Instream Water Quality Values (ISWQV) Calculations - Site-specific Scenario (11 fish n

(Based on 1E-5 Target Risk)

Fish tissue concentrations are net values for BCK 0.5 and BCK 3.3 combined.

(negative net concentrations were treated the same as non-detect values and handled by the interna

11 Fish Meals/Year - Site-Specific ISWQV

Radionuclide	Food Ingestion Slope Factor (risk/pCi)	Ingestion Rate (g/meal) [8-oz fish meal]	Fish Meals per year	Ingestion rate (g/yr)	Years of Exposure	Fish Tissue Concentration* (pCi/g)	Calculated Baseline Risk (ELCR)	Target Risk
H-3	1.44E-13	227	11	2.50E+03	26	0.534	4.99E-09	1.00E-05
C-14	2.00E-12	227	11	2.50E+03	26	0	0.00E+00	1.00E-05
Cl-36	4.44E-12	227	11	2.50E+03	26	0	0.00E+00	1.00E-05
Co-60	2.23E-11	227	11	2.50E+03	26	0.007	1.01E-08	9.99E-06
Sr-90	6.88E-11	227	11	2.50E+03	26	0.08	3.57E-07	1.00E-05
Tc-99	4.00E-12	227	11	2.50E+03	26	0	0.00E+00	1.00E-05
I-129	1.97E-10	227	11	2.50E+03	26	0	0.00E+00	1.00E-05
Cs-137	3.74E-11	227	11	2.50E+03	26	0	0.00E+00	1.00E-05
Eu-154	1.42E-11	227	11	2.50E+03	26	0.022	2.03E-08	1.00E-05
Pb-210	1.18E-09	227	11	2.50E+03	26	0.068	5.21E-06	4.79E-06
Ra-226	5.14E-10	227	11	2.50E+03	26	0.159	5.31E-06	4.69E-06
Ra-228	1.42E-09	227	11	2.50E+03	26	0.098	9.03E-06	9.65E-07
Th-228	1.48E-10	227	11	2.50E+03	26	0	0.00E+00	1.00E-05
Th-230	1.19E-10	227	11	2.50E+03	26	0.01	7.73E-08	9.92E-06
Th-232	1.33E-10	227	11	2.50E+03	26	9.30E-04	8.03E-09	9.99E-06
U-233/U-234	9.55E-11	227	11	2.50E+03	26	0	0.00E+00	1.00E-05
U-235/U-236	8.99E-11	227	11	2.50E+03	26	0.001	5.84E-09	1.00E-05
Np-237	8.29E-11	227	11	2.50E+03	26	0	0.00E+00	1.00E-05
U-238	8.66E-11	227	11	2.50E+03	26	2.70E-04	1.52E-09	1.00E-05
Pu-238	1.69E-10	227	11	2.50E+03	26	0.002	2.19E-08	1.00E-05
Pu-239	1.74E-10	227	11	2.50E+03	26	0.002	2.26E-08	1.00E-05
Am-241	1.34E-10	227	11	2.50E+03	26	0.004	3.48E-08	1.00E-05

***Fish tissue statistical methodology currently under review and discussion.**

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Fish tissue PRG (pCi/g)	EPA Default Bioconcentration Factor (pCi/kg per pCi/L)	ISWQV assuming no assimilative capacity) (pCi/L)
1.07E+03	9.00E-01	1.19E+06
7.70E+01	4.00E+05	1.93E-01
3.47E+01	4.70E+01	7.38E+02
6.91E+00	7.60E+01	9.09E+01
2.24E+00	2.90E+00	7.72E+02
3.85E+01	1.50E+01	2.57E+03
7.82E-01	3.00E+01	2.61E+01
4.12E+00	2.50E+03	1.65E+00
1.08E+01	1.30E+02	8.34E+01
1.31E-01	2.50E+01	5.22E+00
3.00E-01	4.00E+00	7.49E+01
1.08E-01	4.00E+00	2.71E+01
1.04E+00	6.00E+00	1.73E+02
1.29E+00	6.00E+00	2.16E+02
1.16E+00	6.00E+00	1.93E+02
1.61E+00	9.60E-01	1.68E+03
1.71E+00	9.60E-01	1.78E+03
1.86E+00	3.00E+01	6.19E+01
1.78E+00	9.60E-01	1.85E+03
9.11E-01	2.10E+04	4.34E-02
8.85E-01	2.10E+04	4.22E-02
1.15E+00	2.40E+02	4.79E+00

Cell: B14
Comment: [Threaded comment]

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Comment:
Since Y-90 is present Sr-90 has a short half-life (64 hours). Should use Sr-90+D (9.53e-11) unless can justify absence of Y-90 (very unlikely).

Cell: B19
Comment: [Threaded comment]

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Comment:
SF (3.44e-9) based on Pb-210+D to account for Bi-210 and Po-210, etc.

Cell: B22
Comment: [Threaded comment]

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Comment:
Thorium series is complex. No +D because no immediate progeny with a short half-life and the next in decay series is Ra-228 (6 yrs). Since Th-228 has several short-lived progeny on order of days/hours or less, the Th-228+D is about 3X greater than Th-228 alone (SF 4.22e-10)

Cell: B26
Comment: [Threaded comment]

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Comment:
U-235 has a couple short-lived progeny accounted for in the SF for U-235+D

Instream Water Quality Values (ISWQV) Calculations - Default Scenario (34 fish meals/

(Based on 1E-5 Target Risk)

Fish tissue concentrations are net values for BCK 0.5 and BCK 3.3 combined.

(negative net concentrations were treated the same as non-detect values and handled by the internal

34 Fish Meals/Year - Default CWA ISWQV (equivalent to 22 g/day)

Radionuclide	Food Ingestion Slope Factor (risk/pCi)	Ingestion Rate (g/meal) [8-oz fish meal]	Fish Meals per year	Ingestion rate (g/yr)	Years of Exposure	Fish Tissue Concentration* (pCi/g)	Baseline Risk
H-3	1.44E-13	227	34	7.70E+03	70	0.534	4.14E-08
C-14	2.00E-12	227	34	7.70E+03	70	0	0.00E+00
Cl-36	4.44E-12	227	34	7.70E+03	70	0	0.00E+00
Co-60	2.23E-11	227	34	7.70E+03	70	0.007	8.41E-08
Sr-90	6.88E-11	227	34	7.70E+03	70	0.08	2.97E-06
Tc-99	4.00E-12	227	34	7.70E+03	70	0	0.00E+00
I-129	1.97E-10	227	34	7.70E+03	70	0	0.00E+00
Cs-137	3.74E-11	227	34	7.70E+03	70	0	0.00E+00
Eu-154	1.42E-11	227	34	7.70E+03	70	0.022	1.68E-07
Pb-210	1.18E-09	227	34	7.70E+03	70	0.068	4.32E-05
Ra-226	5.14E-10	227	34	7.70E+03	70	0.159	4.40E-05
Ra-228	1.42E-09	227	34	7.70E+03	70	0.098	7.50E-05
Th-228	1.48E-10	227	34	7.70E+03	70	0	0.00E+00
Th-230	1.19E-10	227	34	7.70E+03	70	0.01	6.41E-07
Th-232	1.33E-10	227	34	7.70E+03	70	9.30E-04	6.67E-08
U-233/U-234	9.55E-11	227	34	7.70E+03	70	0	0.00E+00
U-235/U-236	8.99E-11	227	34	7.70E+03	70	0.001	4.85E-08
Np-237	8.29E-11	227	34	7.70E+03	70	0	0.00E+00
U-238	8.66E-11	227	34	7.70E+03	70	2.70E-04	1.26E-08
Pu-238	1.69E-10	227	34	7.70E+03	70	0.002	1.82E-07
Pu-239	1.74E-10	227	34	7.70E+03	70	0.002	1.88E-07
Am-241	1.34E-10	227	34	7.70E+03	70	0.004	2.89E-07

***Fish tissue statistical methodology currently under review and discussion.**

year)

·ules of the ProUCL software)

Target Risk	Fish tissue PRG (pCi/g)	EPA Default Bioconcentration Factor (pCi/kg per pCi/L)	ISWQV assuming no assimilative capacity) (pCi/L)
1.00E-05	1.29E+02	9.00E-01	1.43E+05
1.00E-05	9.28E+00	4.00E+05	2.32E-02
1.00E-05	4.18E+00	4.70E+01	8.89E+01
1.00E-05	8.32E-01	7.60E+01	1.09E+01
1.00E-05	2.70E-01	2.90E+00	9.30E+01
1.00E-05	4.64E+00	2.00E+01	2.32E+02
1.00E-05	9.42E-02	3.00E+01	3.14E+00
1.00E-05	4.96E-01	2.50E+03	1.98E-01
1.00E-05	1.31E+00	1.30E+02	1.01E+01
1.00E-05	1.57E-02	2.50E+01	6.29E-01
1.00E-05	3.61E-02	4.00E+00	9.02E+00
1.00E-05	1.31E-02	4.00E+00	3.27E+00
1.00E-05	1.25E-01	6.00E+00	2.09E+01
1.00E-05	1.56E-01	6.00E+00	2.60E+01
1.00E-05	1.39E-01	6.00E+00	2.32E+01
1.00E-05	1.94E-01	9.60E-01	2.02E+02
1.00E-05	2.06E-01	9.60E-01	2.15E+02
1.00E-05	2.24E-01	3.00E+01	7.46E+00
1.00E-05	2.14E-01	9.60E-01	2.23E+02
1.00E-05	1.10E-01	2.10E+04	5.23E-03
1.00E-05	1.07E-01	2.10E+04	5.08E-03
1.00E-05	1.38E-01	2.40E+02	5.77E-01