

**WORK SHEET FOR SCREENING CALCULATIONS
TO DETERMINE IF A PART 380 PERMIT IS REQUIRED
FOR RADIOACTIVE EMISSIONS TO THE AIR**

FACILITY _____ **Emission Point #** _____

	A	B	C	D	E
1. Radionuclide	_____	_____	_____	_____	_____
form	_____	_____	_____	_____	_____
2. Yearly Discharge before treatment A_{before} ($\mu\text{Ci}/\text{yr}$)	_____	_____	_____	_____	_____ $\mu\text{Ci}/\text{yr}$
[Only consider discharges <u>before</u> effluent treatment]					
3. Flow Rate F (cfm)	_____	_____	_____	_____	_____ cfm
4. Yearly Air Flow Volume $V = F * 1.49 \text{ E}+10 \text{ ml}/\text{yr}$	_____	_____	_____	_____	_____ ml/yr
5. Annual Average Concentration $C_{\text{before}} = A_{\text{before}}/V$ ($\mu\text{Ci}/\text{ml}$)	_____	_____	_____	_____	_____ $\mu\text{Ci}/\text{ml}$
6. Table II (T) Column 1 Concentrations from Section 380-11	_____	_____	_____	_____	_____ $\mu\text{Ci}/\text{ml}$
7. Ratio of Annual Avg Conc divided by Table II concentration $R = C_{\text{before}}/T$	_____	_____	_____	_____	_____
8. For Multiple Radionuclides: Sum-of-Ratios					
	$R_A + R_B + R_C + R_D + R_E =$ _____ $+$ _____ $+$ _____ $+$ _____ $+$ _____ $=$ _____				
9. Is #7 > 0.1? _____ yes _____ no					
Is #8 > 0.1? _____ yes _____ no					

If the answer to #9 is "no" (<0.1), a Part 380 permit is not required.

If the answer to #9 is "yes" (> 0.1), then a Part 380 permit is required. Contact the Radiation Section at (518) 457-2225 for information on how to apply for a Part 380 Radiation Control Permit.

- SAMPLE: PERMIT NEEDED -

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FACILITY Company XYZ Emission Point # 01

	A	B	C	D	E
1. Radionuclide form	<u>H-3</u> <u>water</u>	<u>C-14</u> <u>dioxide</u>	<u>I-125</u> <u>compounds</u>	_____	_____
2. Yearly Discharge before treatment A_{before} ($\mu\text{Ci}/\text{yr}$)	<u>500</u>	<u>2000</u>	<u>5000</u>	_____	_____ $\mu\text{Ci}/\text{yr}$
[Only consider discharges <u>before</u> effluent treatment]					
3. Flow Rate F (cfm)	<u>350</u>	<u>350</u>	<u>350</u>	_____	_____ cfm
4. Yearly Air Flow Volume $V = F * 1.49 \text{ E} + 10 \text{ ml}/\text{yr}$	<u>5.2E12</u>	<u>5.2E12</u>	<u>5.2E12</u>	_____	_____ ml/yr
5. Annual Average Concentration $C_{before} = A_{before}/V$ ($\mu\text{Ci}/\text{ml}$)	<u>9.6E-11</u>	<u>3.8E-10</u>	<u>9.6E-10</u>	_____	_____ $\mu\text{Ci}/\text{ml}$
6. Table II (T) Column 1 Concentrations from Section 380-11	<u>1E-7</u>	<u>3E-7</u>	<u>3E-10</u>	_____	_____ $\mu\text{Ci}/\text{ml}$
7. Ratio of Annual Avg Conc divided by Table II concentration $R = C_{before}/T$	<u>9.6E-4</u>	<u>1.3E-3</u>	<u>3.2</u>	_____	_____
8. For Multiple Radionuclides: Sum-of-Ratios					
	$R_A + R_B + R_C + R_D + R_E = \underline{9.6E-4} + \underline{1.3E-3} + \underline{3.2} + \underline{\quad} + \underline{\quad} = \underline{3.2}$				
9. Is #7 > 0.1?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no			
Is #8 > 0.1?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no			

If the answer to #9 is "no" (<0.1), a Part 380 permit is not required.

If the answer to #9 is "yes" (> 0.1), then a Part 380 permit is required. Contact the Radiation Section at (518) 457-2225 for information on how to apply for a Part 380 Radiation Control Permit.

- SAMPLE : NO PERMIT NEEDED -

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FACILITY Company XYZ Emission Point # 02

	A	B	C	D	E
1. Radionuclide	<u>S-35</u>	<u>C-14</u>	_____	_____	_____
form	<u>VAPOR</u>	<u>compounds</u>	_____	_____	_____
2. Yearly Discharge before treatment A_{before} ($\mu\text{Ci}/\text{yr}$)	<u>50</u>	<u>100</u>	_____	_____	_____ $\mu\text{Ci}/\text{yr}$
[Only consider discharges before effluent treatment]					
3. Flow Rate F (cfm)	<u>300</u>	<u>300</u>	_____	_____	_____ cfm
4. Yearly Air Flow Volume $V = F * 1.49 \text{ E} + 10 \text{ ml}/\text{yr}$	<u>$4.47 \text{ E} 12$</u>	<u>$4.47 \text{ E} 12$</u>	_____	_____	_____ ml/yr
5. Annual Average Concentration $C_{before} = A_{before}/V$ ($\mu\text{Ci}/\text{ml}$)	<u>$1.1 \text{ E} - 11$</u>	<u>$2.2 \text{ E} - 11$</u>	_____	_____	_____ $\mu\text{Ci}/\text{ml}$
6. Table II (T) Column 1 Concentrations from Section 380-11	<u>$2 \text{ E} - 8$</u>	<u>$3 \text{ E} - 9$</u>	_____	_____	_____ $\mu\text{Ci}/\text{ml}$
7. Ratio of Annual Avg Conc divided by Table II concentration $R = C_{before}/T$	<u>$5.5 \text{ E} - 4$</u>	<u>$7.3 \text{ E} - 3$</u>	_____	_____	_____
8. For Multiple Radionuclides: Sum-of-Ratios					
	$R_A + R_B + R_C + R_D + R_E = \underline{5.5 \text{ E} - 4} + \underline{7.3 \text{ E} - 3} + \underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{7.9 \text{ E} - 3}$				
9. Is #7 > 0.1?	_____ yes	<input checked="" type="checkbox"/> no			
Is #8 > 0.1?	_____ yes	<input checked="" type="checkbox"/> no			

If the answer to #9 is "no" (<0.1), a Part 380 permit is not required.

If the answer to #9 is "yes" (> 0.1), then a Part 380 permit is required. Contact the Radiation Section at (518) 457-2225 for information on how to apply for a Part 380 Radiation Control Permit.