Experiment 4 Worksheet: <u>The Half-life of Candium</u>

<u>Purpose:</u> (*A statement should be made here regarding what your experiment is designed to accomplish.*)

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<u>Procedure:</u> (*Describe here how you went about completing your experiment. Use enough detail that someone could repeat it, if necessary. Also reference any books or manual you may have used to assist you.*)

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<u>Data:</u>

Experimental Data				
Half-Life	Total Time (s)	# of undecayed candium	# Decayed	Log of undecayed candium
0	**0**	**50**	**0**	**1.70**
1	**10**			
2	**20**			
3	**30**			
4	**40**			
5	**50**			
6	**60**			
7	**70**			
8	**80**			
9	**90**			
10	**100**			

Calculations: (*Use the graph paper provided in the back of your manual to graph the number of undecayed candium for the trial versus time and a second graph of the log of undecayed candium versus time.***)**

Half-Life of Candium: _____

Extraction of Uranium:

Initial Observations of Uranium Waste:

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Observations of Two Layers in Test Tube:

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The organic layer rests on top of the water layer, why? What property (that you have already dealt with) of the two solvents determines which will reside on top?

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Final Observations:

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Conclusions: (*Summarize your results here and discuss possible errors that may have occurred during the experiment. Based on your calculation of the half-life of candium, is it dangerous to humans? Radium-226 has a half-life of 1620 years, and it is considered dangerous, how does candium compare? Is the graph of the decay of candium linear? Is the logarithmic graph of the candium decay linear? Is the relationship of amount remaining versus time linear or logarithmic? Does the Purex[1] process work? Why do you think it is a good idea to recycle the uranium?***)**

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