Table 20.- Expected dispersal of fission products in fallout from Project Chariot, Case III [1/]

[Quantities are mean values for the respective areas, assuming 15 days decay]

Basin or area	Ogotoruk Creek	Nusoaruk Creek	Minor basins, Ogotoruk Creek to Cape Seppings	Kukpuk River above Ipewik River	Minor basins, Cape Seppings to Kivalina River	Ipewik River	Kivalina River	Pitmegea River	Wulik River	Kukpowruk River	Noatak River	Minor basins, Pitmegea River to Kukpowruk River	Outlying areas
Number on Plate 1	0	1	2	3	4	5	6	7	8	9	10	11	. . .
Fallout between azimuths 40° and 125° (Case III.a)													
Products dissolved in runoff													
Average concentration [2/], μc/ml													
Sr^{90}	$3.2x10^{-7}$	$2.3x10^{-8}$	$8.0x10^{-8}$	$3.3x10^{-9}$	$4.0x10^{-10}$	$8.8x10^{-10}$	$1.5x10^{-10}$	$2.2x10^{-10}$	$1.5x10^{-10}$	$2.2x10^{-10}$	(a)	$1.1x10^{-10}$	$< 1.1x10^{-10}$
I^{131}	$8.7x10^{-4}$	$7.0x10^{-5}$	$2.1x10^{-4}$	$7.2x10^{-6}$	$6.5x10^{-7}$	$1.7x10^{-6}$	$2.8x10^{-7}$	$3.6x10^{-7}$	$3.5x10^{-7}$	$5.4x10^{-7}$	(a)	$1.2x10^{-7}$	$< 2.2x10^{-7}$
Cs^{137}	$1.7x10^{-7}$	$1.3x10^{-8}$	$4.3x10^{-8}$	$1.9x10^{-9}$	$2.4x10^{-10}$	$4.9x10^{-10}$	$9.3x10^{-11}$	$1.2x10^{-10}$	$8.0x10^{-11}$	$1.2x10^{-10}$	(a)	$6.7x10^{-11}$	$< 6.2x10^{-11}$
Other nuclides	$5.2x10^{-6}$	$3.9x10^{-7}$	$1.3x10^{-6}$	$5.3x10^{-8}$	$6.2x10^{-9}$	$1.4x10^{-8}$	$2.4x10^{-9}$	$3.4x10^{-9}$	$2.4x10^{-9}$	$3.5x10^{-9}$	(a)	$1.7x10^{-9}$	$< 1.8x10^{-9}$
Sub-total	$9.9x10^{-4}$	$7.0x10^{-5}$	$2.1x10^{-4}$	$7.3x10^{-6}$	$6.6x10^{-7}$	$1.7x10^{-6}$	$2.8x10^{-7}$	$3.6x10^{-7}$	$3.5x10^{-7}$	$5.4x10^{-7}$	(a)	$1.2x10^{-7}$	$<2.2x10^{-7}$
Insoluble, particulate products suspended in runoff.													
Percentage assumed transported	2.5	2.5	5	12.5	17.5	17.5	17.5	25	25	25	. . .	25	25
Average concentration [2/], μc/ml													
Sr^{90} and Cs^{137}, each	$1.7x10^{-5}$	$9.8x10^{-7}$	$9.4x10^{-6}$	$1.3x10^{-6}$	$3.0x10^{-7}$	$5.4x10^{-7}$	$1.0x10^{-7}$	$2.3x10^{-7}$	$1.1x10^{-7}$	$1.5x10^{-7}$	(a)	$1.5x10^{-7}$	$< 9.8x10^{-8}$
I^{131}	$3.6x10^{-3}$	$2.0x10^{-4}$	$2.0x10^{-3}$	$2.7x10^{-4}$	$6.2x10^{-5}$	$1.1x10^{-4}$	$2.1x10^{-5}$	$4.8x10^{-5}$	$2.3x10^{-5}$	$3.0x10^{-5}$	(a)	$3.1x10^{-5}$	$<2.0x10^{-5}$
Other nuclides	$8.1x10^{-3}$	$4.6x10^{-4}$	$4.4x10^{-3}$	$6.2x10^{-4}$	$1.4x10^{-4}$	$2.5x10^{-4}$	$4.8x10^{-5}$	$1.1x10^{-4}$	$5.1x10^{-5}$	$6.9x10^{-5}$	(a)	$7.0x10^{-5}$	$< 4.6x10^{-5}$
Sub-total	$1.2x10^{-2}$	$6.6x10^{-4}$	$6.4x10^{-3}$	$8.9x10^{-4}$	$2.0x10^{-4}$	$3.6x10^{-4}$	$6.9x10^{-5}$	$1.6x10^{-4}$	$7.4x10^{-5}$	$9.9x10^{-5}$	(a)	$1.0x10^{-4}$	$<6.6x10^{-5}$
Total stream burden, dissolved and suspended [3/].	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Products adsorbed, c/mi^2 [4/]	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Dissolved products infiltrated to soil water, c/mi^2.													
Sr^{90}	$6.8x10^{-2}$	$4.9x10^{-3}$	$1.7x10^{-2}$	$6.9x10^{-4}$	$8.4x10^{-5}$	$1.9x10^{-4}$	$3.1x10^{-5}$	$4.7x10^{-5}$	$3.2x10^{-5}$	$4.7x10^{-5}$	(a)	$2.4x10^{-5}$	$< 2.3x10^{-5}$
I^{131}	$1.9x10^{2}$	$1.5x10^{1}$	$4.4x10^{1}$	$1.5x10^{0}$	$1.4x10^{-1}$	$3.7x10^{-1}$	$6.0x10^{-2}$	$7.6x10^{-2}$	$7.5x10^{-2}$	$1.2x10^{-1}$	(a)	$2.6x10^{-2}$	$< 4.7x10^{-2}$
Cs^{137}	$3.6x10^{-2}$	$2.8x10^{-3}$	$9.1x10^{-3}$	$3.9x10^{-4}$	$5.0x10^{-5}$	$1.0x10^{-4}$	$1.9x10^{-5}$	$2.6x10^{-5}$	$1.7x10^{-5}$	$2.5x10^{-5}$	(a)	$1.4x10^{-5}$	$< 1.3x10^{-5}$
Other nuclides	$1.1x10^{0}$	$8.2x10^{-2}$	$2.7x10^{-1}$	$1.1x10^{-2}$	$1.3x10^{-3}$	$2.9x10^{-3}$	$5.0x10^{-4}$	$7.1x10^{-4}$	$5.0x10^{-4}$	$7.4x10^{-4}$	(a)	$3.6x10^{-4}$	$< 3.7x10^{-4}$
Sub-total	$1.8x10^{2}$	$1.5x10^{1}$	$4.4x10^{1}$	$1.5x10^{0}$	$1.4x10^{-1}$	$3.7x10^{-1}$	$6.1x10^{-2}$	$7.7x10^{-2}$	$7.6x10^{-2}$	$1.2x10^{-1}$	(a)	$2.6x10^{-2}$	$<4.7x10^{-2}$
Insoluble, particulate products remaining near place of fall, c/mi^2.													
Sr^{90} and Cs^{137}, each	$3.1x10^{1}$	$1.8x10^{0}$	$8.2x10^{0}$	$4.3x10^{-1}$	$6.5x10^{-2}$	$1.2x10^{-1}$	$2.2x10^{-2}$	$3.2x10^{-2}$	$1.5x10^{-2}$	$2.0x10^{-2}$	(a)	$2.0x10^{-2}$	$< 1.4x10^{-2}$
I^{131}	$6.4x10^{3}$	$3.6x10^{2}$	$1.7x10^{3}$	$8.8x10^{1}$	$1.3x10^{1}$	$2.4x10^{1}$	$4.6x10^{0}$	$6.7x10^{0}$	$3.1x10^{0}$	$4.2x10^{0}$	(a)	$4.2x10^{0}$	$< 2.8x10^{0}$
Other nuclides	$1.5x10^{4}$	$8.2x10^{2}$	$3.9x10^{3}$	$2.0x10^{2}$	$3.0x10^{1}$	$5.5x10^{1}$	$1.0x10^{1}$	$1.5x10^{1}$	$7.1x10^{0}$	$9.5x10^{0}$	(a)	$9.7x10^{0}$	$< 6.3x10^{0}$
Sub-total	$2.1x10^{4}$	$1.2x10^{3}$	$5.6x10^{3}$	$2.9x10^{2}$	$4.3x10^{1}$	$7.9x10^{1}$	$1.5x10^{1}$	$2.2x10^{1}$	$1.0x10^{1}$	$1.4x10^{1}$	(a)	$1.4x10^{1}$	$< 9.1x10^{0}$

1/ Assumptions: (1) Detonation in early August, following two months of minimum precipitation with accumulated soil-water deficiency of 1.0 inch. (2) In 30 days following detonation, precipitation 2.5 inches, generating runoff of 0.7 inch*. (3) Adsorption scaled to mean "Kd's" as explained in text.

2/ Average during the 30 days following detonation, in trunk streams at outer margin of the area of measurable fallout. It is expected that throwout will dam Ogotoruk Creek and pond the runoff in the lower part of that basin, at least temporarily.

3/ Concentration of dissolved products being inconsequential, total stream burden is essentially that of suspended products, as shown above.

4/ Quantities essentially equal to those of Case II, as given in Table 19.

a/ Zero or nominal.

*Average in Ogotoruk Creek, 23 cfs.

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