Checklist for Air Samples**

Completed by:	Elsie King				
Title:	Project Chemist		Date:	Apr 7, 2017	
CS Report Name:	Wendell Ave June 2017 Data Summary Report			Report Date:	Apr 7, 2017
Consultant Firm:	ERM Alaska,	Inc.			
Laboratory Name:	Eurofins Air	Γoxics, Inc.	Laboratory Report	Number: 1704008	A,B
ADEC File Numbe	r:		ADEC Haz ID:		
1. <u>Laboratory</u>					
a. Did a NI	ELAP certified lab	oratory receive an	d <u>perform</u> all of the su	ıbmitted sample ana	lyses?
• Yes	○ No	O NA (Plea	se explain.)	Comments	<b>:</b> :
laboratory,  O Yes	was the laboratory  O No	performing the a  • NA (Plea	etwork" laboratory or nalyses NELAP appro se explain.)	ved?  Comments	
2. Chain of Custo	dy (COC)				
a. COC info	ormation complete	ed, signed, and dat	ed (including released	/received by)?	
• Yes	○ No	O NA (Plea	se explain.)	Comments	:
b. Correct a	nalyses requested	?			
• Yes	○ No	ONA (Please	e explain)	Comments	:
3. <u>Laboratory San</u>	nple Receipt Doc	<u>umentation</u>			
-		-	cted in gas tight, opac hecked, recorded upor	•	
• Yes	○ No	○ NA (Pleas	•	Comments:	•

○ Yes	○ No	NA (Please explain)	Comments:
NA. Ther	e were no recei	ving discrepancies.	
c. Data qualit	y or usability af	fected? (Please explain.)	
○ Yes	<ul><li>No</li></ul>	ONA (Please explain)	Comments:
Data quali	•	v is not affected with respect to the repo	orted laboratory sample receipt
<u>Narrative</u>			
<ul><li>Present and</li><li>Yes</li></ul>	l understandabl	e?  ONA (Please explain)	Comments:
b. Discrepan	cies, errors or Q	C failures identified by the lab?	
○ Yes	○ No	NA (Please explain)	Comments:
NA. The	re were no disc	repancies, errors or QC failures.	
c. Were all o	corrective action	as documented?	
○ Yes	○ No	NA (Please explain)	Comments:
NA. The	re were no corr	rective actions.	
d. What is t	he effect on dat	a quality/usability according to the cas	e narrative?
			Comments:
Data qua	ality and usabil	ity is not affected with respect to the ca	ase narrative report.
ples Results			
a. Correct a	nalyses perform	ed/reported as requested on COC?	
○ Yes	<ul><li>No</li></ul>	○ NA (Please explain)	Comments:
O 105		G was transferred from Low Level and nds.	alysis to full scan TO-15 due to high
Sample	target compou		
Sample levels of		30 days of collection or within the time	required by the method?
Sample levels of			required by the method?  Comments:
Sample levels of b. Samples  • Yes	analyzed within	30 days of collection or within the time	Comments:
Sample levels of b. Samples  • Yes	analyzed within	30 days of collection or within the time  ONA (Please explain)	Comments:

level target species.

Data quality and usability is not affected with respect to the report  QC Samples  a. Method Blank  i. One method blank reported per analysis and 20 samples?  • Yes  • No  • NA (Please explain)	Comments:
<ul><li>a. Method Blank</li><li>i. One method blank reported per analysis and 20 samples?</li></ul>	Comments:
	Comments:
$\bigcirc$ Yes $\bigcirc$ No $\bigcirc$ NA (Please explain)	Comments:
O 105 O 100 O 101 (1 loade explain)	
ii. All method blank results less than PQL?	
	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
	Comments:
ii. Accuracy - All percent recoveries (%R) reported and within m specified DQOs, if applicable.	nethod or laboratory limits? And proje
● Yes ○ No ○ NA (Please explain)	Comments:
iii. Precision - All relative percent differences (RPD) reported and limits? And project specified DQOs, if applicable.	l less than method or laboratory
• Yes O No ONA (Please explain)	Comments:

d. Data quality or usability affected?

iv. If %R o	r RPD is outside	of acceptable limits, what samples a	re affected?
○ Yes	○ No	NA (Please explain)	Comments:
All %R	and RPD within	n acceptable limits.	
v. Do the a	ffected sample(s	s) have data flags? If so, are the data f	lags clearly defined?
○ Yes	○ No	NA (Please explain)	Comments:
All %R	and RPD within	n acceptable limits.	
vi. Data qu	ality or usability	affected? (Please explain.)	
			Comments:
Data qu	ality and usabil	ity is not affected with respect to the	e reported LCS/LCSD results.
Surrogates			
C	ogate recoveries	reported for field, QC and laboratory	samples?
• Yes	○ No	CNA (Please explain)	Comments:
• Yes	cified DQOs, if	○ NA (Please explain)	Comments:
iii. Do the s	ample results w	ith failed surrogate recoveries have da	ata flags? If so, are the data flags clear
○ Yes	○ No	NA (Please explain)	Comments:
NA. Al	l surrogates rec	overies were within limits.	
iv. Data qua	ality or usability	affected? (Please explain.)	Comments:
Data qı	ality and usabi	lity is not affected with respect to the	ne reported surrogate results.
Field Duplicat	e		
•		nitted per analysis and 10 type (soil g	as, indoor air etc.) samples?
○ Yes	<ul><li>No</li></ul>	ONA (Please explain)	Comments:
Field d	unlicates were r	not submitted in this sampling event	
	apheates were r	r &	
ii. Submitt	ed blind to lab?	1 8	
ii. Submitt		NA (Please explain)	. Comments:

RPD (%) = Absolute Value of:  $(R_1 - R_2)_x 100$ 

			$((R_{1+} R_2)/2)$	
Wh	here $R_1 = S$	Sample Con-	centration	
	$R_2 = F$	ield Duplic	ate Concentration	
	Yes	○ No	• NA (Please explain)	Comments:
I	Field dupli	cates were	not submitted in this sampling event.	
iv. D	ata quality	Comments:		
]	Field dupl	icates were	not submitted in this sampling event.	
e. Field Bla	nk (If not	used explain	why).	
○ Yes	$\bigcirc$ N	o (	NA (Please explain)	Comments:
NA. Fie	ld blank v	vas not requ	ired.	
i. A	ll results l	ess than PQI	_?	
	Yes	○ No	NA (Please explain)	Comments:
	NA. Field	blank was n	ot required.	
ii. I	f above PÇ	L, what san	nples are affected?	Comments:
N	A. Field b	olank was no	ot required.	
iii. D	ata quality	or usability	affected? (Please explain.)	
_				Comments:
[1	NA. Field	blank was r	not required.	
7. Other Data Fla	ıgs/Qualifi	ers		
a. Defined	and appro	priate?		
• Yes	$\bigcirc$ N	lo C	NA (Please explain)	Comments:
Define	d within tl	ne laborator	y case narrative.	

Reset Form

# **Laboratory Data Review Checklist for Air Samples**

Completed by:	Tim McDoug	all				
Title:	Project Manager			Date:	May 26, 2017	
CS Report Name:	Wendell Ave	June 2017 Data S	ummary Report	Report Date:	May 26, 2017	
Consultant Firm:	ERM Alaska,	Inc.				
Laboratory Name:	Eurofins Air	Γoxics, Inc.	Laboratory Report 1	Number: 1705292.	A,B,C	
ADEC File Number:			ADEC Haz ID:			
1. <u>Laboratory</u>						
·	AP certified lab	oratory receive an	d perform all of the sub	omitted sample ana	lyses?	
• Yes	○ No ○ NA (Please explain.)			Comments:		
			etwork" laboratory or s nalyses NELAP approv	ed?		
○ Yes	○ No	NA (Plea	se explain.)	Comments	:	
NA. Samp	oles were not to	ansferred or subc	contracted to another la	boratory.		
2. Chain of Custody	(COC)					
a. COC inform	nation complete	d, signed, and date	ed (including released/r	eceived by)?		
• Yes	○ No	O NA (Plea	se explain.)	Comments	:	
b. Correct ana	lyses requested	?				
• Yes	○ No	ONA (Please	e explain)	Comments	:	
3. <u>Laboratory Sampl</u>	_					
-		-	cted in gas tight, opaqu hecked, recorded upon			
• Yes	○ No	ONA (Pleas	e explain)	Comments:		

pre		sample temper	ancies, were they documented? For exacture outside of acceptable range, insu	ample, incorrect sample containers/ afficient or missing samples, canister not
	Yes	○ No	ONA (Please explain)	Comments:
	vacuum (1	l" Hg) and tha	difference (greater than 5.0" Hg) bet at reported on the Chain of Custody (ed that the valve was functioning pro	COC) for sample 17-WAS-001-IA (8.5"
c. I	Data quality	y or usability a	affected? (Please explain.)	
(	• Yes	○ No	ONA (Please explain)	Comments:
I .	Results for may be bia		WAS-001-IA were flagged 'JA' due to	o possible leak during transit. Results
4. <u>Case N</u>	<u>Varrative</u>			
a. P	resent and	understandab	le?	
(	• Yes	○ No	○ NA (Please explain)	Comments:
b.	Discrepand	cies, errors or	QC failures identified by the lab?	
	Yes	○ No	ONA (Please explain)	Comments:
	17-WAS-	-003-IA, and		oles 17-WAS-001-IA, 17-WAS-002-IA, at of commercial gasoline. Results were at gasoline linear calibration.
c.	Were all c	orrective actio	ns documented?	
	○ Yes	○ No	NA (Please explain)	Comments:
	NA. The	re were no con	rective actions required.	
d.	What is th	ne effect on da	ata quality/usability according to the	case narrative?
				Comments:
	Results f	or TPH-Gaso	line were flagged JN as estimated, w	ith uncertain identification as gasoline.
5. <u>Sample</u>	es Results			
a.	Correct an	alyses perforn	ned/reported as requested on COC?	
	○ Yes	<ul><li>No</li></ul>	○ NA (Please explain)	Comments:
			7-WAS-002-ES and 17-WAS-004-SS D-15 due to high levels of target com	
b	. Samples	analyzed withi	n 30 days of collection or within the ti	me required by the method?
	<ul><li>Yes</li></ul>	○ No	○ NA (Please explain)	Comments:

	ject?  Yes (	○ No	○NA (Please explain)	Comments:
E V	Dilution was p	erformed on s	samples 17-WAS-002-ES, 17-WAS-003-IA due to the presence of high	
d. <u>E</u>	Data quality or	usability affec	eted? reported with elevated RLs.	Comments:
		•	s not affected with respect to the repopriate ADEC VI target levels.	orted sample results. The reported
6. <u>QC San</u> a. M	n <u>ples</u> ethod Blank			
	i. One metho	d blank report	ed per analysis and 20 samples?	
	• Yes	○ No	○ NA (Please explain)	Comments:
	ii. All metho	d blank results	s less than PQL?	
	• Yes	○ No	○ NA (Please explain)	Comments:
	iii. If above	PQL, what sa	mples are affected?	Comments:
	NA. All n	nethod blank	results were below PQL.	
	iv. Do the af	fected sample(	s) have data flags and if so, are the da	nta flags clearly defined?
	○ Yes	○ No	NA (Please explain)	Comments:
	NA. All 1	method blank	results were below PQL.	
	v. Data quali	ty or usability	affected? (Please explain.)	Comments:
	Data qua	lity and usabi	lity is not affected with respect to the	e reported method blank results.
b. La	aboratory Con	trol Sample/Du	uplicate (LCS/LCSD)	
	i. One LCS/I	LCSD or one I	LCS and a sample/sample duplicate pa	air reported per analysis and 20 samples?
	• Yes	○ No	○ NA (Please explain)	Comments:
	•	<ul><li>All percent</li><li>QOs, if applica</li></ul>		method or laboratory limits? And project
	• Yes	○ No	ONA (Please explain)	Comments:

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

• Yes	○ No	ONA (Please explain)	Comments:
iv. If %R or	RPD is outside	e of acceptable limits, what samples ar	e affected?
○ Yes	○ No	• NA (Please explain)	Comments:
All %R a	nd RPD withi	n acceptable limits.	
v. Do the aff	ected sample(	s) have data flags? If so, are the data f	lags clearly defined?
○ Yes	○ No	NA (Please explain)	Comments:
All %R a	nd RPD withi	n acceptable limits.	
vi. Data qual	ity or usability	y affected? (Please explain.)	
1		1 /	Comments:
Data qua	lity and usahi	lity is not affected with respect to the	
Data qua	irty and asaor	inty is not affected with respect to the	reported Destriction.
rogates			
i. Are surrog	gate recoveries	s reported for field, QC and laboratory	samples?
i. Are surrog	gate recoveries	on Series reported for field, QC and laboratory on Series (Please explain)	samples?  Comments:
		•	-
• Yes ii. Accuracy	○ No	ONA (Please explain) recoveries (%R) reported and within i	Comments:
• Yes ii. Accuracy	○ No	ONA (Please explain) recoveries (%R) reported and within i	Comments:
Yes  ii. Accuracy project speci	- All percent	ONA (Please explain)  recoveries (%R) reported and within applicable.	Comments:  method or laboratory limits? And
ii. Accuracy project speci	O No  - All percent ified DQOs, if	ONA (Please explain)  recoveries (%R) reported and within applicable.	Comments:  method or laboratory limits? And  Comments:
ii. Accuracy project speci	O No  - All percent ified DQOs, if	ONA (Please explain)  recoveries (%R) reported and within applicable.  ONA (Please explain)	Comments:  method or laboratory limits? And  Comments:
ii. Accuracy project specification. Do the saddefined?	O No  - All percent ified DQOs, if O No  mple results w	ONA (Please explain)  recoveries (%R) reported and within applicable.  ONA (Please explain)	Comments:  method or laboratory limits? And  Comments:  tta flags? If so, are the data flags cle
ii. Accuracy project specifii. Do the saddefined?  Yes  NA. All	O No  - All percent ified DQOs, if O No  mple results working O No surrogates reconstructions	ONA (Please explain)  recoveries (%R) reported and within in applicable.  ONA (Please explain)  with failed surrogate recoveries have date in the surrogate explain)	Comments:  method or laboratory limits? And  Comments:  tta flags? If so, are the data flags clean
ii. Accuracy project specifii. Do the saddefined?  Yes  NA. All  iv. Data qual	O No  - All percent ified DQOs, if O No  mple results working No  surrogates receity or usability	ONA (Please explain)  recoveries (%R) reported and within a applicable.  ONA (Please explain)  with failed surrogate recoveries have date of the explain of	Comments:  method or laboratory limits? And  Comments:  tta flags? If so, are the data flags cle  Comments:
ii. Accuracy project speci	O No  - All percent ified DQOs, if O No  mple results working No  surrogates receity or usability	ONA (Please explain)  recoveries (%R) reported and within applicable.  ONA (Please explain)  with failed surrogate recoveries have da  NA (Please explain)  roveries were within limits.	Comments:  method or laboratory limits? And  Comments:  ta flags? If so, are the data flags cle  Comments:
ii. Accuracy project speci	- All percent ified DQOs, if O No on No on No on No on No on Surrogates receity or usability and usability and usability	ONA (Please explain)  recoveries (%R) reported and within applicable.  ONA (Please explain)  with failed surrogate recoveries have da  NA (Please explain)  roveries were within limits.	Comments:  method or laboratory limits? And  Comments:  ta flags? If so, are the data flags cle  Comments:  Comments:  e reported surrogate results.

c.

d.

	• Yes	○ No	ONA (Please explain)	Comments:
ii	i. Precision	- All relative p	percent differences (RPD) less than	specified DQOs? (Recommended: 25 9
		RPI	O (%) = Absolute Value of: $(R_{1}$ - $R_{2})$	
	Where $R_1 =$	Sample Conce		·· <del>-</del> /
	-	_	te Concentration	
	○ Yes	<ul><li>No</li></ul>	ONA (Please explain)	Comments:
	RPD for	TPH-Gasoline	is over control limit, results flagg	ged JD as estimated.
iv	v. Data quali	ty or usability	affected? (Please explain.)	Comments:
	I	oline results followith high imp	-	17-WAS-003-IA were flagged 'JD' as
e. Field	Blank (If no	t used explain	why).	
$\bigcirc$ Y	es Ol	No ©	NA (Please explain)	Comments:
NA.	Field blank	was not requi	red.	
i	i. All results	less than PQL	?	
	○ Yes	○ No	NA (Please explain)	Comments:
	NA. Field	l blank was no	t required.	
i	i. If above P	QL, what samp	oles are affected?	Comments:
	NA. Field	blank was not	required.	
ii	i. Data quali	ty or usability a	affected? (Please explain.)	
				Comments:
	NA. Field	d blank was no	ot required.	
7. Other Data a. Defi	Flags/Quali ned and appr			
<ul><li>Y</li></ul>	Yes O	No O	NA (Please explain)	Comments:
Def	ined within	the laboratory	case narrative.	

ii. Submitted blind to lab?