



# ARM Group LLC

Engineers and Scientists

August 6, 2020

Ms. Barbara Brown  
Project Coordinator  
Maryland Department of the Environment  
1800 Washington Boulevard  
Baltimore, MD 21230

Re: Comment Response Letter:  
Response and Development Work Plan  
Area B: Sub-Parcel B2-3  
Tradepoint Atlantic  
Sparrows Point, MD 21219

Dear Ms. Brown:

On behalf of EnviroAnalytics Group, LLC (EAG), ARM Group LLC (ARM) is providing responses to comments received from the United States Environmental Protection Agency (USEPA) via email on July 29, 2020 regarding the planned development on the portion of the Tradepoint Atlantic property designated as Area B: Sub-Parcel B2-3 (the Site). The comments were received following review of the previous submission of the Sub-Parcel B2-3 Response and Development Work Plan (RADWP; Revision 0 dated June 19, 2020).

Based on the nature of the comments, a revision of the Sub-Parcel B2-3 RADWP is not warranted at this time; however, hard copy replacement pages of select attachments are provided for incorporation into the Sub-Parcel B2-3 RADWP. The enclosed CD provides a compiled PDF of the entire report with the inserted replacement pages. Responses to specific comments are given below; the original comments are included in italics with responses following.

1. *Appendix C, Construction Worker SSLs: On both spreadsheets, the new oral slope factor (1.2E-1 per mg/kg-day, CalEPA) for naphthalene is missing, and therefore the carcinogenic SL is incomplete. While revising the spreadsheets and Construction Worker tables will not change the conclusions for construction workers, it is necessary for accuracy. Revise accordingly.*

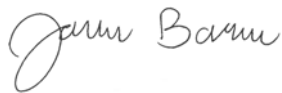
The missing naphthalene oral slope factor has been added to both Construction Worker Soil Screening Level (SSL) spreadsheets in **Appendix C**. Carcinogenic screening levels have been updated accordingly in the Construction Worker risk ratio tables (**Table 12**, **Table 13**, and **Table 14**). As noted, this change does not impact the conclusions regarding Construction Worker safety.

2. *Appendix C, Construction Worker SSLs: The spreadsheets do not identify the source of the subchronic RfD for sodium cyanide. Revise accordingly.*

The source of the subchronic Reference Dose (RfD) value for sodium cyanide has been changed to the Agency for Toxic Substances and Disease Registry. The subchronic RfD value, as reported in this source, remains unchanged.

If you have any questions, or if we can provide any additional information at this time, please do not hesitate to contact ARM Group LLC at 410-290-7775.

Respectfully Submitted,  
ARM Group LLC



Joshua M. Barna, G.I.T.  
Staff Geologist



T. Neil Peters, P.E.  
Senior Vice President



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## **TABLES**

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**Table 12 - Sub-Parcel B2-3  
Surface Soils  
Construction Worker Risk Ratios**

Parameter	Target Organs	<b>65 Day - EU1 (41.4 ac.)</b>				
		EPC (mg/kg)	Construction Worker			
			SSLs (mg/kg)		Risk Ratios	
			Cancer	Non-Cancer	Risk	HQ
<b>Arsenic</b>	<b>Cardiovascular; Dermal</b>	6.09	58.2	371	1.0E-07	0.02
<b>Cobalt</b>	<b>Thyroid</b>	10.0	18,985	3,667	5.3E-10	0.003
<b>Cyanide</b>	<b>Reproductive</b>	2.16		66,083		0.00003
<b>Iron</b>	<b>Gastrointestinal</b>	113,781		925,159		0.1
<b>Manganese</b>	<b>Nervous</b>	22,240		16,192		1
<b>Vanadium</b>	<b>Dermal</b>	1,001		6,161		0.2
<b>PCBs (total)</b>		NA	15.3		0.0E+00	
<b>Benz[a]anthracene</b>		11.5	525		2.2E-08	
<b>Benzo[a]pyrene</b>	<b>Developmental</b>	8.02	64.8	19.0	1.2E-07	0.4
<b>Benzo[b]fluoranthene</b>		9.73	644		1.5E-08	
<b>Dibenz[a,h]anthracene</b>		1.59	68.5		2.3E-08	
<b>Naphthalene</b>	<b>Nervous; Respiratory</b>	6.93	38.0	59.1	1.8E-07	0.1
					<b>5E-07</b>	<b>↓</b>

**Bold indicates maximum value**

N/A indicates no detections

SSLs calculated using equations in the EPA Supplemental Guidance dated 2002

Guidance Equation Input Assumptions:

5 cars/day (2 tons/car)

5 trucks/day (20 tons/truck)

3 meter source depth thickness

Total HI	Cardiovascular	0
	Dermal	0
	Developmental	0
	Gastrointestinal	0
	Nervous	1
	Reproductive	0
	Respiratory	0
	Thyroid	0

**Table 12 - Sub-Parcel B2-3  
Surface Soils  
Construction Worker Risk Ratios**

Parameter	Target Organs	120 Day - EU2-EXP (58.8 ac.)				
		EPC (mg/kg)	Construction Worker			
			SSLs (mg/kg)		Risk Ratios	
			Cancer	Non-Cancer	Risk	HQ
<b>Arsenic</b>	<b>Cardiovascular; Dermal</b>	7.11	31.5	201	2.3E-07	0.04
<b>Cobalt</b>	<b>Thyroid</b>	6.55	12,037	2,008	5.4E-10	0.003
<b>Cyanide</b>	<b>Reproductive</b>	8.98		35,795		0.0003
<b>Iron</b>	<b>Gastrointestinal</b>	105,244		501,128		0.2
<b>Manganese</b>	<b>Nervous</b>	13,171		8,944		1
<b>Vanadium</b>	<b>Dermal</b>	1,067		3,349		0.3
<b>PCBs (total)</b>		<b>2.10</b>	9.47		2.2E-07	
<b>Benz[a]anthracene</b>		0.90	300		3.0E-09	
<b>Benzo[a]pyrene</b>	<b>Developmental</b>	1.33	35.5	13.1	3.7E-08	0.1
<b>Benzo[b]fluoranthene</b>		2.26	354		6.4E-09	
<b>Dibenz[a,h]anthracene</b>		0.16	37.1		4.3E-09	
<b>Naphthalene</b>	<b>Nervous; Respiratory</b>	0.14	26.0	41.3	5.4E-09	0.003
					<b>5E-07</b>	<b>↓</b>

**Bold indicates maximum value**

N/A indicates no detections

SSLs calculated using equations in the EPA Supplemental Guidance dated 2002

Guidance Equation Input Assumptions:

5 cars/day (2 tons/car)

5 trucks/day (20 tons/truck)

3 meter source depth thickness

Total HI	Cardiovascular	0
	Dermal	0
	Developmental	0
	Gastrointestinal	0
	Nervous	1
	Reproductive	0
	Respiratory	0
	Thyroid	0

**Table 13 - Sub-Parcel B2-3  
Sub-Surface Soils  
Construction Worker Risk Ratios**

Parameter	Target Organs	65 Day - EU1 (41.4 ac.)				
		EPC (mg/kg)	Construction Worker			
			SSLs (mg/kg)		Risk Ratios	
			Cancer	Non-Cancer	Risk	HQ
Arsenic	Cardiovascular; Dermal	26.0	58.2	371	4.5E-07	0.07
Cobalt	Thyroid	18.0	18,985	3,667	9.5E-10	0.005
Cyanide	Reproductive	0.79		66,083		0.00001
Iron	Gastrointestinal	108,167		925,159		0.1
Manganese	Nervous	5,026		16,192		0.3
Vanadium	Dermal	85.7		6,161		0.01
PCBs (total)		NA	15.3		0.0E+00	
Benz[a]anthracene		0.25	525		4.8E-10	
Benzo[a]pyrene	Developmental	0.26	64.8	19.0	4.0E-09	0.01
Benzo[b]fluoranthene		0.50	644		7.8E-10	
Dibenz[a,h]anthracene		0.03	68.5		4.4E-10	
Naphthalene	Nervous; Respiratory	0.68	38.0	59.1	1.8E-08	0.01
					<b>5E-07</b>	<b>↓</b>

NA indicates no detections

SSLs calculated using equations in the EPA Supplemental Guidance dated 2002

Guidance Equation Input Assumptions:

5 cars/day (2 tons/car)

5 trucks/day (20 tons/truck)

3 meter source depth thickness

Total HI	Cardiovascular	0
	Dermal	0
	Developmental	0
	Gastrointestinal	0
	Nervous	0
	Reproductive	0
	Respiratory	0
	Thyroid	0

**Table 13 - Sub-Parcel B2-3  
Sub-Surface Soils  
Construction Worker Risk Ratios**

Parameter	Target Organs	120 Day - EU2-EXP (58.8 ac.)				
		EPC (mg/kg)	Construction Worker			
			SSLs (mg/kg)		Risk Ratios	
			Cancer	Non-Cancer	Risk	HQ
Arsenic	Cardiovascular; Dermal	6.80	31.5	201	2.2E-07	0.03
Cobalt	Thyroid	10.4	12,037	2,008	8.6E-10	0.005
Cyanide	Reproductive	32.1		35,795		0.0009
Iron	Gastrointestinal	61,548		501,128		0.1
Manganese	Nervous	9,088		8,944		1
Vanadium	Dermal	348		3,349		0.1
PCBs (total)		NA	9.47		0.0E+00	
Benz[a]anthracene		0.29	300		9.7E-10	
Benzo[a]pyrene	Developmental	0.27	35.5	13.1	7.6E-09	0.02
Benzo[b]fluoranthene		0.58	354		1.6E-09	
Dibenz[a,h]anthracene		0.07	37.1		1.9E-09	
Naphthalene	Nervous; Respiratory	0.16	26.0	41.3	6.2E-09	0.004
					<b>2E-07</b>	<b>↓</b>

NA indicates no detections

SSLs calculated using equations in the EPA Supplemental Guidance dated 2002

Guidance Equation Input Assumptions:

5 cars/day (2 tons/car)

5 trucks/day (20 tons/truck)

3 meter source depth thickness

Total HI	Cardiovascular	0
	Dermal	0
	Developmental	0
	Gastrointestinal	0
	Nervous	1
	Reproductive	0
	Respiratory	0
	Thyroid	0

**Table 14 - Sub-Parcel B2-3  
Pooled Soils  
Construction Worker Risk Ratios**

Parameter	Target Organs	<b>65 Day - EU1 (41.4 ac.)</b>				
		EPC (mg/kg)	Construction Worker			
			SSLs (mg/kg)		Risk Ratios	
			Cancer	Non-Cancer	Risk	HQ
<b>Arsenic</b>	<b>Cardiovascular; Dermal</b>	12.6	58.2	371	2.2E-07	0.03
<b>Cobalt</b>	<b>Thyroid</b>	13.0	18,985	3,667	6.8E-10	0.004
<b>Cyanide</b>	<b>Reproductive</b>	1.44		66,083		0.00002
<b>Iron</b>	<b>Gastrointestinal</b>	102,844		925,159		0.1
<b>Manganese</b>	<b>Nervous</b>	13,729		16,192		0.8
<b>Vanadium</b>	<b>Dermal</b>	702		6,161		0.1
<b>PCBs (total)</b>		NA	15.3		0.0E+00	
<b>Benz[a]anthracene</b>		5.48	525		1.0E-08	
<b>Benzo[a]pyrene</b>	<b>Developmental</b>	3.83	64.8	19.0	5.9E-08	0.2
<b>Benzo[b]fluoranthene</b>		4.71	644		7.3E-09	
<b>Dibenz[a,h]anthracene</b>		0.75	68.5		1.1E-08	
<b>Naphthalene</b>	<b>Nervous; Respiratory</b>	2.49	38.0	59.1	6.6E-08	0.04
					<b>4E-07</b>	<b>↓</b>

**Bold indicates maximum value**

N/A indicates no detections

SSLs calculated using equations in the EPA Supplemental Guidance dated 2002

Guidance Equation Input Assumptions:

5 cars/day (2 tons/car)

5 trucks/day (20 tons/truck)

3 meter source depth thickness

Total HI	Cardiovascular	0
	Dermal	0
	Developmental	0
	Gastrointestinal	0
	Nervous	1
	Reproductive	0
	Respiratory	0
	Thyroid	0



**Table 14 - Sub-Parcel B2-3  
Pooled Soils  
Construction Worker Risk Ratios**

Parameter	Target Organs	120 Day - EU2-EXP (58.8 ac.)				
		EPC (mg/kg)	Construction Worker			
			SSLs (mg/kg)		Risk Ratios	
			Cancer	Non-Cancer	Risk	HQ
Arsenic	Cardiovascular; Dermal	6.46	31.5	201	2.1E-07	0.03
Cobalt	Thyroid	6.78	12,037	2,008	5.6E-10	0.003
Cyanide	Reproductive	17.2		35,795		0.0005
Iron	Gastrointestinal	76,791		501,128		0.2
Manganese	Nervous	9,103		8,944		1
Vanadium	Dermal	650		3,349		0.2
PCBs (total)		<b>2.10</b>	9.47		2.2E-07	
Benz[a]anthracene		0.93	300		3.1E-09	
Benzo[a]pyrene	Developmental	1.00	35.5	13.1	2.8E-08	0.08
Benzo[b]fluoranthene		2.75	354		7.8E-09	
Dibenz[a,h]anthracene		0.08	37.1		2.2E-09	
Naphthalene	Nervous; Respiratory	0.13	26.0	41.3	5.0E-09	0.003
					<b>5E-07</b>	↓

**Bold indicates maximum value**

N/A indicates no detections

SSLs calculated using equations in the EPA Supplemental Guidance dated 2002

Guidance Equation Input Assumptions:

5 cars/day (2 tons/car)

5 trucks/day (20 tons/truck)

3 meter source depth thickness

Total HI	Cardiovascular	0
	Dermal	0
	Developmental	0
	Gastrointestinal	0
	Nervous	1
	Reproductive	0
	Respiratory	0
	Thyroid	0

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## **APPENDIX C**

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**Construction Worker Soil Screening Levels  
Maximum Allowable Work Day Exposure  
Calculation Spreadsheet - Sub-Parcel B2-3**

Description	Variable	Value
Days worked per week	DW	5
Exposure duration (yr)	ED	1
Hours worked per day	ET	8
A/constant (unitless) - particulate emission factor	Aconst	12.9351
B/constant (unitless) - particulate emission factor	Bconst	5.7383
C/constant (unitless) - particulate emission factor	Cconst	71.7711
Dispersion correction factor (unitless)	FD	0.185
Days per year with at least .01" precipitation	P	130
Target hazard quotient (unitless)	THQ	1
Body weight (kg)	BW	80
Averaging time - noncancer (yr)	ATnc	1
Soil ingestion rate (mg/d)	IR	330
Skin-soil adherence factor (mg/cm <sup>2</sup> )	AF	0.3
Skin surface exposed (cm <sup>2</sup> )	SA	3300
Event frequency (ev/day)	EV	1
Target cancer risk (unitless)	TR	01E-06
Averaging time - cancer (yr)	ATc	70
A/constant (unitless) - volatilization	Aconstv	2.4538
B/constant (unitless) - volatilization	Bconstv	17.566
C/constant (unitless) - volatilization	Cconstv	189.0426
Dry soil bulk density (kg/L)	Pb	1.5
Average source depth (m)	ds	3
Soil particle density (g/cm <sup>3</sup> )	Ps	2.65
Total soil porosity	Lpore/Lsoil	0.43
Air-filled soil porosity	Lair/Lsoil	0.28

**Construction Worker Soil Screening Levels  
Maximum Allowable Work Day Exposure  
Calculation Spreadsheet - Sub-Parcel B2-3 Logistic Center IX**

Area of site (ac)	Ac	41.4	→ EU1
Overall duration of construction (wk/yr)	EW	13	
Exposure frequency (day/yr)	EF	65	
Cars per day	Ca	5	
Tons per car	CaT	2	
Trucks per day	Tru	5	
Tons per truck	TrT	20	
Mean vehicle weight (tons)	w	11	
Derivation of dispersion factor - particulate emission factor (g/m2-s per kg/m3)	Q/Csr	13.7	
Overall duration of construction (hr)	tc	2,184	
Overall duration of traffic (s)	Tt	1,872,000	
Surface area (m2)	AR	167,540	
Length (m)	LR	409	
Distance traveled (km)	ΣVKT	266	
Particulate emission factor (m3/kg)	PEFsc	144,897,457	
Derivation of dispersion factor - volatilization (g/m2-s per kg/m3)	Q/Csa	6.76	
Total time of construction (s)	Tcv	1,872,000	

Input  
Calculation

Chemical	RfD & RfC Sources	<sup>A</sup> Ingestion SF (mg/kg-day) <sup>-1</sup>	<sup>A</sup> Inhalation Unit Risk (ug/m <sup>3</sup> ) <sup>-1</sup>	<sup>A</sup> Subchronic RfD (mg/kg-day)	<sup>A</sup> Subchronic RfC (mg/m <sup>3</sup> )	<sup>A</sup> GIABS	Dermally Adjusted RfD (mg/kg-day)	<sup>A</sup> ABS	<sup>A</sup> RBA	<sup>A</sup> Dia	<sup>A</sup> Diw	<sup>A</sup> Henry's Law Constant (unitless)	<sup>A</sup> Kd	<sup>A</sup> Koc	DA	Volatilization Factor - Unlimited Reservoir (m <sup>3</sup> /kg)	Carcinogenic Ingestion/ Dermal SL (SLing/der)	Carcinogenic Inhalation SL (SLinh)	Carcinogenic SL (mg/kg)	Non-Carcinogenic Ingestion/ Dermal SL (SLing/der)	Non-Carcinogenic Inhalation SL (SLinh)	Non-Carcinogenic SL (mg/kg)
Arsenic, Inorganic	I/C	1.50E+00	4.30E-03	3.00E-04	1.50E-05	1	3.00E-04	0.03	0.6			-	2.90E+01				58.3	39,737	58.2	375	36,614	371
Cobalt	P	-	9.00E-03	3.00E-03	2.00E-05	1	3.00E-03	0.01	1			-	4.50E+01					18,985	18,985	3,965	48,819	3,667
Cyanide (Sodium)	A	-	-	5.00E-02	-	1	5.00E-02	0.01	1			-	-							66,083		66,083
Iron	P	-	-	7.00E-01	-	1	7.00E-01	0.01	1			-	2.50E+01							925,159		925,159
Manganese (Non-diet)	I	-	-	2.40E-02	5.00E-05	0.04	9.60E-04	0.01	1			-	6.50E+01							18,669	122,048	16,192
Vanadium and Compounds	A	-	-	1.00E-02	1.00E-04	0.026	2.60E-04	0.01	1			-	1.00E+03							6,320	244,096	6,161
PCB Total	I	2.00E+00	5.71E-04	-	-	1		0.14	1	2.40E-02	6.30E-06	1.70E-02	4.68E+02	7.80E+04	4.66E-08	1.37E+4	33.6	28.2	15.3			
Benz[a]anthracene	I	1.00E-01	6.00E-05	-	-	1		0.13	1	2.60E-02	6.70E-06	4.91E-04	1.08E+03	1.80E+05	6.71E-10	1.14E+5	686	2,239	525			
Benzo[a]pyrene	I	1.00E+00	6.00E-04	3.00E-04	2.00E-06	1	3.00E-04	0.13	1	4.80E-02	5.60E-06	1.87E-05	3.54E+03	5.90E+05	2.37E-11	6.07E+5	68.6	1,188	64.8	294	20.4	19.0
Benzo[b]fluoranthene	I	1.00E-01	6.00E-05	-	-	1		0.13	1	4.80E-02	5.60E-06	2.69E-05	3.60E+03	6.00E+05	2.91E-11	5.47E+5	686	10,717	644			
Dibenz[a,h]anthracene	I	1.00E+00	6.00E-04	-	-	1		0.13	1	4.50E-02	5.20E-06	5.76E-06	1.14E+04	1.90E+06	4.13E-12	1.45E+6	68.6	284,779	68.5			
Naphthalene	C/I/A	1.20E-01	3.40E-05	2.00E-02	3.00E-03	1	2.00E-02	0.13	1	6.00E-02	8.40E-06	1.80E-02	9.00E+00	1.50E+03	6.35E-06	1.17E+3	571	40.7	38.0	19,587	59.2	59.1

\*chemical specific parameters found in Chemical Specific Parameters Spreadsheet at <https://www.epa.gov/risk/regional-screening-levels-rsls>  
<sup>A</sup>chemical specific parameters found in Unpaved Road Traffic calculator at [https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl\\_search](https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search)  
I: chemical specific parameters found in the IRIS at <https://www.epa.gov/iris>  
C: chemical specific parameters found in Cal EPA at <https://www.dtsc.ca.gov/AssessingRisk>  
A: chemical specific parameters found in Agency for Toxic Substances and Disease Registry Minimal Risk Levels (MRLs) at [https://www.atsdr.cdc.gov/mrls/pdfs/atsdr\\_mrls.pdf](https://www.atsdr.cdc.gov/mrls/pdfs/atsdr_mrls.pdf)  
P: chemical specific parameters found in the Database of EPA PPRTVs at <https://hhprtv.ornl.gov/quickview/pprtv.php>

**Construction Worker Soil Screening Levels  
Maximum Allowable Work Day Exposure  
Calculation Spreadsheet - Sub-Parcel B2-3 Logistic Center IX**

Area of site (ac)	Ac	58.8	→ EU2-EXP
Overall duration of construction (wk/yr)	EW	24	
Exposure frequency (day/yr)	EF	120	
Cars per day	Ca	5	
Tons per car	CaT	2	
Trucks per day	Tru	5	
Tons per truck	TrT	20	
Mean vehicle weight (tons)	w	11	
Derivation of dispersion factor - particulate emission factor (g/m <sup>2</sup> -s per kg/m <sup>3</sup> )	Q/Csr	13.4	
Overall duration of construction (hr)	tc	4,032	
Overall duration of traffic (s)	Tt	3,456,000	
Surface area (m <sup>2</sup> )	AR	237,955	
Length (m)	LR	488	
Distance traveled (km)	ΣVKT	585	
Particulate emission factor (m <sup>3</sup> /kg)	PEFsc	169,604,749	
Derivation of dispersion factor - volatilization (g/m <sup>2</sup> -s per kg/m <sup>3</sup> )	Q/Csa	6.43	
Total time of construction (s)	Tcv	3,456,000	

Input  
Calculation

Chemical	RfD & RfC Sources	<sup>A</sup> Ingestion SF (mg/kg-day) <sup>-1</sup>	<sup>A</sup> Inhalation Unit Risk (ug/m <sup>3</sup> ) <sup>-1</sup>	<sup>A</sup> Subchronic RfD (mg/kg-day)	<sup>A</sup> Subchronic RfC (mg/m <sup>3</sup> )	<sup>A</sup> GIABS	Dermally Adjusted RfD (mg/kg-day)	<sup>A</sup> ABS	<sup>A</sup> RBA	<sup>A</sup> Dia	<sup>A</sup> Diw	<sup>A</sup> Henry's Law Constant (unitless)	<sup>A</sup> Kd	<sup>A</sup> Koc	DA	Volatilization Factor - Unlimited Reservoir (m <sup>3</sup> /kg)	Carcinogenic Ingestion/ Dermal SL (SLing/der)	Carcinogenic Inhalation SL (SLinh)	Carcinogenic SL (mg/kg)	Non-Carcinogenic Ingestion/ Dermal SL (SLing/der)	Non-Carcinogenic Inhalation SL (SLinh)	Non-Carcinogenic SL (mg/kg)
Arsenic, Inorganic	I/C	1.50E+00	4.30E-03	3.00E-04	1.50E-05	1	3.00E-04	0.03	0.6			-	2.90E+01				31.6	25,194	31.5	203	23,215	201
Cobalt	P	-	9.00E-03	3.00E-03	2.00E-05	1	3.00E-03	0.01	1			-	4.50E+01					12,037	12,037	2,148	30,953	2,008
Cyanide (Sodium)	A	-	-	5.00E-02	-	1	5.00E-02	0.01	1			-	-							35,795		35,795
Iron	P	-	-	7.00E-01	-	1	7.00E-01	0.01	1			-	2.50E+01							501,128		501,128
Manganese (Non-diet)	I	-	-	2.40E-02	5.00E-05	0.04	9.60E-04	0.01	1			-	6.50E+01							10,113	77,382	8,944
Vanadium and Compounds	A	-	-	1.00E-02	1.00E-04	0.026	2.60E-04	0.01	1			-	1.00E+03							3,424	154,764	3,349
PCB Total	I	2.00E+00	5.71E-04	-	-	1		0.14	1	2.40E-02	6.30E-06	1.70E-02	4.68E+02	7.80E+04	4.66E-08	1.77E+4	18.2	19.8	9.47			
Benz[a]anthracene	I	1.00E-01	6.00E-05	-	-	1		0.13	1	2.60E-02	6.70E-06	4.91E-04	1.08E+03	1.80E+05	6.71E-10	1.47E+5	371	1,566	300			
Benzo[a]pyrene	I	1.00E+00	6.00E-04	3.00E-04	2.00E-06	1	3.00E-04	0.13	1	4.80E-02	5.60E-06	1.87E-05	3.54E+03	5.90E+05	2.37E-11	7.84E+5	37.1	831	35.5	159	14.2	13.1
Benzo[b]fluoranthene	I	1.00E-01	6.00E-05	-	-	1		0.13	1	4.80E-02	5.60E-06	2.69E-05	3.60E+03	6.00E+05	2.91E-11	7.07E+5	371	7,494	354			
Dibenz[a,h]anthracene	I	1.00E+00	6.00E-04	-	-	1		0.13	1	4.50E-02	5.20E-06	5.76E-06	1.14E+04	1.90E+06	4.13E-12	1.88E+6	37.1	180,558	37.1			
Naphthalene	C/I/A	1.20E-01	3.40E-05	2.00E-02	3.00E-03	1	2.00E-02	0.13	1	6.00E-02	8.40E-06	1.80E-02	9.00E+00	1.50E+03	6.35E-06	1.51E+3	309	28.4	26.0	10,610	41.4	41.3

\*chemical specific parameters found in Chemical Specific Parameters Spreadsheet at <https://www.epa.gov/risk/regional-screening-levels-rsls>  
<sup>A</sup>chemical specific parameters found in Unpaved Road Traffic calculator at [https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl\\_search](https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search)  
I: chemical specific parameters found in the IRIS at <https://www.epa.gov/iris>  
C: chemical specific parameters found in Cal EPA at <https://www.dtsc.ca.gov/AssessingRisk>  
A: chemical specific parameters found in Agency for Toxic Substances and Disease Registry Minimal Risk Levels (MRLs) at [https://www.atsdr.cdc.gov/mrls/pdfs/atsdr\\_mrls.pdf](https://www.atsdr.cdc.gov/mrls/pdfs/atsdr_mrls.pdf)  
P: chemical specific parameters found in the Database of EPA PPRTVs at <https://hhprtv.ornl.gov/quickview/pprtv.php>