For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3			A 7.2800000000000	CI	1960	1960	N			
Sr-90			A 1648.0000000000	CI	1960	1960	N			
Tc-99			A .21100000000000	CI	1960	1960	N			
Sb-125			A 95.800000000000	CI	1960	1960	N			
I-129			A .00038300000000	CI	1960	1960	N			
Cs-137			A 1720.0000000000	CI	1960	1960	N			
Eu-152			A .00613000000000	CI	1960	1960	N			
Eu-154			A 130.00000000000	CI	1960	1960	N			
Eu-155			A 80.500000000000	CI	1960	1960	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - method of measurement.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-234			A .01760000000000	CI	1960	1960	N			
U-235			A .00038300000000	CI	1960	1960	N			
U-236			A .00690000000000	CI	1960	1960	N			
Np-237			A .01070000000000	CI	1960	1960	N			
Pu-238			A 46.000000000000	CI	1960	1960	N			
Pu-239			A .19200000000000	CI	1960	1960	N			
Pu-240			A .11900000000000	CI	1960	1960	N			
Pu-241			A 76.600000000000	CI	1960	1960	N			
Pu-242			A .00119000000000	CI	1960	1960	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - method of measurement.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-243			A .13000000000000	CI	1960	1960	N			
Am-242			A .01530000000000	CI	1960	1960	N			
Cm-242			A .76600000000000	CI	1960	1960	N			
Cm-244			A 2.1100000000000	CI	1960	1960	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Basis for uncertainty - method of measurement.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
RWMIS does not list uranium radionuclides, but those radionuclides are expected to be present in irradiated fuel rods.

7. Major unknowns in inventories of contaminants:
Virtually nothing is known about these fuel rods.

8. Key assumptions used to deal with the unknowns:
Experience with what is in a fuel rod. On part D, no G-M counter correction is needed to entries for which upper and lower bounds are given. The presence of such bounds indicates that the estimate was based on weight, laboratory analysis, spectrometry, and/or mathematical calculations. The G-M counter correction is needed for entries for which no bounds are given, because such estimates were originally made using the G-M counter method.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 207

1. Preparer: Nieschmidt, Ernest

2. Date prepared: 09/01/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 642
(building number - use code from attached list)

5. Number of waste stream from this facility:
6H

6. Waste stream:
Scrap metal pieces.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1964 Ending year 1977

9. Waste stream volume:
Amount 40.7400 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Other core,reactor vessel,loop component
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Scrap metal pieces which accumulate from underwater cutting in the canals.

3. Chemical form:
Metal, Fe and Al.

4. Inner packaging: [ ] plastic bag [X] plastic liner
[ ] metal liner [ ] none [ ] other (specify)

5. Waste container type (see attached list)
Wooden box.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Solid.	H.	A 6.6040000000000	CI	1961	1961	N			
C-14	Solid.	H.	A .88600000000000	CI	1961	1961	N			
Fe-55	Solid.	H.	A 153.00000000000	CI	1961	1961	N			
Ni-59	Solid.	H.	A .04591000000000	CI	1961	1961	N			
Ni-63	Solid.	H.	A 25.770000000000	CI	1961	1961	N			
Co-60	Solid.	H.	A 53.960000000000	CI	1961	1961	N			
Sr-90	Solid.	H.	A .07410000000000	CI	1961	1961	N			
Tc-99	Solid.	H.	A .01450000000000	CI	1961	1961	N			
I-129	Solid.	H.	A .00000376920000	CI	1961	1961	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Entries listed as H are hydrogen entrapped in metal. Basis for default uncertainty - method of measurement.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Solid.	H.	A 16.110000000000	CI	1961	1961	N			
Ce-144	Solid.	H.	A .37850000000000	CI	1961	1961	N			
Eu-154	Solid.	H.	A .00023360000000	CI	1961	1961	N			
Eu-155	Solid.	H.	A .75710000000000	CI	1961	1961	N			
U-234	Solid.	H.	A .00016910000000	CI	1961	1961	N			
U-235	Solid.	H.	A .00000362400000	CI	1961	1961	N			
U-236	Solid.	H.	A .00006443000000	CI	1961	1961	N			
Np-237	Solid.	H.	A .00010470000000	CI	1961	1961	N			
Pu-238	Solid.	H.	A .00434900000000	CI	1961	1961	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Entries listed as H are hydrogen entrapped in metal. Basis for default uncertainty - method of measurement.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Solid.	H.	A .00434900000000	CI	1961	1961	N			
Pu-240	Solid.	H.	A .00045910000000	CI	1961	1961	N			
Pu-241	Solid.	H.	A .47520000000000	CI	1961	1961	N			
Am-241	Solid.	H.	A .00217500000000	CI	1961	1961	N			
Cm-242	Solid.	H.	A .00217500000000	CI	1961	1961	N			
Cm-244	Solid.	H.	A .00201400000000	CI	1961	1961	N			
H-3	Solid.	H.	A 82.260000000000	CI	1964	1964	N			
C-14	Solid.	H.	A 11.040000000000	CI	1964	1964	N			
Fe-55	Solid.	H.	A 1906.0000000000	CI	1964	1964	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Entries listed as H are hydrogen entrapped in metal. Basis for default uncertainty - method of measurement.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Ni-59	Solid.	H.	A .57180000000000	CI	1964	1964	N			
Ni-63	Solid.	H.	A 321.00000000000	CI	1964	1964	N			
Co-60	Solid.	H.	A 672.10000000000	CI	1964	1964	N			
Sr-90	Solid.	H.	A .92290000000000	CI	1964	1964	N			
Tc-99	Solid.	H.	A .18060000000000	CI	1964	1964	N			
I-129	Solid.	H.	A .00004695300000	CI	1964	1964	N			
Cs-137	Solid.	H.	A 200.60000000000	CI	1964	1964	N			
Ce-144	Solid.	H.	A 4.7150000000000	CI	1964	1964	N			
Eu-154	Solid.	H.	A .00290900000000	CI	1964	1964	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Entries listed as H are hydrogen entrapped in metal. Basis for default uncertainty - method of measurement.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Eu-155	Solid.	H.	A 9.4300000000000	CI	1964	1964	N			
U-234	Solid.	H.	A .00210700000000	CI	1964	1964	N			
U-235	Solid.	H.	A .00004514000000	CI	1964	1964	N			
U-236	Solid.	H.	A .00080260000000	CI	1964	1964	N			
Np-237	Solid.	H.	A .00130400000000	CI	1964	1964	N			
Pu-238	Solid.	H.	A .05417000000000	CI	1964	1964	N			
Pu-239	Solid.	H.	A .05417000000000	CI	1964	1964	N			
Pu-240	Solid.	H.	A .00571800000000	CI	1964	1964	N			
Pu-241	Solid.	H.	A 5.9190000000000	CI	1964	1964	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Entries listed as H are hydrogen entrapped in metal. Basis for default uncertainty - method of measurement.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Am-241	Solid.	H.	A .02709000000000	CI	1964	1964	N			
Cm-242	Solid.	H.	A .02709000000000	CI	1964	1964	N			
Cm-244	Solid.	H.	A .02508000000000	CI	1964	1964	N			
H-3	Solid.	H.	A 15310.000000000	CI	1976	1976	N			
C-14	Solid.	H.	A 2053.0000000000	CI	1976	1976	N			
Fe-55	Solid.	H.	A 354600.00000000	CI	1976	1976	N			
Ni-59	Solid.	H.	A 106.40000000000	CI	1976	1976	N			
Ni-63	Solid.	H.	A 59730.000000000	CI	1976	1976	N			
Co-60	Solid.	H.	A 125100.00000000	CI	1976	1976	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Entries listed as H are hydrogen entrapped in metal. Basis for default uncertainty - method of measurement.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Sr-90	Solid.	H.	A 171.70000000000	CI	1976	1976	N			
Tc-99	Solid.	H.	A 33.600000000000	CI	1976	1976	N			
I-129	Solid.	H.	A .00873540000000	CI	1976	1976	N			
Cs-137	Solid.	H.	A 37330.000000000	CI	1976	1976	N			
Ce-144	Solid.	H.	A 877.20000000000	CI	1976	1976	N			
Eu-154	Solid.	H.	A .54130000000000	CI	1976	1976	N			
Eu-155	Solid.	H.	A 1754.0000000000	CI	1976	1976	N			
U-234	Solid.	H.	A .39200000000000	CI	1976	1976	N			
U-235	Solid.	H.	A .00839900000000	CI	1976	1976	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Entries listed as H are hydrogen entrapped in metal. Basis for default uncertainty - method of measurement.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-236	Solid.	H.	A .14930000000000	CI	1976	1976	N			
Np-237	Solid.	H.	A .24260000000000	CI	1976	1976	N			
Pu-238	Solid.	H.	A 10.080000000000	CI	1976	1976	N			
Pu-239	Solid.	H.	A 10.080000000000	CI	1976	1976	N			
Pu-240	Solid.	H.	A 1.0640000000000	CI	1976	1976	N			
Pu-241	Solid.	H.	A 1101.0000000000	CI	1976	1976	N			
Am-241	Solid.	H.	A 5.0390000000000	CI	1976	1976	N			
Cm-242	Solid.	H.	A 5.0390000000000	CI	1976	1976	N			
Cm-244	Solid.	H.	A 4.6660000000000	CI	1976	1976	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Entries listed as H are hydrogen entrapped in metal. Basis for default uncertainty - method of measurement.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Solid.	H.	A 34570.000000000	CI	1977	1977	N			
C-14	Solid.	H.	A 4638.0000000000	CI	1977	1977	N			
Fe-55	Solid.	H.	A 801000.00000000	CI	1977	1977	N			
Ni-59	Solid.	H.	A 240.30000000000	CI	1977	1977	N			
Ni-63	Solid.	H.	A 134900.00000000	CI	1977	1977	N			
Co-60	Solid.	H.	A 282500.00000000	CI	1977	1977	N			
Sr-90	Solid.	H.	A 387.90000000000	CI	1977	1977	N			
Tc-99	Solid.	H.	A 75.890000000000	CI	1977	1977	N			
I-129	Solid.	H.	A .01972800000000	CI	1977	1977	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Entries listed as H are hydrogen entrapped in metal. Basis for default uncertainty - method of measurement.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Solid.	H.	A 84320.000000000	CI	1977	1977	N			
Ce-144	Solid.	H.	A 1982.0000000000	CI	1977	1977	N			
Eu-154	Solid.	H.	A 1.2230000000000	CI	1977	1977	N			
Eu-155	Solid.	H.	A 3963.0000000000	CI	1977	1977	N			
U-234	Solid.	H.	A .88540000000000	CI	1977	1977	N			
U-235	Solid.	H.	A .01897000000000	CI	1977	1977	N			
U-236	Solid.	H.	A .33730000000000	CI	1977	1977	N			
Np-237	Solid.	H.	A .54810000000000	CI	1977	1977	N			
Pu-238	Solid.	H.	A 22.770000000000	CI	1977	1977	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Entries listed as H are hydrogen entrapped in metal. Basis for default uncertainty - method of measurement.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Solid.	H.	A 22.770000000000	CI	1977	1977	N			
Pu-240	Solid.	H.	A 2.4030000000000	CI	1977	1977	N			
Pu-241	Solid.	H.	A 2487.0000000000	CI	1977	1977	N			
Am-241	Solid.	H.	A 11.380000000000	CI	1977	1977	N			
Cm-242	Solid.	H.	A 11.380000000000	CI	1977	1977	N			
Cm-244	Solid.	H.	A 10.540000000000	CI	1977	1977	N			

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Entries listed as H are hydrogen entrapped in metal. Basis for default uncertainty - method of measurement.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
A portion of, or all of the measurements, were assumed to be taken using a G-M detector which only measures gamma emitters; beta emitters have been added to the RWMIS activity based on scaling factors. Therefore, the total activity will be greater than that in RWMIS.

7. Major unknowns in inventories of contaminants:
Distribution of materials in "canal trash".

8. Key assumptions used to deal with the unknowns:
Assumed that canal trash consists of activated and contaminated metals. On part D, no G-M counter correction is needed to entries for which upper and lower bounds are given. The presence of such bounds indicates that the estimate was based on weight, laboratory analysis, spectrometry, and/or mathematical calculations. The G-M counter correction is needed for entries for which no bounds are given, because such estimates were originally made using the G-M counter method.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 190

1. Preparer: Amaro, C.

2. Date prepared: 09/01/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 642
(building number - use code from attached list)

5. Number of waste stream from this facility:
7H

6. Waste stream:
Various combustible materials.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1965 Ending year 1965

9. Waste stream volume:
Amount 3.7633 Units Cubic feet.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
Combustibles (paper, cloth, wood, etc.).
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Various combustible material.

3. Chemical form:
Unknown.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other" is unknown.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Unknown.	Unknown.	T .00071060000000	CI	1965	1965	N			Unknown.
C-14	Unknown.	Unknown.	T .00009533000000	CI	1965	1965	N			Unknown.
Fe-55	Unknown.	Unknown.	T .01647000000000	CI	1965	1965	N			Unknown.
Ni-59	Unknown.	Unknown.	T .00000494000000	CI	1965	1965	N			Unknown.
Ni-63	Unknown.	Unknown.	T .00277300000000	CI	1965	1965	N			Unknown.
Co-60	Unknown.	Unknown.	T .00580600000000	CI	1965	1965	N			Unknown.
Sr-90	Unknown.	Unknown.	T .00000797300000	CI	1965	1965	N			Unknown.
Tc-99	Unknown.	Unknown.	T .00000156000000	CI	1965	1965	N			Unknown.
I-129	Unknown.	Unknown.	T .00000000041000	CI	1965	1965	N			Unknown.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Unknown.	Unknown.	T .00173300000000	CI	1965	1965	N			Unknown.
Ce-144	Unknown.	Unknown.	T .00004073000000	CI	1965	1965	N			Unknown.
Eu-154	Unknown.	Unknown.	T .00000002510000	CI	1965	1965	N			Unknown.
Eu-155	Unknown.	Unknown.	T .00008146000000	CI	1965	1965	N			Unknown.
U-234	Unknown.	Unknown.	T .00000001820000	CI	1965	1965	N			Unknown.
U-235	Unknown.	Unknown.	T .00000000040000	CI	1965	1965	N			Unknown.
U-236	Unknown.	Unknown.	T .00000000690000	CI	1965	1965	N			Unknown.
Np-237	Unknown.	Unknown.	T .00000001130000	CI	1965	1965	N			Unknown.
Pu-238	Unknown.	Unknown.	T .00000046800000	CI	1965	1965	N			Unknown.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239	Unknown.	Unknown.	T .00000046800000	CI	1965	1965	N			Unknown.
Pu-240	Unknown.	Unknown.	T .00000004940000	CI	1965	1965	N			Unknown.
Pu-241	Unknown.	Unknown.	T .00005113000000	CI	1965	1965	N			Unknown.
Am-241	Unknown.	Unknown.	T .00000023400000	CI	1965	1965	N			Unknown.
Cm-242	Unknown.	Unknown.	T .00000023400000	CI	1965	1965	N			Unknown.
Cm-244	Unknown.	Unknown.	T .00000021670000	CI	1965	1965	N			Unknown.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
A portion of, or all of the measurements, were assumed to be taken using a G-M detector which only measures gamma emitters; beta emitters have been added to the RWMIS activity based on scaling factors. Therefore, the total activity will be greater than that in RWMIS.

7. Major unknowns in inventories of contaminants:
MAP and MFP were unknown.

8. Key assumptions used to deal with the unknowns:
MAP radionuclides were chosen based on their cross sections and half lives. MFP radionuclides were chosen based on their fissionable products and half lives. On part D, no G-M counter correction is needed to entries for which upper and lower bounds are given. The presence of such bounds indicates that the estimate was based on weight, laboratory analysis, spectrometry, and/or mathematical calculations. The G-M counter correction is needed for entries for which no bounds are given, because such estimates were originally made using the G-M counter method.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 156

1. Preparer: Amaro, C.

2. Date prepared: 08/27/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 653
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Benzine.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1964 Ending year 1964

9. Waste stream volume:
Amount 0.0038 Units Gallons.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):
6. Benzine is not Benzene.

1. General physical form (see attached list)
Other liquid setups.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Liquid.

3. Chemical form:
Benzine.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:
Known as ligroin, highly flammable liquid. Toxic if ingested or inhaled.

7. Comments (specify number of pertinent question):
5. "Other" is probably a polystyrene bottle.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
8032-32-4 Benzine			T 4000.0000000000	GM	1964	1964	N	-20%	+20%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Sample was probably measured to obtain volume. Error is 20% because quantity is so small.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3			T .00015420000000	CI	1964	1964	N	-50%	+50%	See comment below.
C-14			T .00002069000000	CI	1964	1964	N	-50%	+50%	See comment below.
Fe-55			T .00357400000000	CI	1964	1964	N	-50%	+50%	See comment below.
Ni-59			T .00000107200000	CI	1964	1964	N	-50%	+50%	See comment below.
Ni-63			T .00060190000000	CI	1964	1964	N	-50%	+50%	See comment below.
Co-60			T .00126000000000	CI	1964	1964	N	-50%	+50%	See comment below.
Sr-90			T .00000173100000	CI	1964	1964	N	-50%	+50%	See comment below.
Tc-99			T .00000033860000	CI	1964	1964	N	-50%	+50%	See comment below.
I-129			T .00000000009000	CI	1964	1964	N	-50%	+50%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on previous experience and the type of material, the preparer believes a sample was analyzed. A sodium iodide (NaI) detector was probably used to count the sample. Because it has broad peaks, radionuclides may be masked. The total activity is well known but individual radionuclide activity may be wrong, therefore a 50% error was assigned.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137			T .00037620000000	CI	1964	1964	N	-50%	+50%	See comment below.
Ce-144			T .00000884100000	CI	1964	1964	N	-50%	+50%	See comment below.
Eu-154			T .00000000550000	CI	1964	1964	N	-50%	+50%	See comment below.
Eu-155			T .00001768000000	CI	1964	1964	N	-50%	+50%	See comment below.
U-234			T .00000000400000	CI	1964	1964	N	-50%	+50%	See comment below.
U-235			T .00000000010000	CI	1964	1964	N	-50%	+50%	See comment below.
U-236			T .00000000150000	CI	1964	1964	N	-50%	+50%	See comment below.
Np-237			T .00000000240000	CI	1964	1964	N	-50%	+50%	See comment below.
Pu-238			T .00000010160000	CI	1964	1964	N	-50%	+50%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on previous experience and the type of material, the preparer believes a sample was analyzed. A sodium iodide (NaI) detector was probably used to count the sample. Because it has broad peaks, radionuclides may be masked. The total activity is well known but individual radionuclide activity may be wrong, therefore a 50% error was assigned.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-239			T .00000010160000	CI	1964	1964	N	-50%	+50%	See comment below.
Pu-240			T .00000001070000	CI	1964	1964	N	-50%	+50%	See comment below.
Pu-241			T .00001110000000	CI	1964	1964	N	-50%	+50%	See comment below.
Am-241			T .00000005080000	CI	1964	1964	N	-50%	+50%	See comment below.
Cm-242			T .00000005080000	CI	1964	1964	N	-50%	+50%	See comment below.
Cm-244			T .00000004700000	CI	1964	1964	N	-50%	+50%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on previous experience and the type of material, the preparer believes a sample was analyzed. A sodium iodide (NaI) detector was probably used to count the sample. Because it has broad peaks, radionuclides may be masked. The total activity is well known but individual radionuclide activity may be wrong, therefore a 50% error was assigned.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
MAP and MFP were unidentified.

8. Key assumptions used to deal with the unknowns:
MAP radionuclides were chosen based on the cross sections and half lives. MFP radionuclides were chosen based on their fissionable products and half lives.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 135

1. Preparer: Nieschmidt, Ernest

2. Date prepared: 07/27/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 670
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Beryllium reflectors from MTR, ETR and ATR and miscellaneous pieces of Be.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1963 Ending year 1977

9. Waste stream volume:
Amount 41.9300 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. 670-ATR, also 603-MTR and 642-ETR.
6. Be reflectors shipped 1969-1977, miscellaneous pieces 1963-1977.

1. General physical form (see attached list)
Beryllium.
[ ] other (specify)

2. Details on physical form(particularly confinement related)
Be metal chunks from a few cubic ft. down to gravel size.

3. Chemical form:
Be metal.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
None.

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. Container is a topless rectangular basket made of galvanized steel.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
7440-41-7 Beryllium	Solid.	Beryllium.	T 724800.00000000	GM	1963	1963	N	723800	725800	Estimate.
7440-41-7 Beryllium	Solid.	Beryllium.	T 1132900.0000000	GM	1970	1970	N	1131900	1133900	Estimate.
7440-41-7 Beryllium	Solid.	Beryllium.	T 9297800.0000000	GM	1976	1976	N	9296800	9298800	Estimate.
7440-41-7 Beryllium	Solid.	Beryllium.	T 1224900.0000000	GM	1977	1977	N	1223900	1225900	Estimate.
7440-41-7 Beryllium	Solid.	Beryllium.	T 690400.00000000	GM	1969	1969	N	689400	700400	Estimate.
7440-41-7 Beryllium	Solid.	Beryllium.	T 3629.0000000000	GM	1973	1973	N	2629	4629	Estimate.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)
Maximum and minimum values estimated. The estimates are based on discussions of former TRA personnel. They estimate that perhaps 1 kg of small pieces may not have been recovered. An error of +/-1 kg has been assigned.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Metal alloy.	T 3306.0000000000	CI	1963	1977	N			
Cr-51	Solid.	Metal alloy.	T 11639.000000000	CI	1963	1977	N			
Fe-59	Solid.	Metal alloy.	T 1437.0000000000	CI	1963	1977	N			
Be-10	Solid.	Beryllium metal.	T .70000000000000	CI	1963	1977	N			
H-3	Solid.	H.	T 1049500.0000000	CI	1963	1977	N	-50%	+100%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Letter T.A. Tomberlin to D.E. Sheldon, TOM-30-86. Interviewee wishes to remain anonymous. Packing information obtained from Dale Wells and Larry Toomer. Letter from P.K. Nagata to T.H. Smith, December 1993, PKN-16-93. J.O. Brower letter to R.N. Bhatt, JOB-23-94, "ATR Tritium Waste Inventory", Oct. 28, 1994.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
RWMIS has no H-3 entry.

7. Major unknowns in inventories of contaminants:
Accuracy of calculations in TOM-30-86.
Accuracy of calculations in PKN-16-93.
Miniscule amounts of C-14, Ni-59 and Nb-94.

8. Key assumptions used to deal with the unknowns:
That the letters TOM-30-86 and PKN-16-93 are correct. Have reviewed the calculations and references and concur with the results. As indicated in JOB-23-94, the radionuclides C-14, Nb-94 and Ni-59 are present. However, the quantity of these radionuclides in the waste is dependent on whether the shipment is Be blocks or outer shim control cylinders, power levels, and the reactor the shipment is from. Since these are unknown variables, these radionuclides are listed as unknown in the inventory.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 195

1. Preparer: Amaro, C.

2. Date prepared: 09/01/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 670
(building number - use code from attached list)

5. Number of waste stream from this facility:
2H

6. Waste stream:
Stainless steel and aluminum.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1980 Ending year 1980

9. Waste stream volume:
Amount 11.8900 Units Cubic feet.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)
[X] other (specify)
Canal model.

2. Details on physical form(particularly confinement related)
Stainless steel and aluminum.

3. Chemical form:
Metal.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [ ] none [X] other (specify)
Unknown.

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other" is not known.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
H-3	Metal.	Metallic.	T .00000410000000	CI	1980	1980	N			See continuation page.
C-14	Metal.	Metallic.	T .00000055000000	CI	1980	1980	N			See continuation page.
Fe-55	Metal.	Metallic.	T .00009500000000	CI	1980	1980	N			See continuation page.
Ni-59	Metal.	Metallic.	T .00000002850000	CI	1980	1980	N			See continuation page.
Ni-63	Metal.	Metallic.	T .00001600000000	CI	1980	1980	N			See continuation page.
Co-60	Metal.	Metallic.	T .00003350000000	CI	1980	1980	N			See continuation page.
Sr-90	Metal.	Metallic.	T .00000004600000	CI	1980	1980	N			See continuation page.
Tc-99	Metal.	Metallic.	T .00000000900000	CI	1980	1980	N			See continuation page.
I-129	Metal.	Metallic.	Unknown.	CI	1980	1980	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error). Additional radionuclides (e.g. U-235) were identified and calibrated, but are not shown here as their activity was less than 1E-11 curies.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Metal.	Metallic.	T .00001000000000	CI	1980	1980	N			See continuation page.
Ce-144	Metal.	Metallic.	T .00000023500000	CI	1980	1980	N			See continuation page.
Eu-154	Metal.	Metallic.	T .00000000010000	CI	1980	1980	N			See continuation page.
Eu-155	Metal.	Metallic.	T .00000047000000	CI	1980	1980	N			See continuation page.
U-234	Metal.	Metallic.	T .00000000010000	CI	1980	1980	N			See continuation page.
U-236	Metal.	Metallic.	T .00000000010000	CI	1980	1980	N			See continuation page.
Np-237	Metal.	Metallic.	T .00000000010000	CI	1980	1980	N			See continuation page.
Pu-238	Metal.	Metallic.	T .00000000270000	CI	1980	1980	N			See continuation page.
Pu-239	Metal.	Metallic.	T .00000000270000	CI	1980	1980	N			See continuation page.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error). Additional radionuclides (e.g. U-235) were identified and calibrated, but are not shown here as their activity was less than 1E-11 curies.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Pu-240	Metal.	Metallic.	T .00000000030000	CI	1980	1980	N			See continuation page.
Pu-241	Metal.	Metallic.	T .00000029500000	CI	1980	1980	N			See continuation page.
Am-241	Metal.	Metallic.	T .00000000130000	CI	1980	1980	N			See continuation page.
Cm-242	Metal.	Metallic.	T .00000000130000	CI	1980	1980	N			See continuation page.
Cm-244	Metal.	Metallic.	T .00000000120000	CI	1980	1980	N			See continuation page.
Cr-51	Metal.	Metallic.	T .00494990000000	CI	1980	1980	N	-20%	+20%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

The sample column is marked "N" because the preparer cannot prove a sample was counted by the Radiation Measurements Laboratory (RML) at TRA, but based on the RWMIS radionuclide identification, the preparer believes a sample was counted. A 5-10% error is normal for a sample analyzed by the RML, however, being conservative, the preparer assigned a 20% error (doubling the 10% error). Additional radionuclides (e.g. U-235) were identified and calibrated, but are not shown here as their activity was less than 1E-11 curies.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [ ] interview
[ ] expert judgment [ ] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
A portion of, or all of the measurements, were assumed to be taken using a G-M detector which only measures gamma emitters; beta emitters have been added to the RWMIS activity based on scaling factors. Therefore, the total activity will be greater than that in RWMIS.

7. Major unknowns in inventories of contaminants:
MAP and MFP were unidentified.

8. Key assumptions used to deal with the unknowns:
MAP radionuclides were chosen based on their cross sections and half lives. MFP radionuclides were chosen based on their fissionable cross sections and half lives. On part D, no G-M counter correction is needed to entries for which upper and lower bounds are given. The presence of such bounds indicates that the estimate was based on weight, laboratory analysis, spectrometry, and/or mathematical calculations. The G-M counter correction is needed for entries for which no bounds are given, because such estimates were originally made using the G-M counter method.

Continuation of Part _____ Column or Question Number or Title _____

Because of the configuration of this item, the analysis method is questionable. The radionuclide content may have been determined using smears, a Geiger-Mueller counter, or a sodium iodide detector. The true uncertainty is not known.

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 206

1. Preparer: Amaro, C.

2. Date prepared: 09/01/93

3. Generator: TRA
(area or contractor - use code from attached list)

4. Particular facility: 706
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Tank.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1975 Ending year 1975

9. Waste stream volume:
Amount 906.1000 Units Cubic feet.
Check box: [ ] annual or [X] total over all years
Check box: [ ] container volume or [X] waste volume

10. Comments (specify number of pertinent question):

1. General physical form (see attached list)

[X] other (specify)
MTR working reservoir.

2. Details on physical form(particularly confinement related)
Tank for effluent.

3. Chemical form:
Metallic.

4. Inner packaging: [ ] plastic bag [ ] plastic liner
[ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Other.

6. Other characteristics of interest:

7. Comments (specify number of pertinent question):
5. "Other" is the tank itself.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column.
If not, mark N and give the minimum value and maximum value.
Additional information or explanations (indicate pertinent contaminant)

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Co-60	Solid.	Metallic.	A 7.0000000000000	CI	1975	1975	N	-50%	+100%	See comment below.

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

A Geiger-Mueller counter or a portable NaI detector was used to determine this activity. The activity is probably too low by a factor 2. Radioactivity in the tank came from cobalt flux wires. Comment: other radionuclides may be present in small quantities, but there is no reliable evidence.

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [X] reports
[ ] other

2. Details concerning source (names, report no., dates, etc.)
Interviewees wish to remain anonymous.
L.M. DeWitt, Summarization of RWMC Subsurface Disposal Area Source Term Interviews, August 1990, Haz Answer.

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[ ] no
[X] yes

6. If yes, explain why:
A portion of, or all of the measurements, were assumed to be taken using a G-M detector which only measures gamma emitters; beta emitters have been added to the RWMIS activity based on scaling factors. Therefore, the total activity will be greater than that in RWMIS.

7. Major unknowns in inventories of contaminants:
None identified.

8. Key assumptions used to deal with the unknowns:

(Radioactive) Waste Management Complex

DATA INPUT FOR HISTORICAL DATA TASK FOR RWMC SUBSURFACE DISPOSAL AREA

PART A - GENERAL INFORMATION HDT - 32

1. Preparer: Jorgensen, Doug

2. Date prepared: 06/24/93

3. Generator: WMC
(area or contractor - use code from attached list)

4. Particular facility: WMC
(building number - use code from attached list)

5. Number of waste stream from this facility:
1H

6. Waste stream:
Soil, pond sediment, scrap metal and equipment.

7. Type of radioactive waste (check box):
[ ] TRU or suspect TRU
[X] LLW
[ ] non-radioactive

8. Actual years disposed of at SDA:
Starting year 1977 Ending year 1983

9. Waste stream volume:
Amount 844.1200 Units Cubic meters.
Check box: [ ] annual or [X] total over all years
Check box: [X] container volume or [ ] waste volume

10. Comments (specify number of pertinent question):
4. RWMC - Waste Management Complex.
6. No consistency in the waste streams generated over the seven year period except for radiologically contaminated materials as a by-product of deconning shipping equipment and non-removable rad. contamination of equipment. All material was low-level waste disposed of in Pit 15.

1. General physical form (see attached list)
Soil.
[X] other (specify)
6, 10.

2. Details on physical form(particularly confinement related)
Soil, sediment and pond waste from Decon. and Decom. Facility South (DSF), contaminated scrap metal and equipment.

3. Chemical form:
Rad-contaminated decon. (solid) waste and rad-contaminated metal.

4. Inner packaging: [ ] plastic bag [ ] plastic liner [ ] metal liner [X] none [ ] other (specify)

5. Waste container type (see attached list)
Metal barrel*.

6. Other characteristics of interest:
O includes materials (bulk) not disposed of in containers.

7. Comments (specify number of pertinent question):
4. No hazardous chemicals are believed to have been disposed, decon waste consisted only of soil and sediment (rad-contaminated) from evaporation pond at the DSF. Two deer were found dead in the pond (drowned because of steep banks to pond not allowing egress) and were also disposed of as rad. contaminated.
5. BXW and "Other" (materials, bulk, not disposed of in containers).

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Contaminant & CAS Registry Number	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
None.										

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

RWMIS lists Be contaminated waste as part of WMC waste stream. This material was Rocky Flats waste discovered and retrieved from Pits 1 and 2 during the Early Waste Retrieval Project. This material will not be included as WMC waste in order to not "double-count" the waste received from Rocky Flats. No other hazardous chemical waste was believed to have been disposed based on interviews.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
Cs-137	Metal/soil.	Unknown.	T 1.2157000000000	CI	1978	1983	N	-50%	+50%	
Co-60	Metal/soil.	Unknown.	T .00041330000000	CI	1978	1983	N	-50%	+50%	
Fe-59	Metal/soil.	Unknown.	T .00039420000000	CI	1978	1983	N	-50%	+50%	
Sr-90	Metal/soil.	Unknown.	T 4.8000000000000	CI	1978	1983	N	-50%	+50%	
Ra-226	Metal.	Unknown.	T .01720000000000	CI	1978	1983	N	-50%	+50%	
Th-230	Metal.	Unknown.	T .01789000000000	CI	1978	1983	N	-50%	+50%	
Th-232	Metal.	Unknown.	T .00034000000000	CI	1978	1983	N	-50%	+50%	
U-234	Metal.	Unknown.	T .01733000000000	CI	1978	1983	N	-50%	+50%	
U-235	Metal.	Unknown.	T .00091360000000	CI	1978	1983	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Based on process knowledge, MAP split 1/2 into Co-60 and Fe-59, MFP included as Cs-137 and unidentified beta-gamma included under Cs-137. The 1977 record (EWR of Rocky Flats Waste) was not included on this form.

For each contaminant, complete at least one line on the following table. If any entries for that contaminant vary by year, fill out additional lines as needed to cover the varying entries for different years. For example, if the annual quantity disposed was x kg for 1952-56 and y kg for 1956-84, use two lines to handle this situation.

Radionuclide	Physical Form	Chemical Form	(A)nnual/(T)otal Quantity	Unit	Begin Year	End Year	Samples?	Minimum Value/#Samp	Maximum Value/STD	Basis for Uncertainty
U-238	Metal.	Unknown.	T .01783000000000	CI	1978	1983	N	-50%	+50%	
Cs-137	Metal/soil.	Unknown.	T .00000781500000	CI	1978	1983	N	-50%	+50%	

* If sample data are available, mark Y in the column titled "Samples?" and provide number of samples in the next column and standard deviation in the next column. If not, mark N and give the minimum value and maximum value.

Additional information or explanations (indicate pertinent contaminant)

Based on process knowledge, MAP split 1/2 into Co-60 and Fe-59, MFP included as Cs-137 and unidentified beta-gamma included under Cs-137. The 1977 record (EWR of Rocky Flats Waste) was not included on this form.

PART E - SOURCES OF INFORMATION AND UNCERTAINTIES - WMC-WMC-1H

1. Type of source of information:
(check box)

[X] RWMIS [ ] other database
[ ] sample analysis data
[ ] operating records [X] interview
[ ] expert judgment [ ] reports
[X] other
Shipping record.

2. Details concerning source (names, report no., dates, etc.)
Shipping records. Interviews with Jim Bishoff (Operations Manager - RWMC), Larry Miller (Senior HP Workleader, RWMC) and Dale Wells (RWMC Waste Shipment Coordinator).

3. Do the estimates of contaminant quantities in Part C and D represent:
[X] best estimate
[ ] worst case
[ ] other

4. If other than best estimate, explain why:

5. Do the data conflict with RWMIS?
(Historical or Present Data Only)
[X] no
[ ] yes

6. If yes, explain why:

7. Major unknowns in inventories of contaminants:
None.

8. Key assumptions used to deal with the unknowns:
Determination of MAP/MFP. RWMIS determination of rad. content and isotope designation.