From:	DeCair, Sara
To:	Cardarelli, John; Hudson, Scott; Ellis, Jerry; Hernandez-Quinones, Samuel; Kudarauskas, Paul; Walker, Stuart; Nguyen, Lyndsey; Kappelman, David; Telofski, Scott
Subject:	Spreadsheet for tomorrow"s webinar on drinking water PAG DRL derivation
Date:	Monday, August 17, 2015 1:21:36 PM
Attachments:	PAG DRLs Calcs for OSWER.xlsx

All, please see the attached spreadsheet for tomorrow's webinar. We'll also walk through the derivation and discuss assumptions with you. I'm putting a webinar link and phone bridge on the invitation in a minute. Talk to you tomorrow,

Sara

From: Hernandez-Quinones, Samuel
Sent: Monday, August 17, 2015 11:50 AM
To: DeCair, Sara
Subject: Fw: Draft Drinking Water PAG for OSWER review

Hi Sara,

I think you can send this file to Cardilleri. This is the same document that was sent to Mr Scozzafava.
Thank You

Sam
==========
Samuel Hernández Quiñones, P.E.
Environmental Engineer
Environmental Protection Agency
Office of Water
1200 Pennsylvania Ave. NW
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202-564-1735
"USEPA Protecting Human Health and the Environment"

From: Hernandez-Quinones, Samuel
Sent: Monday, June 29, 2015 9:06 AM
To: Scozzafava, MichaelE; DeCair, Sara
Cc: Stalcup, Dana; Veal, Lee; Fitz-James, Schatzi; Christ, Lisa; Cogliano, Gerain; Kudarauskas, Paul
Subject: Re: Draft Drinking Water PAG for OSWER review

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Hi,

The table with derived concentrations is attached. Let me know if you have any questions.

Sam

==========

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From: Scozzafava, MichaelE
Sent: Monday, June 29, 2015 8:09 AM
To: Hernandez-Quinones, Samuel; DeCair, Sara
Cc: Stalcup, Dana; Veal, Lee; Fitz-James, Schatzi; Christ, Lisa; Cogliano, Gerain; Kudarauskas, Paul
Subject: RE: Draft Drinking Water PAG for OSWER review

Good Morning Sam and Sara,
Just wanted to check back in to see if you are able to send this Table? Our RAD expert is out after today and was hoping to make a lot of progress on our review today.
Thanks and hope you had a great weekend.
Mike

Michael Scozzafava, Chief
Science Policy Branch
OSRTI, OSWER
p: 703-603-8833
cell: 202-407-2555

From: Hernandez-Quinones, Samuel
Sent: Thursday, June 25, 2015 2:03 PM
To: Scozzafava, MichaelE; DeCair, Sara
Cc: Stalcup, Dana; Veal, Lee; Fitz-James, Schatzi; Christ, Lisa; Cogliano, Gerain; Kudarauskas, Paul
Subject: RE: Draft Drinking Water PAG for OSWER review

Hi Mr. Scozzafava,
We included derived concentrations for 3 radionuclides (I-131, Cs-137, & Sr-90) of interest in Table #1 of Section 7. We intend to provide a more comprehensive list of radionuclides likely

to occur following a radiation contamination incident once the proposal is issued. We did not wanted to overwhelm the readers of this chapter with a large table of derived concentrations. If needed to support your organization's review we can provide a Table with the derived concentrations of other Radionuclides as we have this information ready and available.

Thank You

Sam

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From: Scozzafava, MichaelE
Sent: Thursday, June 25, 2015 1:52 PM
To: DeCair, Sara; Hernandez-Quinones, Samuel
Cc: Stalcup, Dana; Veal, Lee; Fitz-James, Schatzi; Christ, Lisa; Cogliano, Gerain; Kudarauskas, Paul
Subject: RE: Draft Drinking Water PAG for OSWER review

Sara and Samuel,

Thank you for the very informative presentation on Tuesday. We look forward to reviewing the document and providing comments.

In our initial scan of the document that was sent to Jim Woolford yesterday, we noticed that it did not include a table of concentrations correlating to the 100/500 mrem/yr drinking water PAG. Do you have that information and can you provide it? We think it's important to see as part of our review.

Thanks in advance for your consideration and have a great day.

Mike

Michael Scozzafava, Chief
Science Policy Branch
OSRTI, OSWER
p: 703-603-8833
cell: 202-407-2555

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Isotope	DRLs for Pregnant Women and Children Age 15 and Younger – 100 mrem Dose (pCi/L)	DRLs for Adults (Excluding Pregnant Women) – 500 mrem Dose
Sr-90/Y-90	1,000	7,415
Cs-137	6,140	16,569
I-131	1,314	10,337
Ba-140	12,191	86,669
Ba-141	507,432	3,223,742
Ba-142	1,079,884	6,383,557
Ce-141	47,744	316,933
Ce-143	31,014	201,196
Ce-144	5,856	43,086
Co-58	52,745	300,854
Co-58m	1,738,134	9,350,189
Cs-134	4,330	11,736
Cs-134m	1,846,088	11,210,923
Cs-137	6,140	16,569
Cs-138	365,734	2,452,008
I-131	1,314	10,337
I-133	5,863	52,649
I-134	343,078	2,086,477
I-135	28,822	241,005
La-141	90,368	629,440
La-142	206,212	1,238,129
Mn-54	70,105	312,105
Mn-56	145,198	880,233
Mo-99	70,874	372,462
Mo-101	804,312	5,429,869
Nb-95	76,751	383,231
Rb-89	717,923	4,814,948
Ru-103	54,680	307,002
Ru-106	4,621	32,145
Sb-128	56,453	295,334
Sb-129	90,791	532,718
Sb-130	425,553	2,452,008
Sb-131	353,931	2,187,763
Sn-128	236,389	1,453,804
Sr-89	10,799	87,681
Sr-90	1,043	8,135
Sr-91	66,319	346,676
Sr-92	98,998	528,966
Tc-101	1,608,624	11,986,146
Tc-104	380,077	2,813,228
Te-131	385,925	2,575,309
Te-131m	17,448	115,559
Te-132	8,010	59,144

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Te-133	417,790	3,112,425
Te-133m	106,732	796,253
Te-134	347,627	2,086,477
Y-91	14,046	95,080
Y-92	65,820	455,231
Y-93	28,506	195,947
Y-94	391,199	2,764,902
Y-95	680,138	4,866,945
Zr-95	44,646	234,484
Zr-97	17,385	108,860

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	DRL - Corresponding Concentration of Isotope in Drinking Water (pCi/L)						Most Limiting Concentration for Sensitive Population (pCi/L)
Isotope	Infant	1 y old	5 y old	10 y old	15 y old	Adult	
Sr-90/Y-90	1,501	3,594	2,402	1,557	1,000	7,415	1,000
Cs-137	18,373	26,778	14,099	10,112	6,140	16,569	6,140
I-131	2,107	1,855	1,314	1,949	2,406	10,337	1,314
Ba-140	12,191	18,550	14,882	17,519	22,117	86,669	12,191
Ba-141	507,432	700,522	583,835	762,188	956,674	3,223,742	507,432
Ba-142	1,079,884	1,509,306	1,219,797	1,542,798	1,878,401	6,383,557	1,079,884
Ce-141	47,744	64,475	52,748	65,892	92,860	316,933	47,744
Ce-143	31,014	41,146	33,650	42,030	58,767	201,196	31,014
Ce-144	5,856	8,558	7,042	8,881	12,638	43,086	5,856
Co-58	52,745	74,450	52,952	60,078	72,809	300,854	52,745
Co-58m	1,967,911	2,142,241	1,738,134	2,163,839	2,927,899	9,350,189	1,738,134
Cs-134	15,026	21,150	10,350	7,243	4,330	11,736	4,330
Cs-134m	1,846,088	2,790,314	2,319,479	2,918,092	3,344,470	11,210,923	1,846,088
Cs-137	18,373	26,778	14,099	10,112	6,140	16,569	6,140
Cs-138	365,734	559,945	466,271	600,784	703,196	2,452,008	365,734
I-131	2,107	1,855	1,314	1,949	2,406	10,337	1,314
I-133	7,864	7,547	5,863	9,727	12,099	52,649	5,863
I-134	343,078	443,914	352,106	484,044	571,347	2,086,477	343,078
I-135	37,277	37,142	28,822	46,636	57,135	241,005	28,822
La-141	90,368	126,254	105,090	134,386	182,831	629,440	90,368
La-142	206,212	291,270	233,534	289,329	359,275	1,238,129	206,212
Mn-54	70,105	103,765	71,527	78,564	92,755	312,105	70,105
Mn-56	145,198	196,478	159,600	198,703	255,509	880,233	145,198
Mo-99	70,874	94,871	77,185	94,568	108,255	372,462	70,874
Mo-101	804,312	1,234,377	1,027,198	1,331,593	1,561,176	5,429,869	804,312
Nb-95	84,831	104,417	76,751	88,046	111,181	383,231	76,751
Rb-89	717,923	1,099,495	910,782	1,178,007	1,380,436	4,814,948	717,923
Ru-103	54,680	71,717	55,991	67,193	89,623	307,002	54,680
Ru-106	4,621	6,681	5,421	6,809	9,522	32,145	4,621
Sb-128	61,245	73,625	56,453	66,754	86,241	295,334	56,453
Sb-129	90,791	116,100	93,573	115,797	155,527	532,718	90,791
Sb-130	425,553	612,634	487,919	600,784	709,258	2,452,008	425,553
Sb-131	365,734	457,996	353,931	479,499	579,394	2,187,763	353,931
Sn-128	236,389	339,864	274,884	343,883	421,918	1,453,804	236,389
Sr-89	10,799	18,550	15,385	17,489	20,724	87,681	10,799
Sr-90	1,708	4,586	2,913	1,711	1,043	8,135	1,043
Sr-91	74,697	82,190	66,319	82,365	110,732	346,676	66,319
Sr-92	112,697	121,629	98,998	123,648	169,637	528,966	98,998
Tc-101	1,608,624	2,635,297	2,221,419	2,901,512	3,428,082	11,986,146	1,608,624
Tc-104	380,077	626,505	525,451	680,888	806,608	2,813,228	380,077
Te-131	431,713	506,170	385,925	543,262	658,192	2,575,309	385,925
Te-131m	19,097	23,549	17,448	23,533	30,027	115,559	17,448

Te-132	8,010	11,180	8,647	12,217	15,582	59,144	8,010
Te-133	458,791	524,561	417,790	638,333	776,170	3,112,425	417,790
Te-133m	123,073	136,085	106,732	161,859	199,694	796,253	106,732
Te-134	349,260	438,636	347,627	472,839	567,407	2,086,477	347,627
Y-91	14,046	18,866	15,578	19,641	27,984	95,080	14,046
Y-92	65,820	92,235	76,751	98,205	132,273	455,231	65,820
Y-93	28,506	38,745	32,145	40,691	57,135	195,947	28,506
Y-94	391,199	605,926	511,675	667,537	791,096	2,764,902	391,199
Y-95	680,138	1,057,476	898,798	1,176,650	1,389,763	4,866,945	680,138
Zr-95	45,396	58,666	44,646	52,919	68,562	234,484	44,646
Zr-97	17,385	22,900	18,587	23,055	31,889	108,860	17,385

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