5.15 Irreversible and Irretrievable Commitments of Resources

Irreversible and irretrievable commitments of resources (42 USC 4321) that likely would result from implementing any of the alternative groups or the No Action Alternative are addressed in this section. An irreversibly committed or irretrievable resource is one that is irreplaceably consumed and is non-renewable, is in limited supply, or cannot be replenished.

Implementation of any of the alternative groups would result in the irretrievable use of fossil fuels in construction activities, transport of materials and waste, and treatment processes. Bentonite clay, which is a limited resource, also would be committed. Although steel is not in limited supply, the steel used in drums and rebar essentially would be irretrievable. Land areas used for disposal facilities also would be irretrievably committed.

DOE anticipates that current contamination would preclude the beneficial use of groundwater underneath portions of the Hanford Site for the foreseeable future. It is assumed that the tritium and iodine-129 groundwater plumes would exceed the drinking water standards for the next several hundred years.

Within a few hundred years after disposal of wastes evaluated in the HSW EIS, some mobile radionuclides from the wastes would reach the vadose zone surrounding disposal areas and groundwater beneath the Hanford Site. Results of computer simulations (as presented in Sections 5.3 and 5.11) predict that levels of these contaminants in groundwater would be below DOE benchmark drinking water standards at 1 kilometer and below the DOE all-pathway limit for the hypothetical onsite resident gardener without a sauna or sweat lodge.

However, due to uncertainties in inventory estimates and mobility parameters, DOE considers groundwater underneath portions of the Hanford Site that is proximate to, or downgradient from, waste sites at Hanford to be irretrievably committed. At a minimum, depending on the location and time of interest, concentrations of radionuclides in groundwater might be such that it would be necessary to place some restrictions on groundwater usage (for example, restrictions on use of groundwater for saunas or sweat lodges late in the 10,000-year period of analysis; see Section 5.11 and Volume II, Appendix F).

The quantities of non-renewable resources that would be irreversibly or irretrievably committed are listed in Table 5.155.

In addition, geologic resources that form the above-grade cover for the waste disposal sites, as shown in Table 5.18 in Section 5.4, would, within the intent of the disposal site closure, be considered irreversibly committed.

Table 5.155. Irreversible and Irretrievable Commitments of Selected Resources by Alternative Group with ILAW

Resource (Units)[a]	Diesel[b] (m^3)	Gasoline (m^3)	Propane (t)	Bentonite Clay (t)	Steel[c] (t)	Land (ha)
Alternative Group A						
Hanford Only	132,900	260	12,700	13,900	1,720	169
Lower Bound	132,900	260	12,700	13,900	1,870	170
Upper Bound	133,700	270	19,300	18,200	2,280	178
Alternative Group B						
Hanford Only	136,600	340	23,500	33,600	1,800	187
Lower Bound	136,700	340	23,500	33,600	1,950	189
Upper Bound	140,600	430	38,300	57,600	2,380	210
Alternative Group C						
Hanford Only	65,900	260	12,700	13,900	1,720	151
Lower Bound	65,900	260	12,700	13,900	1,870	152
Upper Bound	66,700	270	19,300	18,200	2,280	160
Alternative Group D						
Hanford Only	65,900	260	18,800	13,900	1,710	150
Lower Bound	65,900	260	20,300	13,900	1,870	150
Upper Bound	66,700	270	27,800	18,200	2,280	155
Alternative Group E						
Hanford Only	65,900	260	18,800	12,800	1,710	150
Lower Bound	65,900	260	20,300	13,900	1,870	150
Upper Bound	66,700	270	27,800	18,200	2,280	155
No Action Alternative						
Hanford Only	188,600	48	3,560	0	59,100	273[d]
Lower Bound	188,700	50	3,560	0	59,200	275[d]

(a) Conversion factors: 1 m^3 (capacity) = 260 gal; 1 m^3 (volume) = 1.3 yd^3; and 1 t (metric tonne) = 1.1 tons.
(b) Includes 120,100 m^3 for ILAW in Alternative Groups A and B; 53,100 m^3 for ILAW in Alternative Groups C, D, and E; and 183,400 m^3 for ILAW in the No Action Alternative.
(c) Includes 1000 t for ILAW in Alternative Groups A through E and 33,200 t for ILAW in the No Action Alternative.
(d) Includes land committed to storage of waste at CWC.