Chemical	NJ Non Residential	Proposed FS 4-2	Proposed FS 4-3	Federal Guidelines Plants
As	19	19	19	
Pb	800	2700	400	120
B(a)P	2	9	1	
PCB	1	5 ?		
Hg	65	180	23	
Dieldrin	0.2	0.8 ?		
α BHC		0.5 ?		
Heptaclor		3		

	Lead	OSWER Directive 9285.7-70

Soil Invertebrates	Avian	Mammalian	Local Background Upper 75th Percentile	NJ Impacts to GW	On GSNWR Location SS 44	SS 53	SS 60
			4.6	0.01			
1700	11	56	38.4	90	1580	1110	974
			0.08	0.2		0.57	
			0.0093	0.2	1.83	10.9	6
						0.11	0.29
					1	1	1

SS 68	SS 77	SS 131	SS 132	SS 104	SS 106	SS 114	SS 115	SS 118	SS 119	SS 120	SS 121	SS 122	SS 123	SS 124
				22			33			25.3	30.2			
1320				528		2540	6170	2560	1070	1310	1340	1270	1370	473
							1.5		1.5					
4.99	2.16	0.78	0.78	5.83	0.86	1.17	0.78	23	2.4	3.4	12.3	1.28	3.15	1.48
						41.3								
										0.05	0.05			
									0.25					
									1.1					
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

SS 139	POI-2	SS 133	SS 134	SS 135	SS 136	SS 137	SS 138	SS 155	SS 156	SS 85	Count	Max	Median
					28.2					22.8	6	33	26.8
	1490									2360	16	6170	1,330.0
					0.6			0.24	0.21		6	1.5	0.6
0.23	2.18	0.21	0.27	0.32	0.62	1.18	0.22			3.74	27	23	1.5
											1	41.3	41.3
										0.14	5	0.29	0.1

DON'T USE

1	1	1	1	1	1	1	1	1	1	1
					2.00	4	6	7	8	0

Mean	No > FS 4-3	No > Lowest Fed	No > NJ Non Residential Direct	N > 75%tile BG	SS 180
26.9	6.0			6.0	
1,716.6	16.0	16.0	14.0	16.0	
0.8	2.0			6.0	
3.4	0.0		17.0	27.0	
41.3	1.0				
0.1	0.0				

SS 114 PO 1-2 SS 135 SS 136

SS 141
NO

Near GSNWR

SS-39	SS 67	SS 75
		32.2
2050	1580	1360
12.3	1.32	4.17
0.05		0.06

Well	No. Consitiuents Exceeding New Jersey Groundwater Standards [a]	Summary
MW - 2	4	Dissolved Metals
MW - 4	4	Dissolved Metals
MW-12	5	Dissolved Metals
MW -14	4	Dissolved Metals
MW - 19	5	Dissolved Metals and Benzene
X-1	6	Dissolved Metals
X-2	4	Dissolved Metals
X-3	3	Dissolved Metals

Source: RI Figure 4-2 (Geosyntec Consultants, 2018)
[a] N.J.A.C. 7:9C Ground Water Quality Standards

Locations

Chemicals of Potential Ecological Concern (COPEC) from BERA Figure 4-3	Unit	Summary and Comparison to Up Gradient Sediments			
		No. of RAOI Sediment Samples [A]	Highest Up gradient Sediment (Non Pond) Benchmark Concentration [B]	No. of RAOI Exceeding Highest Up Gradient Sediment Concentration [C]	Percentage of RAOI Samples Exceeding Highest Up Gradient Sediment Benchmark Concentration
Total DDx	µg/kg	6	15	2	33%
Total PCBs	µg/kg	6	42	4	67%
Barium	mg/kg	6	166	3	50%
Copper	mg/kg	6	55.8	4	67%
Lead	mg/kg	6	98.1	4	67%
Mercury	mg/kg	6	0.23	5	83%
Nickel	mg/kg	6	29.9	2	33%
Zinc	mg/kg	6	294	2	33%

[A] SEDs 006, 007,008, 009, 015, 018 (BERA Figure 4-3)

[B] From SEDs 010, 011, 016, 017 (BERA Figure 4-3)

[C] Comparison to the highest up gradient non pond concentration is a not necessarily a conservative metric.

[D] USEPA Assessment and Remediation of Contaminated Sediments Program (ARCS) (USEPA 1996).

[E] USEPA Assessment and Remediation of Contaminated Sediments Program (ARCS).

The Probable Effect Level (PEL) is the geometric mean of the 50th percentile in the effects data set and the 8
to result in adverse effects to these organisms. These are probable-effects benchmarks. For PCBs the High I
sediment ecosystems in North America. The BERA included toxicity tests using these species.

- No comparable information for barium.

[F] NJDEP 2009. Ecological Screening Criteria (ESC) Table. LEL = Lowest Effects Level, SEL = Severe Effects Lev

ND DL Shown

					Comparisons of BERA SEDs 006, 007, 008, 00
ARCS TEL Sediment Screening Benchmark [D]	No. RAOI Sediments Exceeding ARCS TEL Sediment Screening Benchmark	Percentage RAOI Sediments Exceeding ARCS TEL Sediment Screening Benchmark	ARCS PEL Sediment Screening Benchmark [E]	No. RAOI Sediments Exceeding ARCS PEL Sediment Screening Benchmark	Percentage RAOI Sediments Exceeding ARCS PEL Sediment Screening Benchmark
5.28	4	67%	572	0	0%
59.8	4	67%	676	2	33%
-	-	-	-	-	-
31.6	5	83%	149	2	33%
35.8	5	83%	128	3	50%
0.18	5	83%	1.06	2	33%
22.7	2	33%	48.6	1	17%
121	4	67%	459	2	33%

Other comparisons, (e.g., to the median up gradient concentration) would be more conservative.

5th percentile in the no effects data set. It represents the lower limit of the range of concentrations usu
Risk value is presented. The ARCS effects concentrations were developed for the amphipod Hyallella Azt

el

), 015, 018 to Benchmarks

New Jersey LEL [F]	No. RAOI Sediments Exceeding New Jersey LEL mg/kg Screening Benchmark	Percentage RAOI Sediments Exceeding New Jersey LEL Screening Benchmark	New Jersey SEL [F]	No. RAOI Sediments Exceeding New Jersey SEL Screening Benchmark	Percentage RAOI Sediments Exceeding New Jersey SEL Screening Benchmark	ARCS LEL
0.07	6	100%	12	3	50%	5.28
0.060	4	67%	530	2	33%	59.8
-	-	-	-	-	-	-
16	5	83%	110	2	33%	31.6
31	5	83%	250	2	33%	35.8
0.174	5	83%	2	2	33%	0.18
16	4	67%	75	1	17%	22.7
120	4	67%	820	1	17%	121

ally associated with adverse effects. A concentration greater than the PEL is likely
teca and midge Chironomus Riparius which are widespread and abundant in

	Upgradient				RAOI					
ARCS PEL										
	SED 010	SED 011	SED 016	SED 017	SED 006	SED 007	SED 008	SED 009	SED 015	SED 018
572	ND	ND	7.6	15	32	434	15	4.8	3.1	9.7
676	ND	ND	42	42	1560	2900	91	110	ND	ND
-	16.2	75.6	166	166	526	795	162	213	35.8	94.9
149	4	25.2	55.8	55.8	311	1290	57.2	57.4	12.3	36.4
128	4	10.6	98.1	98.1	358	1580	130	123	11.7	52.9
1.06	ND	ND	0.23	0.23	2.6	8.2	0.47	0.63	ND	0.28
48.6	4.1	29.9	29.4	29.4	46.5	131	17.3	17.1	7.2	11.4
459	30.8	61.7	294	294	814	3240	172	259	50.8	69.3

Upgradient Benchmark			No. RAOI Exceeding		
			ARCS TEC Sediment Screening Benchmark mg/kg [a]	ARCS PEC Sediment Screening Benchmark mg/kg [b]	New Jersey LEL mg/kg [c]
Highest of Upgradied SED					
15		2	4	0	6
42		4	4	2	4
166		3			
55.8		4	5	2	5
98.1		4	5	3	5
0.23		5	5	2	5
29.9		2	2	1	4
294		2	4	2	4

New Jersey
SEL mg/kg [c]

3
2

2
2
2
1
1

Variable	Unit	Parameter
PCB Sediment concentration	µg/kg	2900
Log Kow	-	6.98
Koc	L/kg	8.52E+04
Fraction Organic Carbon (foc)	-	0.143
Water Solubility	µg/L	9.394
Kd	L/kg	1.22E+04
Pore water concentration	µg/L	2.38E-01
Water column concentration	µg/L	2.38E-03
Ecosystem inputs	Various	-

KABAM: Kow (Based) Aquatic Bioaccumulation Model
through respiration and diet of organisms in different tr
potential magnitude of impact.
Source: USEPA Environmental Fate and Effects Division,

0.0024

Remark
SED 007 BERA (Modeled as Arochor 1254)
EPI Suite (USEPA 2012)
EPI Suite (USEPA 2012)
BERA (SED 007)
EPI Suite (USEPA 2012)
Koc * foc
PCB Sediment concentration / Kd
Assume 100 less than pore water (well below solubility)
KABAM Defaults (USEPA 2009)
uses a chemical's octanol-water partition coefficient to estimate uptake and elimination ·ophic levels . It is a general screening tool used here as a conservative gauge of Office of Pesticide Programs.

3.95E+03

Upgradient of RAOI
Sed

34
35
36

Up of BERA 6 & 7

22
23

Immediate Vicinity BERA 6 & 7

38

Down of BERA 6 & 7

24
44

Downgradient of RAOI

25
26

[A] Barium (Ba), Copper (Cu), Lead (Pb), Mercury (Hg), Nickel (Ni), Zinc (Zn)

							Metal
Mercury							
Reported	Comment	Barium	Copper	Lead	Mercury	Nickel	
		-	28.3	116	0.32	22.9	
		-	32.7	-			

s mg/kg

PCB

DDD o,p DDE

24

Chemicals of Potential Ecological Concern (COPEC) from BERA Figure 4-3
Total DDx [A]
4,4-DDE
DDD
o,p-DDD
o,p-DDE
Total PCBs [A]
Aroclor 1254
Aroclor 1260
Barium
Copper
Lead
Mercury
Nickel
Zinc

- Not reported as exceeding NJDEP Ecologically-Based Screening Levels.
Source of Sample Locations: RI Figure 2-7 (Geosyntec Consultants, Inc. 2018a).
Source of Data: RI Figures 4-4a and 4-4b (Geosyntec Consultants, Inc. 2018a).
Source of COPECS: BERA Figure 4-3. (Integral Consulting, Inc. 2016).
[A] Note the RI data contained specific analyte data for DDx and Total PCBs which is included.
See Figure 6 for sample locations.
(Year Collected)

Unit		Unit	Black Brook Upstream			Black Brook Upstream of Vernal Ponds	
			SD 34 (2008)	SD 35 (2008)	SD 36 (2008)	SD 22 (2008)	SD 23 (2008)
µg/kg		µg/kg	-	-	-	-	-
		µg/kg	9.2	6	7.1	6	9.5
		µg/kg	-	24	-	12	17
		µg/kg	-	11	-	8.8	-
			-	-	-	-	-
µg/kg		µg/kg	-	-	-	82	160
		µg/kg	-	-	-	82	160
		µg/kg	-	-	-	-	-
mg/kg		mg/kg	-	-	-	-	-
mg/kg		mg/kg	28.3	21.1	32.7	71.8	102
mg/kg		mg/kg	116	62.9	-	150	242
mg/kg		mg/kg	0.32	-	-	0.46	0.84
mg/kg		mg/kg	22.9	-	-	24.3	35.6
mg/kg		mg/kg	135	128	125	293	660

Vernal Ponds		Black Brook Downstream of Vernal Ponds			
SD 38 (2014)	SD 44 (2014)	SD 24 (2008)	SD 25 (2008)	SD 26 (2008)	SED 06 (2016)
-	-	-	-	-	
29	-	6.2	5.2	-	
150	67	11	-	-	
78	25	-	-	-	
17	9.2	-	-	-	
1300	864	-	-	-	
690	350	-	-	-	
240	64	-	-	-	
-	-	-	-	-	
618	135	94.8	61.3	19.1	
845	160	208	117	-	
4.4	0.89	0.84	0.41	0.26	
70.2	58.3	39.8	23.1	-	
2270	637	497	333	-	

Chemicals of Potential Ecological Concern (COPEC) from BERA Figure 4-3	Unit	Unit	Loantaka Brook Upstream			
			SD 7 (2008)	SD 8 (2008)	SD 9 (2008)	SD 10 (2008)
Total DDx [B]	µg/kg	µg/kg	-	-	-	-
4,4-DDE		µg/kg	-	-	13	-
DDD		µg/kg	-	-	-	-
o,p-DDD		µg/kg	-	-	-	-
o,p-DDE		µg/kg	-	-	-	-
2,4-DDT		µg/kg	-	-	8.3	-
DDT		µg/kg	-	-	14	-
Total PCBs [B]	µg/kg	µg/kg	-	-	120	-
Aroclor 1254		µg/kg	-	-	120	-
Aroclor 1260		µg/kg	-	-	-	-
Barium	mg/kg	mg/kg	-	-	-	-
Copper	mg/kg	mg/kg	-	-	58.3	-
Lead	mg/kg	mg/kg	-	-	74.3	-
Mercury	mg/kg	mg/kg	-	-	-	-
Nickel	mg/kg	mg/kg	-	-	38.1	-
Zinc	mg/kg	mg/kg	-	-	224	-

- Not reported as exceeding NJDEP Ecologically-Based Screening Levels.
Source of Sample Locations: RI Figure 2-7 (Geosyntec Consultants, Inc. 2018a).
Source of Data: RI Figures 4-4b (Geosyntec Consultants, Inc. 2018a).
Source of COPECS: BERA Figure 4-3. (Integral Consulting, Inc. 2016).
[A] The RI designated these as downstream locations (Geosyntec Consultants, Inc. 2018a). The mid-strear
[B] Note the RI data contained specific analyte data for DDx and Total PCBs which is included.
See Figure 6 for sample locations.
(Year Collected)

ı	Loantaka Brook Downstream (mid-stream [A])					Vernal Ponds Area (south RAOI Area)				Loantaka Brook Downs		
SD 11 (2008)	SD 12 (2008)	SD 13 (2008)	SD 14 (2008)	SD 15 (2008)	SD 16 (2008)	SD 27 (2008)	SD 35 (2014)	SD 36 (2014)	SD 37 (2014)	SD 28 (2008)	SD 29 (2008)	SD 30 (2008)
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	10	16	-	-	13	8.6	-	-	-	-
-	-	-	-	-	-	-	22	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	164	-	-	-	-	-
-	-	-	-	-	-	-	82	-	-	-	-	-
-	-	-	-	-	-	-	58	39	26	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	16.6	57.3	69.7	-	23.8	79.9	118	37.4	-	18.1	-
-	-	-	-	64.3	-	-	167	294	90.9	-	59.5	-
-	-	-	-	-	-	-	0.78	1	0.42	-	-	-
-	-	-	24.3	38.9	-	-	22	34.1	12.4	-	-	-
-	-	-	192	255	-	-	365	541	185	-	-	-

n term is used here in reference to their relative proximity to upstream and downstream locations.

stream
SD 31 (2008)
-
-
-
-
-
-
-
-
-
-
-
-
-
-
-
-

Meadow vole

RE Table H3-5 BERA | Re BERA pp 1043

Parameter	Unit	Value	
TRV NOAEL	mg/kg-day	1.26E+02	BERA App A 2.7.9 Lead Mammalian TRVs
TRV LOAEL	mg/kg-day	4.51E+02	BERA App A 2.7.9 Lead Mammalian TRVs
Soils to Plant Transfer	-	0.041509434	
Food ingestion rate	kg/day	0.086	
Soils/sed ingestion rate	kg/day	0.002	
Body weight	kg	0.0395	
Use factor	-	1	

	C soil mg/kg	C Veg mg/kg	Soil Ingest mg/kg-day
BERA Table H3-5	530	22	2.7E+01
	557	23	2.8E+01
	584	24	3.0E+01
	614	25	3.1E+01
	644	27	3.3E+01
	676	28	3.4E+01
	710	29	3.6E+01
	746	31	3.8E+01
	783	33	4.0E+01
	822	34	4.2E+01
	863	36	4.4E+01
	906	38	4.6E+01
	952	40	4.8E+01
	999	41	5.1E+01
	1049	44	5.3E+01
	1102	46	5.6E+01
	1157	48	5.9E+01
	1215	50	6.2E+01
	1276	53	6.5E+01
	1339	56	6.8E+01
	1406	58	7.1E+01
	1477	61	7.5E+01
	1550	64	7.9E+01
	1628	68	8.2E+01
	1709	71	8.7E+01
	1795	74	9.1E+01
	1885	78	9.5E+01
	1979	82	1.0E+02
	2078	86	1.1E+02
	2182	91	1.1E+02

Checks Table H3-5

Veg Ingest mg/kg-day	ADD mg/kg/day	HQ NOAEL	HQ LOAEL
4.8E+01	7.5E+01	5.9E-01	1.66E-01
5.0E+01	7.8E+01	6.2E-01	1.74E-01
5.3E+01	8.2E+01	6.5E-01	1.83E-01
5.5E+01	8.7E+01	6.9E-01	1.92E-01
5.8E+01	9.1E+01	7.2E-01	2.01E-01
6.1E+01	9.5E+01	7.6E-01	2.11E-01
6.4E+01	1.0E+02	7.9E-01	2.22E-01
6.7E+01	1.1E+02	8.3E-01	2.33E-01
7.1E+01	1.1E+02	8.8E-01	2.45E-01
7.4E+01	1.2E+02	9.2E-01	2.57E-01
7.8E+01	1.2E+02	9.7E-01	2.70E-01
8.2E+01	1.3E+02	1.0E+00	2.83E-01
8.6E+01	1.3E+02	1.1E+00	2.98E-01
9.0E+01	1.4E+02	1.1E+00	3.12E-01
9.5E+01	1.5E+02	1.2E+00	3.28E-01
1.0E+02	1.6E+02	1.2E+00	3.44E-01
1.0E+02	1.6E+02	1.3E+00	3.62E-01
1.1E+02	1.7E+02	1.4E+00	3.80E-01
1.2E+02	1.8E+02	1.4E+00	3.99E-01
1.2E+02	1.9E+02	1.5E+00	4.19E-01
1.3E+02	2.0E+02	1.6E+00	4.40E-01
1.3E+02	2.1E+02	1.7E+00	4.62E-01
1.4E+02	2.2E+02	1.7E+00	4.85E-01
1.5E+02	2.3E+02	1.8E+00	5.09E-01
1.5E+02	2.4E+02	1.9E+00	5.34E-01
1.6E+02	2.5E+02	2.0E+00	5.61E-01
1.7E+02	2.7E+02	2.1E+00	5.89E-01
1.8E+02	2.8E+02	2.2E+00	6.19E-01
1.9E+02	2.9E+02	2.3E+00	6.50E-01
2.0E+02	3.1E+02	2.4E+00	6.82E-01

Ratio LOAEL/NOAEL

3.58E+00

3.6E+00

2291	95	1.2E+02
2405	100	1.2E+02
2525	105	1.3E+02
2652	110	1.3E+02
2784	116	1.4E+02
2923	121	1.5E+02
3070	127	1.6E+02
3223	134	1.6E+02
3384	140	1.7E+02
3554	148	1.8E+02
3731	155	1.9E+02
3918	163	2.0E+02
4114	171	2.1E+02
4319	179	2.2E+02
4535	188	2.3E+02
77	3	3.9E+00

2.1E+02	3.2E+02	2.6E+00	7.16E-01
2.2E+02	3.4E+02	2.7E+00	7.52E-01
2.3E+02	3.6E+02	2.8E+00	7.90E-01
2.4E+02	3.7E+02	3.0E+00	8.29E-01
2.5E+02	3.9E+02	3.1E+00	8.71E-01
2.6E+02	4.1E+02	3.3E+00	9.14E-01
2.8E+02	4.3E+02	3.4E+00	9.60E-01
2.9E+02	4.5E+02	3.6E+00	1.01E+00
3.1E+02	4.8E+02	3.8E+00	1.06E+00
3.2E+02	5.0E+02	4.0E+00	1.11E+00
3.4E+02	5.3E+02	4.2E+00	1.17E+00
3.5E+02	5.5E+02	4.4E+00	1.22E+00
3.7E+02	5.8E+02	4.6E+00	1.29E+00
3.9E+02	6.1E+02	4.8E+00	1.35E+00
4.1E+02	6.4E+02	5.1E+00	1.42E+00
7.0E+00	1.1E+01	8.6E-02	2.41E-02

Cell: G19
Comment: Dennis Smith:
Checks Table H3-5

Shrew
RE Table H4-6 BERA

Parameter	Unit	Value	
TRV NOAEL	mg/kg-day	1.26E+02	BERA App A 2.7.9 Lead Mammalian TRVs
TRV LOAEL	mg/kg-day	4.51E+02	BERA App A 2.7.9 Lead Mammalian TRVs
Soils to Plant Transfer	-	0.041509434	
Soils to Invert Transer	-	0.132075472	
Food ingestion rates	kg/day	0.056	
Soils Invert fraction	-	0.95	
Vegetation	-	0.05	
Soils/sed ingestion rate	kg/day	0.0075	
Body weight	kg	0.015	
Use factor	-	1	

C soil mg/kg	C Veg mg/kg	C Invert mg/kg
130	5	17
130	5	17
137	6	18
144	6	19
151	6	20
159	7	21
167	7	22
175	7	23
184	8	24
193	8	25
202	8	27
213	9	28
223	9	29
234	10	31
246	10	32
258	11	34
271	11	36
285	12	38
299	12	40
314	13	41
330	14	44
346	14	46
364	15	48
382	16	50
401	17	53
421	17	56

Soil Ingest mg/kg-day	Veg Ingest mg/kg-day	Invert Ingest mg/kg-day	ADD mg/kg/day	HQ NOAEL
6.5E+01	1.0E+00	6.1E+01	1.3E+02	1.007
6.5E+01	1.0E+00	6.1E+01	1.3E+02	1.0E+00
6.9E+01	1.1E+00	6.4E+01	1.3E+02	1.1E+00
7.2E+01	1.1E+00	6.7E+01	1.4E+02	1.1E+00
7.6E+01	1.2E+00	7.1E+01	1.5E+02	1.2E+00
7.9E+01	1.2E+00	7.4E+01	1.5E+02	1.2E+00
8.3E+01	1.3E+00	7.8E+01	1.6E+02	1.3E+00
8.7E+01	1.4E+00	8.2E+01	1.7E+02	1.4E+00
9.2E+01	1.4E+00	8.6E+01	1.8E+02	1.4E+00
9.6E+01	1.5E+00	9.0E+01	1.9E+02	1.5E+00
1.0E+02	1.6E+00	9.5E+01	2.0E+02	1.6E+00
1.1E+02	1.6E+00	1.0E+02	2.1E+02	1.6E+00
1.1E+02	1.7E+00	1.0E+02	2.2E+02	1.7E+00
1.2E+02	1.8E+00	1.1E+02	2.3E+02	1.8E+00
1.2E+02	1.9E+00	1.2E+02	2.4E+02	1.9E+00
1.3E+02	2.0E+00	1.2E+02	2.5E+02	2.0E+00
1.4E+02	2.1E+00	1.3E+02	2.6E+02	2.1E+00
1.4E+02	2.2E+00	1.3E+02	2.8E+02	2.2E+00
1.5E+02	2.3E+00	1.4E+02	2.9E+02	2.3E+00
1.6E+02	2.4E+00	1.5E+02	3.1E+02	2.4E+00
1.6E+02	2.6E+00	1.5E+02	3.2E+02	2.6E+00
1.7E+02	2.7E+00	1.6E+02	3.4E+02	2.7E+00
1.8E+02	2.8E+00	1.7E+02	3.5E+02	2.8E+00
1.9E+02	3.0E+00	1.8E+02	3.7E+02	3.0E+00
2.0E+02	3.1E+00	1.9E+02	3.9E+02	3.1E+00
2.1E+02	3.3E+00	2.0E+02	4.1E+02	3.3E+00

Checks Table H4-6 pp 1090

HQ LOAEL
2.81E-01
2.82E-01
2.97E-01
3.11E-01
3.27E-01
3.43E-01
3.60E-01
3.79E-01
3.97E-01
4.17E-01
4.38E-01
4.60E-01
4.83E-01
5.07E-01
5.33E-01
5.59E-01
5.87E-01
6.17E-01
6.47E-01
6.80E-01
7.14E-01
7.49E-01
7.87E-01
8.26E-01
8.68E-01
9.11E-01

Ratio LOAEL/NOAEL
3.58E+00

	442	18	58
	464	19	61
BERA Table H4-6	530	22	70
	557	23	74
	584	24	77
	614	25	81

2.2E+02	3.4E+00	2.1E+02	4.3E+02	3.4E+00
2.3E+02	3.6E+00	2.2E+02	4.5E+02	3.6E+00
2.7E+02	4.1E+00	2.5E+02	5.2E+02	4.1E+00
2.8E+02	4.3E+00	2.6E+02	2.8E+02	2.2E+00
2.9E+02	4.5E+00	2.7E+02	3.0E+02	2.4E+00
3.1E+02	4.8E+00	2.9E+02	3.1E+02	2.5E+00

9.56E-01
1.0043
1.15E+00
6.27E-01
6.58E-01
6.91E-01

Cell: I22
Comment: Dennis Smith:
Checks Table H4-6

Cell: I53
Comment: Dennis Smith:
Checks BERA Table H4-6

American robin
RE Table H5-1 BERA

Parameter	Unit	Value
TRV NOAEL	mg/kg-day	1.05E+01
TRV LOAEL	mg/kg-day	5.38E+01
Soils to Plant Transfer	-	0.042857143
Soils to Invert Transer	-	0.350649351
Food ingestion rates	kg/day	0.604
Diet pref - Veg	-	0.62
Diet pref - invert	-	0.38
Soils Invert fraction	-	1
Vegetation	-	1
Soils/sed ingestion rate	kg/day	0.013
Body weight	kg	0.077
Use factor	-	0.67

C soil mg/kg	C Veg mg/kg	C Invert mg/kg	Soil Ingest mg/kg-day	Veg Ingest mg/kg-day
16	0.6794	5.559	1.79	2.21
18	0.7549	6.177	1.99	2.46
20	0.8388	6.863	2.21	2.73
22	0.9320	7.626	2.46	3.04
24	1.0356	8.473	2.73	3.37
27	1.1506	9.414	3.04	3.75
30	1.2785	10.460	3.37	4.17
33	1.4205	11.623	3.75	4.63
37	1.5784	12.914	4.17	5.14
41	1.7538	14.349	4.63	5.71
45	1.9486	15.943	5.14	6.35
51	2.1651	17.715	5.71	7.05
56	2.4057	19.683	6.35	7.84
62	2.6730	21.870	7.06	8.71
69	2.9700	24.300	7.84	9.68
77	3.3000	27.000	8.71	10.75
1649	70.6714	578.221	186.53	230.28
149	6	52	2.5E+01	5.0E+01
157	7	55	2.6E+01	5.3E+01
165	7	58	2.8E+01	5.5E+01
173	7	61	2.9E+01	5.8E+01

Checks Table H3-5

Invert Ingest mg/kg-day	ADD mg/kg/day	HQ NOAEL	HQ LOAEL
11.10	1.5E+01	1.4E+00	2.81E-01
12.34	1.7E+01	1.6E+00	3.12E-01
13.71	1.9E+01	1.8E+00	3.47E-01
15.23	2.1E+01	2.0E+00	3.85E-01
16.92	2.3E+01	2.2E+00	4.28E-01
18.80	2.6E+01	2.4E+00	4.76E-01
20.89	2.8E+01	2.7E+00	5.28E-01
23.21	3.2E+01	3.0E+00	5.87E-01
25.79	3.5E+01	3.3E+00	6.52E-01
28.66	3.9E+01	3.7E+00	7.25E-01
31.84	4.3E+01	4.1E+00	8.05E-01
35.38	4.8E+01	4.6E+00	8.95E-01
39.31	5.3E+01	5.1E+00	9.94E-01
43.68	5.9E+01	5.7E+00	1.10E+00
48.53	6.6E+01	6.3E+00	1.23E+00
53.92	7.3E+01	7.0E+00	1.36E+00
1154.78	1.6E+03	1.5E+02	2.92E+01
4.1E+02	4.9E+02	4.6E+01	9.04E+00
4.3E+02	5.1E+02	4.9E+01	9.49E+00
4.5E+02	5.4E+02	5.1E+01	9.97E+00
4.8E+02	5.6E+02	5.4E+01	1.05E+01

Ratio LOAEL/NOAEL

5.12E+00

	182	8	64	3.1E+01	6.1E+01
	191	8	67	3.2E+01	6.4E+01
	200	9	70	3.4E+01	6.7E+01
	210	9	74	3.5E+01	7.1E+01
	221	9	77	3.7E+01	7.4E+01
	232	10	81	3.9E+01	7.8E+01
	243	10	85	4.1E+01	8.2E+01
	256	11	90	4.3E+01	8.6E+01
	268	11	94	4.5E+01	9.0E+01
	282	12	99	4.8E+01	9.5E+01
	296	13	104	5.0E+01	9.9E+01
	311	13	109	5.2E+01	1.0E+02
	326	14	114	5.5E+01	1.1E+02
	342	15	120	5.8E+01	1.2E+02
	360	15	126	6.1E+01	1.2E+02
	378	16	132	6.4E+01	1.3E+02
	396	17	139	6.7E+01	1.3E+02
	416	18	146	7.0E+01	1.4E+02
	437	19	153	7.4E+01	1.5E+02
	459	20	161	7.7E+01	1.5E+02
	482	21	169	8.1E+01	1.6E+02
BERA Table H4-6	530	23	186	8.9E+01	1.8E+02
	557	24	195	9.4E+01	1.9E+02
	584	25	205	9.9E+01	2.0E+02
	614	26	215	1.0E+02	2.1E+02

5.0E+02	5.9E+02	5.6E+01	1.10E+01
5.2E+02	6.2E+02	5.9E+01	1.15E+01
5.5E+02	6.5E+02	6.2E+01	1.21E+01
5.8E+02	6.8E+02	6.5E+01	1.27E+01
6.1E+02	7.2E+02	6.8E+01	1.34E+01
6.4E+02	7.5E+02	7.2E+01	1.40E+01
6.7E+02	7.9E+02	7.5E+01	1.47E+01
7.0E+02	8.3E+02	7.9E+01	1.55E+01
7.4E+02	8.7E+02	8.3E+01	1.62E+01
7.7E+02	9.2E+02	8.7E+01	1.70E+01
8.1E+02	9.6E+02	9.2E+01	1.79E+01
8.5E+02	1.0E+03	9.6E+01	1.88E+01
9.0E+02	1.1E+03	1.0E+02	1.97E+01
9.4E+02	1.1E+03	1.1E+02	2.07E+01
9.9E+02	1.2E+03	1.1E+02	2.18E+01
1.0E+03	1.2E+03	1.2E+02	2.28E+01
1.1E+03	1.3E+03	1.2E+02	2.40E+01
1.1E+03	1.4E+03	1.3E+02	2.52E+01
1.2E+03	1.4E+03	1.4E+02	2.64E+01
1.3E+03	1.5E+03	1.4E+02	2.78E+01
1.3E+03	1.6E+03	1.5E+02	2.92E+01
1.5E+03	1.7E+03	1.6E+02	3.21E+01
1.5E+03	2.8E+02	2.7E+01	5.22E+00
1.6E+03	3.0E+02	2.8E+01	5.48E+00
1.7E+03	3.1E+02	3.0E+01	5.76E+00

Cell: I27
Comment: Dennis Smith:
Checks Table H4-6

Cell: I45
Comment: Dennis Smith:
Vs 6.9 Table H5-1 ~ same

Cell: I72
Comment: Dennis Smith:
Checks BERA Table H4-6

	Short tailed shrew	American robin
PCB–TEQ Congeners (mammals)		
PCDDF-TEQ Congeners (mammals)		
Total PCBs		
Methyl mercury		
Selenium		

Meadow-vole		EPC average
Total PCBs	0.1	3.1
PCB–TEQ Congeners (mammals)	0.2	1.70E-04
PCDDF-TEQ Congeners (mammals)	3.4	1.30E-04
Methyl mercury	9	
Selenium	2.4	

Short-tailed shrew	**NOAEL HQ**	**LOAEL HQ**	
Total PCBs	3.2	1.6	3.1
PCB–TEQ Congeners (mammals)	54	6.8	1.70E-04
PCDDF-TEQ Congeners (mammals)	16	2.6	1.30E-04
Total PAH	8.80E-04	0.24	
Barium	4.2	1.6	
Cadmium	26	3.8	
Chromium	130	22	
Lead	27	7.5	
Methyl mercury	74	15	
Selenium	22	10	
Vanadium	21	10	
Zinc	6.2	0.77	

American robin	**NOAEL HQ**	**LOAEL HQ**	EPC average
Total PCBs	4.1	0.56	3.1
PCB–TEQ Congeners (avian)	46	4.6	
PCDDF-TEQ Congeners (avian)	47	4.7	
Total PAHs	7.8	0.78	
Barium	23	12	
Cadmium	33	11	
Lead	180	34	
Methyl mercury	53	41	
Selenium	32	14	
Vanadium	35	17	
Zinc	25	15	

Source: NOAEL and LOAEL HQs based on Terrestrial - Within GSNWR Mean EPCs in BERA Appendix H (Integral Consulting 2018).