4. DOE/ID-10865, "WASTE ACCEPTANCE CRITERIA FOR ICDF LANDFILL"

DOE/ID-10865, "Waste Acceptance Criteria for ICDF Landfill" including the main document and appendices should be amended with the following tables.

Table 3-3. in REV 7 and Table 5-2. ICDF Landfill Waste Acceptance Criteria

Constituent	Selected WAC Concentration Guideline (mg/kg or pCi/kg)	Landfill WAC Maximum Mass (kg or Ci)	Source of WAC Concentration Guideline
1,2-Cyclohexanediamine	3.4E+04	2.6E+07	Liner Compatibility
2-Amino-2-Methyl-1-Propanol	3.4E+04	2.5E+07	Liner Compatibility
2-Butoxy Ethanol	1.0E+05	7.6E+07	Regulatory Limit
Butyl Benzyl Phthalate	1.0E+05	7.6E+07	Regulatory Limit
Cyclohexanone	1.0E+05	7.6E+07	Regulatory Limit
Diethylene Glycol Monobutyl Ether	3.5E+04	2.6E+07	Liner Compatibility
Dibutyl Phthalate	1.0E+05	7.6E+07	Regulatory Limit
UV-Blue	3.3E+04	2.5E+07	Liner Compatibility

Table A-2. Selected Allowable Waste Soil Concentrations Based on RAOs.

Constituent Name	Type Type	Design Inventory Concentration [a] (pCi/kg or mg/kg)	Adjusted Maximum Inventory to Not Exceed Groundwater RAOs in 1E+06 yrs (pCi/kg or mg/kg)	Basis for Adjusted Concentration
1,2-Cyclohexanediamine	Organics	3.5E+02	**No Limit**	No toxicity data
2-Amino-2-Methyl-1-Propanol	Organics	1.7E+01	**No Limit**	No toxicity data
2-Butoxy Ethanol	Organics	1.4E+00	**No Limit**	Decays before reaching aquifer
Butyl Benzyl Phthalate	Organics	1.7E+01	**No Limit**	Decays before reaching aquifer
Cyclohexanone	Organics	6.2E+00	**No Limit**	Decays before reaching aquifer
Diethylene Glycol Monobutyl Ether	Organics	1.4E+00	**No Limit**	Decays before reaching aquifer
Dibutyl Phthalate	Organics	2.4E-02	**No Limit**	Decays before reaching aquifer
UV-Blue	Organics	8.7E+00	**No Limit**	No toxicity data

a. The constituents are all predicted to decay completely away in the ICDF landfill and vadose zone during transport to the aquifer. The following are the biodegradation half lives assumed for the calculations. The predicted water travel time to the aquifer is 30,000 years.

2-Butoxy Ethanol has an 8 week half life
Butyl Benzyl Phthalate has a 3 month half life
Cyclohexanone has an unknown half. The half life was conservatively assumed to be 100 years)
Diethylene Glycol Monobutyl Ether has an unknown half. The half life was conservatively assumed to be 100 years)
Dibutyl Phthalate has a 6 month half life

Table B-1. Maximum Allowable Concentration in Soil for Liner Compatability

Constituents	Average Leachate Concentration[a], C_{Liquid} (mg/L or pCi/L)	Design Inventory Concentration in Soil, C_{Soil} (mg/kg or pCi/kg)	Waste Soil to Leachate Ratio, C_{Soil}/C_{Liquid} (L/kg)	Max Concentration Allowed in Leachate for Compatability (mg/L or pCi/L)	Maximum Allowable Concentration in Soil For Compatability (mg/kg or pCi/kg)
1,2-Cyclohexanediamine	5.1E+03	3.5E+02	6.8E-02	5.0E+05	3.4E+04
2-Amino-2-Methyl-1-Propanol	2.6E+02	1.7E+01	6.7E-02	5.0E+05	3.4E+04
2-Butoxy Ethanol	1.4E+00	1.4E+00	1.0E+00	5.0E+05	5.0E+05
Butyl Benzyl Phthalate	1.7E-01	1.7E+01	1.0E+02	2.0E+05	2.0E07 (No Limit)
Cyclohexanone	8.5E+00	6.2E+00	7.3E-01	5.0E+05	3.6E+05
Diethylene Glycol Monobutyl Ether	2.0E+01	1.4E+00	6.9E-02	5.0E+05	3.5E+04
Dibutyl Phthalate	9.6E-09	2.4E-02	2.5E+06	1.0E+05	2.5E11 (No Limit)
UV-Blue	1.3E+02	8.7E+00	6.6E-02	5.0E+05	3.3E+04

Table D-1. WAC Concentration Selection

Constituent	Groundwater RAO Guidance Concentration [a] (mg/kg or pCi/kg)	Liner Compatability [b] (mg/kg or pCi/kg)	Regulatory Limitation [c] (mg/kg or pCi/kg)	Background [d] (mg/kg or pCi/kg)	Selected WAC Concentration (mg/kg or pCi/kg)	Source of WAC Concentration
1,2-Cyclohexanediamine	No Limit	3.4E+04	1.0E+05	NA	3.4E+04	Liner Compatibility
2-Amino-2-Methyl-1-Propanol	No Limit	3.4E+04	1.0E+05	NA	3.4E+04	Liner Compatibility
2-Butoxy Ethanol	No Limit	5.0E+05	1.0E+05	NA	1.0E+05	Regulatory Limit
Butyl Benzyl Phthalate	No Limit	2.0E07 (No Limit)	1.0E+05	NA	1.0E+05	Regulatory Limit
Cyclohexanone	No Limit	3.6E+05	1.0E+05	NA	1.0E+05	Regulatory Limit
Diethylene Glycol Monobutyl Ether	No Limit	3.5E+04	1.0E+05	NA	3.5E+04	Liner Compatibility
Dibutyl Phthalate	No Limit	2.5E11 (No Limit)	1.0E+05	NA	1.0E+05	Regulatory Limit
UV-Blue	No Limit	3.3E+04	1.0E+05	NA	3.3E+04	Liner Compatibility

a. From Table A-2 in the ICDF Landfill WAC.
b. from last column of Table B-1, "Maximum Allowable Concentration in Soil for Compatability"
c. comes from 40 CFR 264.1050(b). This is simply a 10% by weight limit. If the waste is less than 10% by waste, then it is not subject to the regulations applied to owners and operators of facilities that treat, store, or dispose of hazardous waste.
d. no organic background expected.

Table F-1. Comparison of Design Inventory and Waste Acceptance Criteria Concentrations.

Constituents	Design Inventory (DI) Mass or Activity (kg or Ci)	Waste Acceptance Criteria (WAC) Mass or Activity[a] (kg or Ci)	Mass or Activity Comparison (DI/WAC) %
1,2-Cyclohexanediamine	2.4E+01	2.6E+07	<0.0%
2-Amino-2-Methyl-1-Propanol	1.2E+00	2.5E+07	<0.0%
2-Butoxy Ethanol	9.5E-02	7.6E+07	<0.0%
Butyl Benzyl Phthalate	1.2E+00	7.6E+07	<0.0%
Cyclohexanone	4.2E-01	7.6E+07	<0.0%
Diethylene Glycol Monobutyl Ether	9.5E-02	2.6E+07	<0.0%
Dibutyl Phthalate	2.4E+00	7.6E+07	<0.0%
UV-Blue	5.9E-01	2.5E+07	<0.0%

a. from soil conc.(mg/kg) WAC (Table D-1) * bulk density (1946 Kg/m^3) * total ICDF soil volumn (389,923 m^3)/1E6 mg/Kg)

5. DOE/ID-10866, "WASTE ACCEPTANCE CRITERIA FOR ICDF EVAPORATION POND"

DOE/ID-10866, "Waste Acceptance Criteria for ICDF Evaporation Pond" including the main document and appendices should be amended with the following tables.

Table 5-2. Chemical Waste Acceptance Criteria for Evaporation Pond.

Constituent	ICDF Evaporation Pond WAC	Source of ICDF Evaporation Pond WAC
	(mg/L)	
1,2-Cyclohexanediamine	1.0E+05	40 CFR 264.1050(b)
2-Amino-2-Methyl-1-Propanol	1.0E+05	40 CFR 264.1050(b)
2-Butoxy Ethanol	1.0E+05	40 CFR 264.1050(b)
Butyl Benzyl Phthalate(Di-n-butylphalate)	1.0E+05	40 CFR 264.1050(b)
Cyclohexanone	1.0E+05	40 CFR 264.1050(b)
Dibutyl Phthalate	1.0E+05	40 CFR 264.1050(b) + Pond Liner
Diethylene Glycol Monobutyl Ether	1.0E+05	40 CFR 264.1050(b)
UV-Blue	1.0E+05	40 CFR 264.1050(b)

Table A-1. Suggested Maximum Leachate Concentrations for Organic Constituents for Liner Compatability.

Constituent	Predicted Peak Concentration in Leachate (a)	Compatilble Concentration For HDPE (bc)	Compatible Concentration for GCL (bc)	Compatible Concentration for Clay (bc)	Suggested Maximium Leachate Concentration (d)
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
1,2-Cyclohexanediamine	5.6E+03	5.0E+05	-	-	5.0E+05
2-Amino-2-Methyl-1-Propanol	2.9E+02	5.0E+05	-	-	5.0E+05
2-Butoxy Ethanol	2.2E+01	5.0E+05	-	-	5.0E+05
Butyl Benzyl Phthalate	2.0E+00	2.0E+05	-	-	2.0E+05
Cyclohexanone	8.4E+01	5.0E+05	-	-	5.0E+05
Dibutyl Phthalate (Di-n-butylphalate)	1.7E-04	1.0E+05	-	-	1.0E+05
Diethylene Glycol Monobutyl Ether	2.2E+01	5.0E+05	-	-	5.0E+05
UV-Blue	1.4E+02	5.0E+05	-	-	5.0E+05

a. Predicted peak leachate concentration of the ICDF landfill operation (EDF-ER-274). (from edf-er-274_app_c+compare-WAC.xls sheet ICDF comparison+calc, jmm calculated WAC). (Butyl benzyl phthalate of 200,000 and Dibutyl Phthalate (Di-n-butylphalate) of 100,000 comes from page 76 of EDF-ER-278).
b. "-" indicates that a specific test value was not available, compatibility issues are not anticipated.
c. From manufacturers specifications. (Table 5 in EDF-ER-278 lists 5.0E5 mg/L as the organics compatable concentration for HDPE liners.)
d. The suggested maximum concentration selected for the ICDF liner system is based on the lowest of the concentrations listed for HDPE, GCL, and clay materials and are applicable for the leachate in the landfill and the waste liquids in the evaporation ponds.

Table B-1. Maximum Allowable Evaporation Pond Liquid Concentration.

Constituent	Pond Liner Maximum concentrations[a]	Regulatory Limitations[b]	ICDF Evaporation Pond WAC[c]	Source of ICDF Evaporation Pond WAC
	(mg/L)	(mg/L)	(mg/L)	

1,2-Cyclohexanediamine	5.0E+05	1.0E+05	1.0E+05	40 CFR 264.1050(b)
2-Amino-2-Methyl-1-Propanol	5.0E+05	1.0E+05	1.0E+05	40 CFR 264.1050(b)
2-Butoxy Ethanol	5.0E+05	1.0E+05	1.0E+05	40 CFR 264.1050(b)
Butyl Benzyl Phthalate	2.0E+05	1.0E+05	1.0E+05	40 CFR 264.1050(b)
Cyclohexanone	5.0E+05	1.0E+05	1.0E+05	40 CFR 264.1050(b)
Dibutyl Phthalate (Di-n-butylphalate)	1.0E+05	1.0E+05	1.0E+05	40 CFR 264.1050(b) + Pond Liner
Diethylene Glycol Monobutyl Ether	5.0E+05	1.0E+05	1.0E+05	40 CFR 264.1050(b)
UV-Blue	5.0E+05	1.0E+05	1.0E+05	40 CFR 264.1050(b)

a. From Table A-1, Column 6.
b. Regulatory Limitations - comes from 40 CFR 264.1050(b). This is simply a 10% by weight limit. If the waste is less than 10% by waste, then it is not subject to the regulations applied to owners and operators of facilities that treat, store, or dispose of hazardous waste.
c. minimum between the pond liner and regulatory limitations.