

Appendix L
Evaluation of Site ARA-25

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Table L-1. ARA-25 Contaminant Screening

| COPC | Detects/ Samples | Maximum Detected Concentration (mg/kg or pCi/g) | INEEL Background Concentration (mg/kg or pCi/g) | 10 × INEEL Background Concentration (mg/kg or pCi/g) | Region III Risk-based Concentration (mg/kg or pCi/g) | COPC? |
|--------------------------------|---------------------|--|--|---|---|-------|
| Aluminum | 3/3 | 3,310 | 16,000 | 160,000 | 78,000 | No |
| Arsenic | 3/3 | 40.6 | 5.8 | | 0.43 | Yes |
| Barium | 3/3 | 51.1 | 300 | | 5,500 | No |
| Beryllium | 3/3 | .159 | 1.8 | | 0.15 | No |
| Bis (2ethylhexyl) phthalate | 3/3 | 1 | | | 46 | No |
| Calcium | 3/3 | 65,300 | 24,000 | 240,000 | | No |
| Chromium | 3/3 | 98.4 | 33 | | 390 | No |
| Cobalt | 3/3 | 104 | 11 | | 4,700 | No |
| Copper | 3/3 | 227 | 22 | | 3,100 | No |
| Iron | 3/3 | 33,700 | 24,000 | 240,000 | 23,000 | No |
| Lead | 3/3 | 1,430 | 17 | | | Yes |
| Magnesium | 3/3 | 30,400 | 12,000 | 120,000 | | No |
| Manganese | 3/3 | 1,400 | 490 | | 390 | Yes |
| Methylene chloride | 3/3 | | | | 85 | No |
| Mercury | 3/3 | .097 | .05 | | 23 | No |
| Nickel | 3/3 | 38.8 | 35 | | 1,600 | No |
| Potassium | 3/3 | 904 | 4,300 | 43,000 | | No |
| Selenium | 3/3 | .65 | 0.22 | | 390 | No |
| Sodium | 3/3 | 191 | 320 | 3,200 | | No |
| Toluene | 3/3 | .022 | | | 16,000 | No |
| Vanadium | 3/3 | 104 | 45 | | 550 | No |
| Zinc | 3/3 | 855 | 150 | | 23,000 | No |
| Co-60 | 3/3 | 1.95 | | | | Yes |
| Cs-134 | 3/3 | 1.04 | | | | Yes |
| Cs-137 | 3/3 | 449 | 0.82 | | | Yes |
| Eu-152 | 2/3 | 4.93 | | | | Yes |
| Eu-154 | 1/3 | .288 | | | | Yes |
| Ra-226 | 2/3 | 29.7 | | | | Yes |
| Sr-90 | 2/3 | 72.8 | 0.49 | | | Yes |

Note: A blank entry for a contaminant indicates that no data are available.

Table L-2. ARA-25 soil concentrations by depth interval.

| Contaminant | Soil (0 to 5 ft) |
|-------------|------------------|
| | (mg/kg or pCi/g) |
| Arsenic | 4.06E+01 |
| Lead | 1.40E+03 |
| Manganese | 1.40E+03 |
| Co-60 | 1.95E+00 |
| Cs-134 | 1.04E+00 |
| Cs-137 | 4.49E+02 |
| Eu-152 | 4.93E+00 |
| Eu-154 | 2.88E-01 |
| Ra-226 | 2.97E+01 |
| Sr-90 | 7.28E+01 |

Table L-3 Concentrations of contaminants in homegrown produce at year 30 at ARA-25.

| Contaminant | Homegrown Produce |
|-------------|-------------------|
| | (mg/kg or pCi/g) |
| Arsenic | 6.12E-02 |
| Lead | 0.00E+00 |
| Manganese | 1.26E+03 |
| Co-60 | 1.88E-10 |
| Cs-134 | 3.13E-20 |
| Cs-137 | 5.97E-02 |
| Eu-152 | 2.76E-07 |
| Eu-154 | 4.85E-10 |
| Ra-226 | 8.86E-03 |
| Sr-90 | 5.11E-02 |

Table L-4. Concentrations of contaminants in homegrown produce at year 100 at ARA-25.

| Contaminant | ARA-25 |
|----------------------------|----------|
| Aroclor-1242 | 0.00E+00 |
| Aroclor-1254 | 0.00E+00 |
| Bis(2-ethylhexyl)phthalate | 0.00E+00 |
| Diethylphthalate | 0.00E+00 |
| Diethylether | 0.00E+00 |
| Methylmethacrylate | 0.00E+00 |
| Antimony | 0.00E+00 |
| Arsenic | 2.48E-04 |
| Barium | 0.00E+00 |
| Cadmium | 0.00E+00 |
| Chromium III | 0.00E+00 |
| Chromium VI | 0.00E+00 |
| Cobalt | 0.00E+00 |
| Copper | 0.00E+00 |
| Lead | 0.00E+00 |
| Manganese | 2.61E-01 |
| Mercury | 0.00E+00 |
| Nickel | 0.00E+00 |
| Selenium | 0.00E+00 |
| Silver | 0.00E+00 |
| Thallium | 0.00E+00 |
| Vanadium | 0.00E+00 |
| Zinc | 0.00E+00 |
| Chloride | 0.00E+00 |
| Orthophosphate | 0.00E+00 |
| Sulfate | 0.00E+00 |
| Ag-108m | 0.00E+00 |
| Am-241 | 0.00E+00 |
| Co-60 | 3.37E-27 |
| Cs-134 | 0.00E+00 |
| Cs-137 | 8.37E-73 |
| Eu-152 | 0.00E+00 |

Table L-4. (continued).

| Contaminant | ARA-25 |
|-------------|----------|
| Eu-154 | 0.00E+00 |
| Np-237 | 0.00E+00 |
| Pu-238 | 0.00E+00 |
| Pu-239/240 | 0.00E+00 |
| Ra-226 | 1.14E-16 |
| Sr-90 | 3.56E-19 |
| Tc-99 | 0.00E+00 |
| Th-228 | 0.00E+00 |
| Th-230 | 0.00E+00 |
| Th-232 | 0.00E+00 |
| U-234 | 0.00E+00 |
| U-235 | 0.00E+00 |
| U-238 | 0.00E+00 |

Table L-5. Concentrations of contaminants in groundwater pathway at ARA-25.

| Contaminant | GW Conc. from Surface Sources mg/kg or pCi/g |
|----------------------------|---|
| Aroclor-1242 | 0.00E+00 |
| Aroclor-1254 | 0.00E+00 |
| Bis(2-ethylhexyl)phthalate | 0.00E+00 |
| Diethylphthalate | 0.00E+00 |
| Diethylether | 0.00E+00 |
| Methylmethacrylate | 0.00E+00 |
| Antimony | 0.00E+00 |
| Arsenic | 2.25E-03 |
| Barium | 0.00E+00 |
| Cadmium | 0.00E+00 |
| Chromium III | 0.00E+00 |
| Chromium VI | 0.00E+00 |
| Cobalt | 0.00E+00 |
| Copper | 0.00E+00 |
| Lead | 0.00E+00 |
| Manganese | 5.93E-03 |
| Mercury | 0.00E+00 |
| Nickel | 0.00E+00 |
| Selenium | 0.00E+00 |
| Silver | 0.00E+00 |
| Thallium | 0.00E+00 |
| Vanadium | 0.00E+00 |
| Zinc | 0.00E+00 |
| Chloride | 0.00E+00 |
| Orthophosphate | 0.00E+00 |
| Sulfate | 0.00E+00 |
| Ag-108m | 0.00E+00 |
| Am-241 | 0.00E+00 |
| Co-60 | 2.22E-22 |
| Cs-134 | 0.00E+00 |
| Cs-137 | 6.06E-69 |
| Eu-152 | 0.00E+00 |

Table L-5. (continued).

| Contaminant | GW Conc. from Surface Sources mg/kg or pCi/g |
|-------------|---|
| Eu-154 | 0.00E+00 |
| Np-237 | 0.00E+00 |
| Pu-238 | 0.00E+00 |
| Pu-239/240 | 0.00E+00 |
| Ra-226 | 4.77E-12 |
| Sr-90 | 4.23E-16 |
| Tc-99 | 0.00E+00 |
| Th-228 | 0.00E+00 |
| Th-230 | 0.00E+00 |
| Th-232 | 0.00E+00 |
| U-234 | 0.00E+00 |
| U-235 | 0.00E+00 |
| U-238 | 0.00E+00 |

WITH LONGEST EDGE OF SITE PERPENDICULAR TO GW FLOW DIRECTION

Table L-6. Potential groundwater concentrations and groundwater ingestion risks associated with the hypothetical consolidation of contaminated soils with no cover within WAG 5.

| Contaminant | Maximum Potential Groundwater Concentration (pCi/L or mg/L) | Human Health Risk | Human Health Hazard Quotient | Time of Peak Concentration (yr) |
|-------------|--|-------------------|---------------------------------|---------------------------------------|
| Arsenic | 1.92E-04 | 4.1E-06 | 1.7E-02 | 5.99E+01 |
| Copper | 1.00E-03 | — | 7.4E-04 | 2.62E+02 |
| Lead | 3.30E-04 | — | — | 1.21E+03 |
| Mercury | 1.55E-06 | — | 1.4E-04 | 1.21E+03 |
| Selenium | 3.73E-03 | — | 2.0E-02 | 7.18E+01 |
| Thallium | 9.07E-03 | — | — | 2.42E+01 |
| Ag-108+D | 1.78E-05 | 2.4E-12 | — | 1.07E+03 |
| Cs-137+D | 5.33E-58 | 3.6E-64 | — | 5.58E+03 |
| Ra-226+D | 2.22E-01 | 1.4E-06 | — | 2.42E+01 |

WITH LONGEST EDGE OF SITE PARALLEL TO GW FLOW DIRECTION (MORE CONSERVATIVE)

Table L-7. Potential groundwater concentrations and groundwater ingestion risks associated with the hypothetical consolidation of contaminated soils with no cover within WAG 5.

| Contaminant | Maximum Potential Groundwater Concentration (pCi/L or mg/L) | Human Health Risk | Human Health Hazard Quotient | Time of Peak Concentration (yr) |
|-------------|---|-------------------|------------------------------|---------------------------------|
| Arsenic | 4.65E-04 | 9.9E-06 | 4.2E-02 | 6.28E+01 |
| Copper | 2.58E-03 | — | 1.9E-03 | 2.79E+02 |
| Lead | 7.85E-04 | — | — | 1.30E+03 |
| Mercury | 3.70E-06 | — | 3.4E-04 | 1.30E+03 |
| Selenium | 8.92E-03 | — | 4.9E-02 | 7.55E+01 |
| Thallium | 2.32E-02 | — | — | 2.46E+01 |
| Ag-108+D | 3.04E-05 | 4.2E-12 | — | 1.13E+03 |
| Cs-137+D | 5.33E-58 | 3.6E-64 | — | 5.58E+03 |
| Ra-226+D | 5.67E-01 | 3.6E-06 | — | 2.46E+01 |

| 4-Chloroaniline | Chromium III | Chromium VI | Cobalt | Copper | Di-n-butylphthalate | Fluoride | Lead | Manganese | Mercury | Nickel | Selenium | Silver | Thallium | Vanadium | Xylene | Zinc |
|-----------------|--------------|-------------|----------|----------|---------------------|----------|----------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 0.00E+00 | 9.84E+01 | 0.00E+00 | 1.04E+02 | 2.27E+02 | 0.00E+00 | 0.00E+00 | 1.43E+03 | 1.40E+03 | 9.70E-02 | 3.88E+01 | 6.59E-01 | 7.24E+00 | 0.00E+00 | 1.04E+02 | 0.00E+00 | 8.55E+02 |
| 0.00E+00 | 9.84E+01 | 0.00E+00 | 1.04E+02 | 2.27E+02 | 0.00E+00 | 0.00E+00 | 1.43E+03 | 1.40E+03 | 9.70E-02 | 3.88E+01 | 6.59E-01 | 7.24E+00 | 0.00E+00 | 1.04E+02 | 0.00E+00 | 8.55E+02 |
| 0.00E+00 | 9.84E+01 | 0.00E+00 | 1.04E+02 | 2.27E+02 | 0.00E+00 | 0.00E+00 | 1.43E+03 | 1.40E+03 | 9.70E-02 | 3.88E+01 | 6.59E-01 | 7.24E+00 | 0.00E+00 | 1.04E+02 | 0.00E+00 | 8.55E+02 |
| 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | ##### | 0.00E+00 | ##### | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 0.00E+00 |

| 4-Chloroaniline | Chromium III | Chromium VI | Cobalt | Copper | Di-n-butylphthalate | Fluoride | Lead | Manganese | Mercury | Nickel | Selenium | Silver | Thallium | Vanadium | Xylene | Zinc | SUF | SUF-Used |
|-----------------|--------------|-------------|----------|----------|---------------------|----------|----------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 0.00E+00 | 3.50E-01 | 0.00E+00 | 3.70E-01 | 8.07E-01 | 0.00E+00 | 0.00E+00 | 5.09E+00 | 4.98E+00 | 3.45E-04 | 1.38E-01 | 2.34E-03 | 2.57E-02 | 0.00E+00 | 3.70E-01 | 0.00E+00 | 3.04E+00 | 4.39E-01 | 4.39E-01 |
| 0.00E+00 | 1.22E-03 | 0.00E+00 | 7.38E-02 | 6.54E-02 | 0.00E+00 | 0.00E+00 | 5.53E-02 | 9.93E-01 | 6.20E-05 | 1.91E-03 | 1.62E-05 | 2.09E-03 | 0.00E+00 | 1.14E-03 | 0.00E+00 | 9.07E-01 | 1.05E-02 | 1.05E-02 |
| 0.00E+00 | 4.30E-02 | 0.00E+00 | 4.55E-01 | 4.53E-01 | 0.00E+00 | 0.00E+00 | 8.38E-01 | 6.13E+00 | 3.86E-04 | 2.50E-02 | 3.34E-04 | 1.45E-02 | 0.00E+00 | 4.46E-02 | 0.00E+00 | 5.44E+00 | 1.05E-02 | 1.05E-02 |
| 0.00E+00 | 9.46E-03 | 0.00E+00 | 1.27E-01 | 2.77E-01 | 0.00E+00 | 0.00E+00 | 5.48E-01 | 1.71E+00 | 4.87E-05 | 4.73E-02 | 8.04E-04 | 8.83E-03 | 0.00E+00 | 1.27E-01 | 0.00E+00 | 1.04E+00 | 6.47E-03 | 6.47E-03 |
| 0.00E+00 | 7.07E-03 | 0.00E+00 | 2.53E-02 | 5.53E-02 | 0.00E+00 | 0.00E+00 | 1.66E-01 | 3.41E-01 | 1.30E-05 | 9.46E-03 | 1.61E-04 | 1.76E-03 | 0.00E+00 | 2.53E-02 | 0.00E+00 | 2.08E-01 | 6.47E-03 | 6.47E-03 |
| 0.00E+00 | 3.41E-02 | 0.00E+00 | 4.08E-01 | 8.91E-01 | 0.00E+00 | 0.00E+00 | 1.80E+00 | 5.49E+00 | 1.59E-04 | 1.52E-01 | 2.59E-03 | 2.84E-02 | 0.00E+00 | 4.08E-01 | 0.00E+00 | 3.36E+00 | 2.27E-02 | 2.27E-02 |
| 0.00E+00 | 7.05E-01 | 0.00E+00 | 8.44E+00 | 1.84E+01 | 0.00E+00 | 0.00E+00 | 3.73E+01 | 1.14E+02 | 3.29E-03 | 3.15E+00 | 5.35E-02 | 5.88E-01 | 0.00E+00 | 8.44E+00 | 0.00E+00 | 6.94E+01 | 4.17E-01 | 4.17E-01 |
| 0.00E+00 | 5.82E-01 | 0.00E+00 | 4.18E+00 | 9.11E+00 | 0.00E+00 | 0.00E+00 | 2.10E+01 | 5.62E+01 | 1.78E-03 | 1.56E+00 | 2.65E-02 | 2.91E-01 | 0.00E+00 | 4.18E+00 | 0.00E+00 | 3.43E+01 | 1.43E-01 | 1.43E-01 |
| 0.00E+00 | 3.51E-01 | 0.00E+00 | 2.52E+00 | 5.50E+00 | 0.00E+00 | 0.00E+00 | 1.26E+01 | 3.39E+01 | 1.07E-03 | 9.39E-01 | 1.60E-02 | 1.75E-01 | 0.00E+00 | 2.52E+00 | 0.00E+00 | 2.07E+01 | 1.32E-01 | 1.32E-01 |
| 0.00E+00 | 6.12E-04 | 0.00E+00 | 2.99E-03 | 1.41E-03 | 0.00E+00 | 0.00E+00 | 2.50E-02 | 4.03E-02 | 1.97E-06 | 2.89E-05 | 8.44E-07 | 8.59E-05 | 0.00E+00 | 7.60E-05 | 0.00E+00 | 1.74E-02 | 2.49E-04 | 2.49E-04 |
| 0.00E+00 | 7.73E-05 | 0.00E+00 | 3.78E-04 | 1.78E-04 | 0.00E+00 | 0.00E+00 | 3.16E-03 | 5.09E-03 | 2.49E-07 | 3.65E-06 | 1.07E-07 | 1.08E-05 | 0.00E+00 | 9.60E-06 | 0.00E+00 | 2.20E-03 | 2.54E-04 | 2.54E-04 |
| 0.00E+00 | 5.51E-04 | 0.00E+00 | 2.70E-03 | 1.27E-03 | 0.00E+00 | 0.00E+00 | 2.26E-02 | 3.63E-02 | 1.78E-06 | 2.60E-05 | 7.61E-07 | 7.74E-05 | 0.00E+00 | 6.85E-05 | 0.00E+00 | 1.57E-02 | 1.64E-03 | 1.64E-03 |
| 0.00E+00 | 2.24E-02 | 0.00E+00 | 1.10E-01 | 5.17E-02 | 0.00E+00 | 0.00E+00 | 9.17E-01 | 1.48E+00 | 7.22E-05 | 1.06E-03 | 3.09E-05 | 3.15E-03 | 0.00E+00 | 2.78E-03 | 0.00E+00 | 6.36E-01 | 6.02E-03 | 6.02E-03 |
| 0.00E+00 | 1.97E-05 | 0.00E+00 | 9.64E-05 | 4.54E-05 | 0.00E+00 | 0.00E+00 | 8.06E-04 | 1.30E-03 | 6.35E-08 | 9.31E-07 | 2.72E-08 | 2.76E-06 | 0.00E+00 | 2.45E-06 | 0.00E+00 | 5.59E-04 | 1.10E-04 | 1.10E-04 |
| 0.00E+00 | 7.52E-05 | 0.00E+00 | 3.68E-04 | 1.74E-04 | 0.00E+00 | 0.00E+00 | 3.08E-03 | 4.95E-03 | 2.42E-07 | 3.55E-06 | 1.04E-07 | 1.06E-05 | 0.00E+00 | 9.34E-06 | 0.00E+00 | 2.14E-03 | 9.68E-05 | 9.68E-05 |
| 0.00E+00 | 2.87E-02 | 0.00E+00 | 1.40E-01 | 6.62E-02 | 0.00E+00 | 0.00E+00 | 1.17E+00 | 1.89E+00 | 9.24E-05 | 1.36E-03 | 3.96E-05 | 4.03E-03 | 0.00E+00 | 3.56E-03 | 0.00E+00 | 8.15E-01 | 1.19E-02 | 1.19E-02 |
| 0.00E+00 | 3.33E-03 | 0.00E+00 | 1.57E-02 | 7.68E-03 | 0.00E+00 | 0.00E+00 | 1.32E-01 | 2.11E-01 | 1.04E-05 | 2.10E-04 | 5.40E-06 | 4.57E-04 | 0.00E+00 | 5.55E-04 | 0.00E+00 | 9.16E-02 | 5.42E-03 | 5.42E-03 |
| 0.00E+00 | 3.33E-03 | 0.00E+00 | 1.57E-02 | 7.68E-03 | 0.00E+00 | 0.00E+00 | 1.32E-01 | 2.11E-01 | 1.04E-05 | 2.10E-04 | 5.40E-06 | 4.57E-04 | 0.00E+00 | 5.55E-04 | 0.00E+00 | 9.16E-02 | 5.42E-03 | 5.42E-03 |
| 0.00E+00 | 1.50E-02 | 0.00E+00 | 7.19E-02 | 1.31E-01 | 0.00E+00 | 0.00E+00 | 4.76E-01 | 9.68E-01 | 5.26E-05 | 1.98E-02 | 3.31E-04 | 4.16E-03 | 0.00E+00 | 5.19E-02 | 0.00E+00 | 6.74E-01 | 4.93E-03 | 4.93E-03 |
| 0.00E+00 | 1.80E-04 | 0.00E+00 | 6.94E-03 | 6.24E-03 | 0.00E+00 | 0.00E+00 | 6.12E-03 | 9.34E-02 | 5.84E-06 | 2.04E-04 | 1.96E-06 | 1.99E-04 | 0.00E+00 | 1.76E-04 | 0.00E+00 | 8.50E-02 | 4.93E-03 | 4.93E-03 |
| 0.00E+00 | 4.87E-01 | 0.00E+00 | 7.35E+00 | 7.02E+00 | 0.00E+00 | 0.00E+00 | 1.06E+01 | 9.89E+01 | 6.21E-03 | 3.27E-01 | 4.02E-03 | 2.24E-01 | 0.00E+00 | 5.01E-01 | 0.00E+00 | 8.87E+01 | 2.36E-01 | 2.36E-01 |
| 0.00E+00 | 4.06E-01 | 0.00E+00 | 5.11E+00 | 4.98E+00 | 0.00E+00 | 0.00E+00 | 8.33E+00 | 6.88E+01 | 4.33E-03 | 2.52E-01 | 3.24E-03 | 1.59E-01 | 0.00E+00 | 4.20E-01 | 0.00E+00 | 6.14E+01 | 1.81E-01 | 1.81E-01 |
| 0.00E+00 | 5.84E-02 | 0.00E+00 | 2.26E+00 | 2.03E+00 | 0.00E+00 | 0.00E+00 | 1.99E+00 | 3.04E+01 | 1.90E-03 | 6.63E-02 | 6.36E-04 | 6.47E-02 | 0.00E+00 | 5.73E-02 | 0.00E+00 | 2.76E+01 | 1.94E-01 | 1.94E-01 |
| 0.00E+00 | 3.79E-01 | 0.00E+00 | 4.78E+00 | 4.65E+00 | 0.00E+00 | 0.00E+00 | 7.79E+00 | 6.43E+01 | 4.04E-03 | 2.36E-01 | 3.03E-03 | 1.48E-01 | 0.00E+00 | 3.92E-01 | 0.00E+00 | 5.74E+01 | 2.71E-01 | 2.71E-01 |
| 0.00E+00 | 1.03E-02 | 0.00E+00 | 1.38E-01 | 3.01E-01 | 0.00E+00 | 0.00E+00 | 5.95E-01 | 1.85E+00 | 5.29E-05 | 5.14E-02 | 8.73E-04 | 9.59E-03 | 0.00E+00 | 1.38E-01 | 0.00E+00 | 1.13E+00 | 2.27E-02 | 2.27E-02 |
| 0.00E+00 | 5.42E-02 | 0.00E+00 | 7.27E-01 | 1.59E+00 | 0.00E+00 | 0.00E+00 | 3.14E+00 | 9.78E+00 | 2.79E-04 | 2.71E-01 | 4.60E-03 | 5.06E-02 | 0.00E+00 | 7.27E-01 | 0.00E+00 | 5.97E+00 | 2.27E-02 | 2.27E-02 |
| 0.00E+00 | 3.34E-02 | 0.00E+00 | 5.08E-01 | 1.11E+00 | 0.00E+00 | 0.00E+00 | 2.15E+00 | 6.84E+00 | 1.92E-04 | 1.90E-01 | 3.22E-03 | 5.54E-02 | 0.00E+00 | 5.08E-01 | 0.00E+00 | 4.18E+00 | 2.27E-02 | 2.27E-02 |
| 0.00E+00 | 4.75E-02 | 0.00E+00 | 7.24E-01 | 1.58E+00 | 0.00E+00 | 0.00E+00 | 3.06E+00 | 9.75E+00 | 2.74E-04 | 2.70E-01 | 4.59E-03 | 5.04E-02 | 0.00E+00 | 7.24E-01 | 0.00E+00 | 5.95E+00 | 2.27E-02 | 2.27E-02 |
| 0.00E+00 | 4.67E-02 | 0.00E+00 | 6.26E-01 | 1.37E+00 | 0.00E+00 | 0.00E+00 | 2.70E+00 | 8.43E+00 | 2.41E-04 | 2.34E-01 | 3.97E-03 | 4.36E-02 | 0.00E+00 | 6.26E-01 | 0.00E+00 | 5.15E+00 | 2.27E-02 | 2.27E-02 |
| 0.00E+00 | 9.84E-01 | 0.00E+00 | 1.26E+01 | 2.75E+01 | 0.00E+00 | 0.00E+00 | 5.49E+01 | 1.70E+02 | 4.87E-03 | 4.70E+00 | 7.98E-02 | 8.77E-01 | 0.00E+00 | 1.26E+01 | 0.00E+00 | 1.04E+02 | 4.37E-01 | 4.37E-01 |
| 0.00E+00 | 1.00E-02 | 0.00E+00 | 4.05E-02 | 2.31E-02 | 0.00E+00 | 0.00E+00 | 3.51E-01 | 5.45E-01 | 2.73E-05 | 1.25E-03 | 2.57E-05 | 1.26E-03 | 0.00E+00 | 3.33E-03 | 0.00E+00 | 2.41E-01 | 4.17E-03 | 4.17E-03 |
| 0.00E+00 | 3.41E-01 | 0.00E+00 | 1.41E+00 | 2.88E+00 | 0.00E+00 | 0.00E+00 | 1.12E+01 | 1.89E+01 | 9.81E-04 | 4.75E-01 | 8.04E-03 | 9.20E-02 | 0.00E+00 | 1.27E+00 | 0.00E+00 | 1.21E+01 | 7.53E-02 | 7.53E-02 |
| 0.00E+00 | 4.69E-03 | 0.00E+00 | 1.94E-02 | 3.97E-02 | 0.00E+00 | 0.00E+00 | 1.55E-01 | 2.61E-01 | 1.35E-05 | 6.54E-03 | 1.11E-04 | 1.27E-03 | 0.00E+00 | 1.74E-02 | 0.00E+00 | 1.67E-01 | 3.61E-03 | 3.61E-03 |

| iline | Chromium III | Chromium VI | Cobalt | Copper | Di-n-butylphthalate | Fluoride | Lead | Manganese | Mercury | Nickel | Selenium | Silver | Thallium | Vanadium | Xylene | Zinc |
|--------|--------------|-------------|--------|--------|---------------------|----------|--------|-----------|---------|--------|----------|--------|----------|----------|--------|------|
| NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| 9.E-04 | NA | 4.E-01 | 2.E-02 | NA | 0.E+00 | 2.E+00 | 1.E-02 | 2.E-02 | 2.E-04 | 1.E-04 | NA | 0.E+00 | 9.E-03 | NA | 7.E-02 | |
| 3.E-02 | NA | 2.E+00 | 1.E-01 | NA | 0.E+00 | 3.E+01 | 9.E-02 | 1.E-01 | 3.E-03 | 3.E-03 | NA | 0.E+00 | 3.E-01 | NA | 4.E-01 | |
| 7.E-03 | NA | 6.E-01 | 7.E-02 | NA | 0.E+00 | 1.E+01 | 2.E-02 | 3.E-04 | 2.E-02 | 1.E-02 | NA | 0.E+00 | 2.E+00 | NA | 5.E-01 | |
| 5.E-03 | NA | 1.E-01 | 1.E-02 | NA | 0.E+00 | 6.E+00 | 5.E-03 | 2.E-03 | 5.E-03 | 2.E-03 | NA | 0.E+00 | 3.E-01 | NA | 1.E-01 | |
| 3.E-02 | NA | 2.E+00 | 2.E-01 | NA | 0.E+00 | 2.E+01 | 8.E-02 | 1.E-03 | 7.E-02 | 3.E-02 | NA | 0.E+00 | 5.E+00 | NA | 2.E+00 | |
| 5.E-01 | NA | 4.E+01 | 5.E+00 | NA | 0.E+00 | 9.E+02 | 2.E+00 | 2.E-02 | 2.E+00 | 6.E-01 | NA | 0.E+00 | 1.E+02 | NA | 3.E+01 | |
| 4.E-01 | NA | 2.E+01 | 2.E+00 | NA | 0.E+00 | 5.E+02 | 8.E-01 | 1.E-02 | 8.E-01 | 3.E-01 | NA | 0.E+00 | 5.E+01 | NA | 2.E+01 | |
| 3.E-01 | NA | 1.E+01 | 1.E+00 | NA | 0.E+00 | 3.E+02 | 5.E-01 | 7.E-03 | 5.E-01 | 2.E-01 | NA | 0.E+00 | 3.E+01 | NA | 1.E+01 | |
| 4.E-04 | NA | 1.E-02 | 4.E-04 | NA | 0.E+00 | 8.E-01 | 6.E-04 | 1.E-05 | 1.E-05 | 1.E-05 | NA | 0.E+00 | 1.E-03 | NA | 9.E-03 | |
| 6.E-05 | NA | 2.E-03 | 5.E-05 | NA | 0.E+00 | 8.E-02 | 7.E-05 | 2.E-06 | 2.E-06 | 1.E-06 | NA | 0.E+00 | 1.E-04 | NA | 1.E-03 | |
| 4.E-04 | NA | 1.E-02 | 3.E-04 | NA | 0.E+00 | 6.E-01 | 5.E-04 | 1.E-05 | 1.E-05 | 1.E-05 | NA | 0.E+00 | 9.E-04 | NA | 8.E-03 | |
| 2.E-02 | NA | 5.E-01 | 1.E-02 | NA | 0.E+00 | 3.E+01 | 2.E-02 | 5.E-04 | 5.E-04 | 4.E-04 | NA | 0.E+00 | 3.E-02 | NA | 3.E-01 | |
| 1.E-05 | NA | 5.E-04 | 1.E-05 | NA | 0.E+00 | 3.E-02 | 2.E-05 | 4.E-07 | 5.E-07 | 3.E-07 | NA | 0.E+00 | 3.E-05 | NA | 3.E-04 | |
| 6.E-05 | NA | 2.E-03 | 4.E-05 | NA | 0.E+00 | 1.E-01 | 7.E-05 | 2.E-06 | 2.E-06 | 1.E-06 | NA | 0.E+00 | 1.E-04 | NA | 1.E-03 | |
| 2.E-02 | NA | 7.E-01 | 2.E-02 | NA | 0.E+00 | 4.E+01 | 3.E-02 | 6.E-04 | 7.E-04 | 5.E-04 | NA | 0.E+00 | 4.E-02 | NA | 4.E-01 | |
| 2.E-03 | NA | 7.E-02 | 2.E-03 | NA | 0.E+00 | 4.E+00 | 3.E-03 | 6.E-05 | 1.E-04 | 7.E-05 | NA | 0.E+00 | 7.E-03 | NA | 5.E-02 | |
| 2.E-03 | NA | 7.E-02 | 2.E-03 | NA | 0.E+00 | 4.E+00 | 3.E-03 | 6.E-05 | 1.E-04 | 7.E-05 | NA | 0.E+00 | 7.E-03 | NA | 5.E-02 | |
| 7.E-03 | NA | 2.E-01 | 2.E-02 | NA | 0.E+00 | 2.E+01 | 9.E-03 | 2.E-04 | 6.E-03 | 1.E-02 | NA | 0.E+00 | 6.E-01 | NA | 2.E-01 | |
| 7.E-07 | 0.E+00 | 5.E-02 | 1.E-02 | 0.E+00 | 0.E+00 | 2.E-03 | 3.E-03 | 6.E-04 | 2.E-04 | 8.E-05 | 5.E-04 | 0.E+00 | 1.E-03 | 0.E+00 | 2.E-02 | |
| 2.E-03 | 0.E+00 | 5.E+01 | 1.E+01 | 0.E+00 | 0.E+00 | 4.E+00 | 3.E+00 | 7.E-01 | 4.E-01 | 2.E-01 | 5.E-01 | 0.E+00 | 3.E+00 | 0.E+00 | 2.E+01 | |
| 2.E-03 | 0.E+00 | 4.E+01 | 8.E+00 | 0.E+00 | 0.E+00 | 3.E+00 | 2.E+00 | 5.E-01 | 3.E-01 | 1.E-01 | 4.E-01 | 0.E+00 | 3.E+00 | 0.E+00 | 1.E+01 | |
| 2.E-04 | 0.E+00 | 2.E+01 | 3.E+00 | 0.E+00 | 0.E+00 | 7.E-01 | 1.E+00 | 2.E-01 | 8.E-02 | 3.E-02 | 2.E-01 | 0.E+00 | 4.E-01 | 0.E+00 | 7.E+00 | |
| 2.E-03 | 0.E+00 | 3.E+01 | 7.E+00 | 0.E+00 | 0.E+00 | 3.E+00 | 2.E+00 | 4.E-01 | 3.E-01 | 1.E-01 | 4.E-01 | 0.E+00 | 3.E+00 | 0.E+00 | 1.E+01 | |
| 4.E-05 | 0.E+00 | 1.E+00 | 5.E-01 | 0.E+00 | 0.E+00 | 2.E-01 | 6.E-02 | 6.E-03 | 6.E-02 | 3.E-02 | 2.E-02 | 0.E+00 | 9.E-01 | 0.E+00 | 3.E-01 | |
| 2.E-04 | 0.E+00 | 5.E+00 | 2.E+00 | 0.E+00 | 0.E+00 | 1.E+00 | 3.E-01 | 3.E-02 | 3.E-01 | 2.E-01 | 1.E-01 | 0.E+00 | 5.E+00 | 0.E+00 | 1.E+00 | |
| 1.E-04 | 0.E+00 | 4.E+00 | 2.E+00 | 0.E+00 | 0.E+00 | 8.E-01 | 2.E-01 | 2.E-02 | 2.E-01 | 1.E-01 | 8.E-02 | 0.E+00 | 3.E+00 | 0.E+00 | 1.E+00 | |
| 2.E-04 | 0.E+00 | 5.E+00 | 2.E+00 | 0.E+00 | 0.E+00 | 1.E+00 | 3.E-01 | 3.E-02 | 3.E-01 | 2.E-01 | 1.E-01 | 0.E+00 | 5.E+00 | 0.E+00 | 1.E+00 | |
| 2.E-04 | 0.E+00 | 4.E+00 | 2.E+00 | 0.E+00 | 0.E+00 | 1.E+00 | 3.E-01 | 3.E-02 | 3.E-01 | 2.E-01 | 1.E-01 | 0.E+00 | 4.E+00 | 0.E+00 | 1.E+00 | |
| 4.E-03 | 0.E+00 | 9.E+01 | 4.E+01 | 0.E+00 | 0.E+00 | 2.E+01 | 6.E+00 | 3.E+00 | 6.E+00 | 3.E+00 | 2.E+00 | 0.E+00 | 8.E+01 | 0.E+00 | 2.E+01 | |
| 4.E-05 | 0.E+00 | 3.E-01 | 1.E-02 | 0.E+00 | 0.E+00 | 1.E-01 | 2.E-02 | 3.E-03 | 2.E-03 | 1.E-03 | 3.E-03 | 0.E+00 | 2.E-02 | 0.E+00 | 7.E-03 | |
| 9.E-04 | 0.E+00 | 7.E+00 | 4.E+00 | 0.E+00 | 0.E+00 | 3.E+00 | 4.E-01 | 8.E-02 | 4.E-01 | 2.E-01 | 1.E-01 | 0.E+00 | 6.E+00 | 0.E+00 | 2.E+00 | |
| 1.E-05 | 0.E+00 | 5.E-03 | 6.E-02 | 0.E+00 | 0.E+00 | 5.E-02 | 6.E-03 | 1.E-03 | 5.E-04 | 3.E-03 | 2.E-03 | 0.E+00 | 8.E-02 | 0.E+00 | 3.E-02 | |
| NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |
| NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | |

Table L-10. Intakes (carcinogenic)—future resident at year 30 for ARA-25.

| Contaminant | Soil Ingestion | Dermal Absorption | Home Produce Ingestion | External Exposure | Inhalation of Fugitive Dust (mg/kg- pCi per day) | Inhalation of Volatiles (mg/kg-pCi per day) | Ingestion of Groundwater ARA-25 (mg/kg-day) | Dermal Absorption of Groundwater (mg/kg-day) | Inhalation of Volatiles From Indoor Water Use (mg/kg-day) |
|----------------------------|----------------|-------------------|------------------------|-------------------|--|---|---|--|---|
| Aroclor-1242 | — | — | — | — | — | — | — | — | — |
| Aroclor-1254 | — | — | — | — | — | — | — | — | — |
| Bis(2-ethylhexyl)phthalate | — | — | — | — | — | 0.00E+00 | — | — | 0.00E+00 |
| Diethylphthalate | — | — | — | — | — | — | — | — | — |
| Diethylether | — | — | — | — | — | — | — | — | — |
| Methylmethacrylate | — | — | — | — | — | 0.00E+00 | — | — | 0.00E+00 |
| Antimony | — | — | 6.91E-06 | — | — | — | — | — | — |
| Arsenic | 6.08E-05 | 1.14E-05 | — | — | 5.70E-08 | — | 2.64E-05 | 5.61E-08 | — |
| Barium | — | — | — | — | — | — | — | — | — |
| Cadmium | — | — | — | — | — | — | — | — | — |
| Chromium III | — | — | — | — | — | — | — | — | — |
| Chromium VI | — | — | — | — | — | — | — | — | — |
| Cobalt | — | — | — | — | — | — | — | — | — |
| Copper | — | — | — | — | — | — | — | — | — |
| Lead | — | — | 1.43E-01 | — | — | — | — | — | — |
| Manganese | 2.10E-03 | — | — | — | 1.96E-06 | — | 6.96E-05 | 1.48E-07 | — |
| Mercury | — | — | — | — | — | — | — | — | — |
| Nickel | — | — | — | — | — | — | — | — | — |
| Selenium | — | — | — | — | — | — | — | — | — |
| Silver | — | — | — | — | — | — | — | — | — |
| Thallium | — | — | — | — | — | — | — | — | — |
| Vanadium | — | — | — | — | — | — | — | — | — |
| Zinc | — | — | — | — | — | — | — | — | — |
| Chloride | — | — | — | — | — | — | — | — | — |
| Orthophosphate | — | — | — | — | — | — | — | — | — |

L-11

Table L-10. (continued).

| Contaminant | Soil Ingestion | Dermal Absorption | Home Produce Ingestion | External Exposure | Inhalation of Fugitive Dust (mg/kg- pCi per day) | Inhalation of Volatiles (mg/kg-pCi per day) | Ingestion of Groundwater ARA-25 (mg/kg-day) | Dermal Absorption of Groundwater (mg/kg-day) | Inhalation of Volatiles From Indoor Water Use (mg/kg-day) |
|-------------|----------------|-------------------|------------------------|-------------------|--|---|---|--|---|
| Sulfate | — | — | — | — | — | — | — | — | — |
| Ag-108m | — | — | — | — | — | — | — | — | — |
| Am-241 | — | — | 3.29E-05 | — | — | — | — | — | — |
| Co-60 | 1.18E-03 | — | 5.48E-15 | 2.70E-05 | 4.89E-03 | — | 4.66E-18 | 5.54E-27 | — |
| Cs-134 | 3.16E-13 | — | 1.05E+04 | 7.21E-15 | 2.61E-03 | — | — | — | — |
| Cs-137 | 4.12E+04 | — | 4.84E-02 | 9.39E+02 | 1.13E+00 | — | 1.27E-64 | 1.51E-73 | — |
| Eu-152 | 1.95E+01 | — | 8.49E-05 | 4.44E-01 | 1.24E-02 | — | — | — | — |
| Eu-154 | 5.28E-02 | — | — | 1.20E-03 | 7.23E-04 | — | — | — | — |
| Np-237 | — | — | — | — | — | — | — | — | — |
| Pu-238 | — | — | — | — | — | — | — | — | — |
| Pu-239/240 | — | — | 1.55E+03 | — | — | — | — | — | — |
| Ra-226 | 3.56E+04 | — | 8.94E+03 | 8.12E+02 | 7.45E-02 | — | 1.00E-07 | 1.19E-16 | — |
| Sr-90 | 5.78E+03 | — | — | 1.32E+02 | 1.83E-01 | — | 8.88E-12 | 1.06E-20 | — |
| Tc-99 | — | — | — | — | — | — | — | — | — |
| Th-228 | — | — | — | — | — | — | — | — | — |
| Th-230 | — | — | — | — | — | — | — | — | — |
| Th-232 | — | — | — | — | — | — | — | — | — |
| U-234 | — | — | — | — | — | — | — | — | — |
| U-235 | — | — | — | — | — | — | — | — | — |
| U-238 | — | — | — | — | — | — | — | — | — |

L-12

Table L-11. Intakes (noncarcinogenic)—future resident at year 100 at ARA-25.

| Contaminant | Soil Ingestion | Dermal Absorption | Home Produce Ingestion | Inhalation of Fugitive Dust (mg/kg-day or pCi) | Inhalation of Volatiles (mg/kg-day or pCi) | Ingestion of Groundwater (mg/kg-day) | Dermal Absorption of Groundwater (mg/kg-day) | Inhalation of Volatiles Indoor Water Use (mg/kg-day) |
|----------------------------|----------------|-------------------|------------------------|--|--|--------------------------------------|--|--|
| Aroclor-1242 | — | — | — | — | — | — | — | — |
| Aroclor-1254 | — | — | — | — | — | — | — | — |
| Bis(2-ethylhexyl)phthalate | — | — | — | — | 0.00E+00 | — | — | 0.00E+00 |
| Diethylphthalate | — | — | — | — | — | — | — | — |
| Diethylether | — | — | — | — | — | — | — | — |
| Methylmethacrylate | — | — | — | — | 0.00E+00 | — | — | 0.00E+00 |
| Antimony | — | — | — | — | — | — | — | — |
| Arsenic | 1.42E-04 | 2.67E-05 | 1.61E-05 | 3.17E-08 | — | 6.16E-05 | 3.93E-06 | — |
| Barium | — | — | — | — | — | — | — | — |
| Cadmium | — | — | — | — | — | — | — | — |
| Chromium III | — | — | — | — | — | — | — | — |
| Chromium VI | — | — | — | — | — | — | — | — |
| Cobalt | — | — | — | — | — | — | — | — |
| Copper | — | — | — | — | — | — | — | — |
| Lead | — | — | — | — | — | — | — | — |
| Manganese | 4.89E-03 | — | 3.32E-01 | 1.09E-06 | — | 1.62E-04 | 3.45E-06 | — |
| Mercury | — | — | — | — | — | — | — | — |
| Nickel | — | — | — | — | — | — | — | — |
| Selenium | — | — | — | — | — | — | — | — |
| Silver | — | — | — | — | — | — | — | — |
| Thallium | — | — | — | — | — | — | — | — |
| Vanadium | — | — | — | — | — | — | — | — |
| Zinc | — | — | — | — | — | — | — | — |
| Chloride | — | — | — | — | — | — | — | — |
| Orthophosphate | — | — | — | — | — | — | — | — |
| Sulfate | — | — | — | — | — | — | — | — |

Table L-12. Hazard quotients—future resident at year 100.

| Contaminant | Soil Ingestion | Dermal Absorption | Home Produce Ingestion | Inhalation of Fugitive Dust | Inhalation of Volatiles | Ingestion of Groundwater | Dermal Absorption of Groundwater | Inhalation of Volatiles From Indoor Water Use | Total HI ARA-25 |
|---|----------------|-------------------|------------------------|-----------------------------|-------------------------|--------------------------|----------------------------------|---|-----------------|
| Aroclor-1242 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor-1254 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bis(2-ethylhexyl)phthalate | --- | --- | --- | --- | NTD | --- | --- | NTD | --- |
| Diethylphthalate | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethylether | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylmethacrylate | --- | --- | --- | --- | NTD | --- | --- | NTD | --- |
| Antimony | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Arsenic | 5E-01 | 2E+00 | 1E-05 | NTD | --- | 2E-01 | 1E-02 | --- | 2E+00 |
| Barium | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium III | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium VI | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cobalt | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Copper | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Manganese | 3E-02 | --- | NTD | 3E-01 | --- | 1E-03 | 2E-05 | --- | 4E-01 |
| Mercury | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nickel | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Thallium | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vanadium | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Zinc | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloride | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Orthophosphate | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sulfate | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total hazard indices by pathway and site: | 5E-01 | 2E+00 | 1E-05 | 3E-01 | 0E+00 | 2E-01 | 1E-02 | 0E+00 | 3E+00 |

L-14

Table L-13. Intakes (carcinogenic)—worker at years 0 through 25 at ARA-25.

| Contaminant | Soil Ingestion | Dermal Absorption | External Exposure | Inhalation of Fugitive | |
|----------------------------|----------------|-------------------|-------------------|----------------------------|---|
| | | | | Dust (mg/kg-day or pCi) | Inhalation of Volatiles (mg/kg-day or pCi) |
| Aroclor-1242 | — | — | — | — | — |
| Aroclor-1254 | — | — | — | — | — |
| Bis(2-ethylhexyl)phthalate | — | — | — | — | 0.00E+00 |
| Diethylphthalate | — | — | — | — | — |
| Diethylether | — | — | — | — | — |
| Methylmethacrylate | — | — | — | — | 0.00E+00 |
| Antimony | — | — | — | — | — |
| Arsenic | 7.09E-06 | 4.54E-06 | — | 1.13E-08 | — |
| Barium | — | — | — | — | — |
| Cadmium | — | — | — | — | — |
| Chromium III | — | — | — | — | — |
| Chromium VI | — | — | — | — | — |
| Cobalt | — | — | — | — | — |
| Copper | — | — | — | — | — |
| Lead | — | — | — | — | — |
| Manganese | 2.45E-04 | — | — | 3.90E-07 | — |
| Mercury | — | — | — | — | — |
| Nickel | — | — | — | — | — |
| Selenium | — | — | — | — | — |
| Silver | — | — | — | — | — |
| Thallium | — | — | — | — | — |
| Vanadium | — | — | — | — | — |
| Zinc | — | — | — | — | — |

L-15

Table L-13. (continued).

| Contaminant | Soil Ingestion | Dermal Absorption | External Exposure | Inhalation of Fugitive Dust (mg/kg-day or pCi) | Inhalation of Volatiles (mg/kg-day or pCi) |
|----------------|----------------|-------------------|-------------------|---|---|
| Chloride | — | — | — | — | — |
| Orthophosphate | — | — | — | — | — |
| Sulfate | — | — | — | — | — |
| Ag-108m | — | — | — | — | — |
| Am-241 | — | — | — | — | — |
| Co-60 | 1.78E+02 | — | 3.25E+00 | 2.84E-04 | — |
| Cs-134 | 3.86E+01 | — | 7.05E-01 | 6.16E-05 | — |
| Cs-137 | 1.07E+05 | — | 1.95E+03 | 1.70E-01 | — |
| Eu-152 | 8.71E+02 | — | 1.59E+01 | 1.39E-03 | — |
| Eu-154 | 3.93E+01 | — | 7.17E-01 | 6.27E-05 | — |
| Np-237 | — | — | — | — | — |
| Pu-238 | — | — | — | — | — |
| Pu-239/240 | — | — | — | — | — |
| Ra-226 | 9.23E+03 | — | 1.68E+02 | 1.47E-02 | — |
| Sr-90 | 1.71E+04 | — | 3.11E+02 | 2.72E-02 | — |
| Tc-99 | — | — | — | — | — |
| Th-228 | — | — | — | — | — |
| Th-230 | — | — | — | — | — |
| Th-232 | — | — | — | — | — |
| U-234 | — | — | — | — | — |
| U-235 | — | — | — | — | — |
| U-238 | — | — | — | — | — |

Table L-14. Intakes (carcinogenic)—worker at years 0 through 25 at ARA-25.

| Contaminant | Soil Ingestion | Soil Absorption | Inhalation of Fugitive Dust (mg/kg-day or pCi) | Inhalation of Volatiles (mg/kg-day or pCi) |
|----------------------------|----------------|-----------------|---|---|
| Aroclor-1242 | — | — | — | — |
| Aroclor-1254 | — | — | — | — |
| Bis(2-ethylhexyl)phthalate | — | — | — | 0.00E+00 |
| Diethylphthalate | — | — | — | — |
| Diethylether | — | — | — | — |
| Methylmethacrylate | — | — | — | 0.00E+00 |
| Antimony | — | — | — | — |
| Arsenic | 1.99E-05 | 1.27E-05 | 3.17E-08 | — |
| Barium | — | — | — | — |
| Cadmium | — | — | — | — |
| Chromium III | — | — | — | — |
| Chromium VI | — | — | — | — |
| Cobalt | — | — | — | — |
| Copper | — | — | — | — |
| Lead | — | — | — | — |
| Manganese | 6.85E-04 | — | 1.09E-06 | — |
| Mercury | — | — | — | — |
| Nickel | — | — | — | — |
| Selenium | — | — | — | — |
| Silver | — | — | — | — |
| Thallium | — | — | — | — |
| Vanadium | — | — | — | — |
| Zinc | — | — | — | — |
| Chloride | — | — | — | — |
| Orthophosphate | — | — | — | — |
| Sulfate | — | — | — | — |

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Table L-15. Intakes (carcinogenic)—worker at years 100 through 125 at ARA-25.

| Contaminant | Soil Ingestion | Dermal Absorption | External Exposure | Inhalation of Fugitive | |
|----------------------------|----------------|-------------------|-------------------|----------------------------|---|
| | | | | Dust (mg/kg-day or pCi) | Inhalation of Volatiles (mg/kg-day or pCi) |
| Aroclor-1242 | — | — | — | — | — |
| Aroclor-1254 | — | — | — | — | — |
| Bis(2-ethylhexyl)phthalate | — | — | — | — | 0.00E+00 |
| Diethylphthalate | — | — | — | — | — |
| Diethylether | — | — | — | — | — |
| Methylmethacrylate | — | — | — | — | 0.00E+00 |
| Antimony | — | — | — | — | — |
| Arsenic | 7.09E-06 | 4.54E-06 | — | 1.13E-08 | — |
| Barium | — | — | — | — | — |
| Cadmium | — | — | — | — | — |
| Chromium III | — | — | — | — | — |
| Chromium VI | — | — | — | — | — |
| Cobalt | — | — | — | — | — |
| Copper | — | — | — | — | — |
| Lead | — | — | — | — | — |
| Manganese | 2.45E-04 | — | — | 3.90E-07 | — |
| Mercury | — | — | — | — | — |
| Nickel | — | — | — | — | — |
| Selenium | — | — | — | — | — |
| Silver | — | — | — | — | — |
| Thallium | — | — | — | — | — |
| Vanadium | — | — | — | — | — |
| Zinc | — | — | — | — | — |

Table L-15. (continued).

| Contaminant | Soil Ingestion | Dermal Absorption | External Exposure | Inhalation of Fugitive | |
|----------------|----------------|-------------------|-------------------|----------------------------|---|
| | | | | Dust (mg/kg-day or pCi) | Inhalation of Volatiles (mg/kg-day or pCi) |
| Chloride | — | — | — | — | — |
| Orthophosphate | — | — | — | — | — |
| Sulfate | — | — | — | — | — |
| Ag-108m | — | — | — | — | — |
| Am-241 | — | — | — | — | — |
| Co-60 | 3.46E-04 | — | 6.31E-06 | 5.52E-10 | — |
| Cs-134 | 9.41E-14 | — | 1.72E-15 | 1.71E-02 | — |
| Cs-137 | 1.08E+04 | — | 1.96E+02 | 1.71E-02 | — |
| Eu-152 | 5.33E+00 | — | 9.72E-02 | 8.49E-06 | — |
| Eu-154 | 1.49E-02 | — | 2.72E-04 | 2.38E-08 | — |
| Np-237 | — | — | — | — | — |
| Pu-238 | — | — | — | — | — |
| Pu-239/240 | — | — | — | — | — |
| Ra-226 | 8.84E+03 | — | 1.61E+02 | 1.41E-02 | — |
| Sr-90 | 1.51E+03 | — | 2.76E+01 | 2.41E-03 | — |
| Tc-99 | — | — | — | — | — |
| Th-228 | — | — | — | — | — |
| Th-230 | — | — | — | — | — |
| Th-232 | — | — | — | — | — |
| U-234 | — | — | — | — | — |
| U-235 | — | — | — | — | — |
| U-238 | — | — | — | — | — |

Table L-16. Intakes (noncarcinogenic)—worker at years 100 through 125 at ARA-25

| Contaminant | Soil Ingestion | Soil Absorption | Inhalation of fugitive dust (mg/kg-day or pCi) | Inhalation of Volatiles (mg/kg-day or pCi) |
|----------------------------|----------------|-----------------|---|---|
| Aroclor-1242 | — | — | — | — |
| Aroclor-1254 | — | — | — | — |
| Bis(2-ethylhexyl)phthalate | — | — | — | 0.00E+00 |
| Diethylphthalate | — | — | — | — |
| Diethylether | — | — | — | — |
| Methylmethacrylate | — | — | — | 0.00E+00 |
| Antimony | — | — | — | — |
| Arsenic | 1.99E-05 | 1.27E-05 | 3.17E-08 | — |
| Barium | — | — | — | — |
| Cadmium | — | — | — | — |
| Chromium III | — | — | — | — |
| Chromium VI | — | — | — | — |
| Cobalt | — | — | — | — |
| Copper | — | — | — | — |
| Lead | — | — | — | — |
| Manganese | 6.85E-04 | — | 1.09E-06 | — |
| Mercury | — | — | — | — |
| Nickel | — | — | — | — |
| Selenium | — | — | — | — |
| Silver | — | — | — | — |
| Thallium | — | — | — | — |
| Vanadium | — | — | — | — |
| Zinc | — | — | — | — |
| Chloride | — | — | — | — |
| Orthophosphate | — | — | — | — |
| Sulfate | — | — | — | — |

Table L-17. Risks—future resident at year 100 at ARA-25.

| Contaminant | Soil Ingestion ARA-25 | Dermal Absorption | Home Produce Ingestion | External Radiation Exposure | Inhalation of Fugitive Dust | Inhalation of Volatiles | Ingestion of Groundwater | Dermal Absorption of Groundwater | Inhalation of Volatiles from Indoor Water Use | Total Risk ARA-25 |
|----------------------------|--------------------------|----------------------|---------------------------|-----------------------------------|--------------------------------|----------------------------|-----------------------------|--|--|----------------------|
| Aroclor-1242 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Aroclor-1254 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bis(2-ethylhexyl)phthalate | --- | --- | --- | --- | --- | NTD | --- | --- | NTD | --- |
| Diethylphthalate | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Diethylether | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Methylmethacrylate | --- | --- | --- | --- | --- | NTD | --- | --- | NTD | --- |
| Antimony | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Arsenic | 9E-05 | 3E-04 | 1E-05 | --- | 9E-07 | --- | 4E-05 | 8E-08 | --- | 5E-04 |
| Barium | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cadmium | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium III | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chromium VI | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cobalt | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Copper | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lead | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Manganese | NTD | --- | NTD | --- | NTD | --- | NTD | NTD | --- | --- |
| Mercury | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Nickel | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Selenium | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Silver | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Thallium | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Vanadium | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Zinc | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Chloride | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Orthophosphate | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sulfate | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Ag-108m | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

Table L-18. (continued).

| Contaminant | Soil Ingestion ARA-25 | Dermal Absorption | Home Produce Ingestion | External Radiation Exposure | Inhalation of Fugitive Dust | Inhalation of Volatiles | Ingestion of Groundwater | Dermal Absorption of Groundwater | Inhalation of Volatiles from Indoor Water Use | Total Risk ARA-25 |
|----------------------|--------------------------|----------------------|---------------------------|-----------------------------------|--------------------------------|----------------------------|-----------------------------|--|--|----------------------|
| Am-241 | — | — | — | — | — | — | — | — | — | — |
| Co-60 | 2E-14 | — | 6E-16 | 3E-10 | 3E-13 | — | 9E-29 | 1E-37 | — | 3E-10 |
| Cs-134 | 1E-23 | — | 3E-25 | 4E-20 | 8E-14 | — | — | — | — | 8E-14 |
| Cs-137 | 1E-06 | — | 3E-07 | 2E-03 | 2E-11 | — | 4E-75 | 5E-84 | — | 2E-03 |
| Eu-152 | 1E-10 | — | 3E-13 | 2E-06 | 1E-12 | — | — | — | — | 2E-06 |
| Eu-154 | 5E-13 | — | 8E-16 | 6E-09 | 7E-14 | — | — | — | — | 6E-09 |
| Np-237 | — | — | — | — | — | — | — | — | — | — |
| Pu-238 | — | — | — | — | — | — | — | — | — | — |
| Pu-239/240 | — | — | — | — | — | — | — | — | — | — |
| Ra-226 | 1E-05 | — | 5E-07 | 5E-03 | 2E-10 | — | 3E-17 | 4E-26 | — | 5E-03 |
| Sr-90 | 3E-07 | — | 5E-07 | NTD | 1E-11 | — | 5E-22 | 6E-31 | — | 8E-07 |
| Tc-99 | — | — | — | — | — | — | — | — | — | — |
| Th-228 | — | — | — | — | — | — | — | — | — | — |
| Th-230 | — | — | — | — | — | — | — | — | — | — |
| Th-232 | — | — | — | — | — | — | — | — | — | — |
| U-234 | — | — | — | — | — | — | — | — | — | — |
| U-235 | — | — | — | — | — | — | — | — | — | — |
| U-238 | — | — | — | — | — | — | — | — | — | — |
| Total risks | | | | | | | | | | |
| by site and pathway: | 1E-04 | 3E-04 | 1E-05 | 7E-03 | 9E-07 | 0E+00 | 4E-05 | 8E-08 | 0E+00 | 8E-03 |

Table L-18. Risks—current occupational worker at ARA-25.

| Contaminant | Soil Ingestion | Soil Absorption | External Exposure | Inhalation of Fugitive dust | Inhalation of Volatiles | Total Risk |
|----------------------------|----------------|-----------------|-------------------|-----------------------------|-------------------------|------------|
| Aroclor-1242 | — | — | — | — | — | — |
| Aroclor-1254 | — | — | — | — | — | — |
| Bis(2-ethylhexyl)phthalate | — | — | — | — | NTD | — |
| Diethylphthalate | — | — | — | — | — | — |
| Diethylether | — | — | — | — | — | — |
| Methylmethacrylate | — | — | — | — | NTD | — |
| Antimony | — | — | — | — | — | — |
| Arsenic | 1E-05 | 1E-04 | — | 5E-07 | — | 1E-04 |
| Barium | — | — | — | — | — | — |
| Cadmium | — | — | — | — | — | — |
| Chromium III | — | — | — | — | — | — |
| Chromium VI | — | — | — | — | — | — |
| Cobalt | — | — | — | — | — | — |
| Copper | — | — | — | — | — | — |
| Lead | — | — | — | — | — | — |
| Manganese | NTD | — | — | NTD | — | — |
| Mercury | — | — | — | — | — | — |
| Nickel | — | — | — | — | — | — |
| Selenium | — | — | — | — | — | — |
| Silver | — | — | — | — | — | — |
| Thallium | — | — | — | — | — | — |
| Vanadium | — | — | — | — | — | — |
| Zinc | — | — | — | — | — | — |
| Chloride | — | — | — | — | — | — |
| Orthophosphate | — | — | — | — | — | — |
| Sulfate | — | — | — | — | — | — |
| Ag-108m | — | — | — | — | — | — |

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Table L-18. (continued).

| Contaminant | Soil Ingestion | Soil Absorption | External Exposure | Inhalation of Fugitive dust | Inhalation of Volatiles | Total Risk |
|----------------------------------|----------------|-----------------|-------------------|-----------------------------|-------------------------|------------|
| Am-241 | — | — | — | — | — | — |
| Co-60 | 3E-09 | — | 3E-05 | 2E-14 | — | 3E-05 |
| Cs-134 | 2E-09 | — | 4E-06 | 2E-15 | — | 4E-06 |
| Cs-137 | 3E-06 | — | 4E-03 | 3E-12 | — | 4E-03 |
| Eu-152 | 5E-09 | — | 6E-05 | 1E-13 | — | 6E-05 |
| Eu-154 | 4E-10 | — | 3E-06 | 6E-15 | — | 3E-06 |
| Np-237 | — | — | — | — | — | — |
| Pu-238 | — | — | — | — | — | — |
| Pu-239/240 | — | — | — | — | — | — |
| Ra-226 | 3E-06 | — | 1E-03 | 4E-11 | — | 1E-03 |
| Sr-90 | 1E-06 | — | NTD | 2E-12 | — | 1E-06 |
| Tc-99 | — | — | — | — | — | — |
| Th-228 | — | — | — | — | — | — |
| Th-230 | — | — | — | — | — | — |
| Th-232 | — | — | — | — | — | — |
| U-234 | — | — | — | — | — | — |
| U-235 | — | — | — | — | — | — |
| U-238 | — | — | — | — | — | — |
| Total risks by pathway and site: | 2E-05 | 1E-04 | 5E-03 | 5E-07 | 0E+00 | 5E-03 |

"—" indicates that the contaminant is not a COPC in the medium or at the site.

NTD indicates that toxicity data is not available.