Vol. 56 No. 21 Thursday, January 31, 1991 p 3864

This article, FR83, is divided into three files.
This is File C: Changes to federal regulations, Appendices to part 268 through end of article.

NOTE: This article contained several typographical errors when it was published in the Federal Register. Some of these errors in Table CCWE (268.41), Table 2 (268.42), and Table CCW (268.43) have been corrected in this electronic version of the article, based on information from EPA State and Regional Programs Branch.

13. Appendix IV to part 268 is revised to read as follows:

Appendix IV-Organometallic Lab Packs

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Hazardous waste with the following EPA Hazardous Waste Code No. may be placed in an "organometallic" or "Appendix IV lab pack:"

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P001, P002, P003, P004, P005, P006, P007, P008, P009, P013,
P014, P015, P016, P017, P018, P020, P021, P022, P023, P024,
P026, P027, P028, P029, P030, P031, P033, P034, P036, P037,
P038, P039, P040, P041, P042, P043, P044, P045, P046, P047,
P048, P049, P050, P051, P054, P056, P057, P058, P059, P060,
P062, P063, P064, P065, P066, P067, P068, P069, P070, P071,
P072, P073, P074, P075, P077, P081, P082, P084, P085, P087,
P088, P089, P092, P093, P094, P095, P096, P097, P098, P099,
P101, P102, P103, P104, P105, P106, P108, P109, P110, P111,
P112, P113, P114, P115, P116, P118, P119, P120, P121, P122,
P123.
U001, U002, U003, U004, U005, U006, U007, U008, U009, U010,
U011, U012, U014, U015, U016, U017, U018, U019, U020, U021,
U022, U023, U024, U025, U026, U027, U028, U029, U030, U031,
U032, U033, U034, U035, U036, U037, U038, U039, U041, U042,
U043, U044, U045, U046, U047, U048, U049, U050, U051, U052,
U053, U055, U056, U057, U058, U059, U060, U061, U062, U063,
U064, U066, U067, U068, U069, U070, U071, U072, U073, U074,
U075, U076, U077, U078, U079, U080, U081, U082, U083, U084,
U085, U086, U087, U088, U089, U090, U091, U092, U093, U094,
U095, U096, U097, U098, U099, U101, U102, U103, U105, U106,
U107, U108, U109, U110, U111, U112, U113, U114, U115, U116,
U117, U118, U119, U120, U121, U122, U123, U124, U125, U126,
U127, U128, U129, U130, U131, U132, U133, U136, U137, U138,
U140, U141, U142, U143, U144, U145, U146, U147, U148, U149,
U150, U152, U153, U154, U155, U156, U157, U158, U159, U160,
U161, U162, U163, U164, U165, U166, U167, U168, U169, U170,
U171, U172, U173, U174, U176, U177, U178, U179, U180, U181,
U182, U183, U184, U185, U186, U187, U188, U189, U190, U191,
U192, U193, U194, U196, U197, U200, U201, U202, U203, U204,
U205, U206, U207, U208, U209, U210, U211, U213, U214, U215,
U216, U217, U218, U219, U220, U221, U222, U223, U225, U226,
U227, U228, U234, U235, U236, U237, U238, U239, U240, U243,
U244, U246, U247, U248, U249.
F001, F002, F003, F004, F005, F006, F010, F020, F021, F022,
F023, F024, F025, F026, F027, F028, F039.

K001, K002, K008, K009, K010, K011, K013, K014, K015, K016,
K017, K018, K019, K020, K021, K022, K023, K024, K025, K026,
K027, K028, K029, K030, K031, K032, K033, K034, K035, K036,
K037, K038, K039, K040, K041, K042, K043, K044, K045, K046,
K047, K048, K049, K050, K051, K052, K060, K061, K069, K071,
K073, K083, K084, K085, K086, K087, K093, K094, K095, K096,
K097, K098, K099, K101, K102, K103, K104, K105, K113, K114,
K115, K116.
D001, D002, D003, D004, D005, D006, D007, D008, D010, D011,
D012, D013, D014, D015, D016, D017.

14. Part 268, appendix V is revised to read as follows:

Appendix V-Organic Lab Packs

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Hazardous waste with the following EPA Hazardous Waste Code No. may be placed in an "organic" or "Appendix V" lab pack:

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P001, P002, P003, P004, P005, P007, P008, P009, P014, P016,
P017, P018, P020, P021, P022, P023, P024, P026, P027, P028,
P030, P031, P033, P034, P037, P039, P040, P041, P042, P043,
P044, P045, P046, P047, P048, P049, P050, P051, P054, P057,
P058, P059, P060, P062, P063, P064, P066, P067, P068, P069,
P070, P071, P072, P075, P077, P081, P082, P084, P085, P088,
P089, P093, P094, P095, P097, P098, P101, P102, P105, P106,
P108, P109, P111, P112, P116, P118, P123.
U001, U002, U003, U004, U005, U006, U007, U008, U009, U010,
U011, U012, U014, U015, U016, U017, U018, U019, U020, U021,
U022, U023, U024, U025, U026, U027, U028, U029, U030, U031,
U033, U034, U035, U036, U037, U038, U039, U041, U042, U043,
U044, U045, U046, U047, U048, U049, U050, U052, U053, U055,
U056, U057, U058, U059, U060, U061, U062, U063, U064, U066,
U067, U068, U069, U070, U071, U072, U073, U074, U075, U076,
U077, U078, U079, U080, U081, U082, U083, U084, U085, U086,
U087, U088, U089, U090, U091, U092, U093, U094, U095, U096,
U097, U098, U099, U101, U102, U103, U105, U106, U107, U108,
U109, U110, U111, U112, U113, U114, U115, U116, U117, U118,
U119, U120, U121, U122, U123, U124, U125, U126, U127, U128,
U129, U130, U131, U132, U133, U135, U137, U138, U140, U141,
U142, U143, U147, U148, U149, U150, U152, U153, U154, U155,
U156, U157, U158, U159, U160, U161, U162, U163, U164, U165,
U166, U167, U168, U169, U170, U171, U172, U173, U174, U176,
U177, U178, U179, U180, U181, U182, U183, U184, U185, U186,
U187, U188, U189, U190, U191, U192, U193, U194, U196, U197,
U200, U201, U202, U203, U206, U207, U208, U209, U210, U211,
U213, U218, U219, U220, U221, U222, U223, U225, U226, U227,
U228, U234, U235, U236, U237, U238, U239, U240, U243, U244,
U246, U247, U248, U249.
F001, F002, F003, F004, F005, F010, F020, F021, F022, F023,
F025, F026, F027, F028.
K009, K010, K011, K013, K014, K016, K017, K018, K019, K020,
K023, K024, K025, K026, K027, K029, K030, K032, K033, K034,

K035, K036, K037, K038, K039, K040, K041, K042, K043, K044,
K045, K047, K060, K073, K085, K093, K094, K095, K096, K097,
K098, K099, K103, K104, K105, K113, K114, K116.
D001, D012, D013, D014, D015, D016, D017.

15. Appendix VII to part 268 is revised to read as follows:

Appendix VII

Table 1.-Effective Dates of Surface Disposed Wastes (Non-Soil and Debris) Regulated in the LDRs[a] - Comprehensive List

| Waste code | Waste category | Effective date |
|---|---|---|
| California list | Liquid hazardous wastes, including free liquids associated with solid or sludge, containing free cyanides at concentrations greater than or equal to 1,000 mg/l or certain metals or compounds of these metals greater than or equal to the prohibition levels | July 8, 1987. |
| California list | Liquid (aqueous) hazardous wastes having a pH less than or equal to 2 | July 8, 1987. |
| California list | Dilute HOC wastewaters, defined as HOC-waste mixtures that are primarily water and that contain greater than or equal to 1,000 mg /l but less than 10,000 mg/l | July 8, 1987. |
| California list | Liquid hazardous waste containing PCBs greater than or equal to 50 ppm | July 8, 1987. |
| California list | Other liquid and nonliquid hazardous wastes containing HOCs in total concentration greater than or equal to 1,000 mg | Nov. 8, 1988. |
| D001 | All | Aug. 8, 1990. |
| D002 | All | Aug. 8, 1990. |
| D003 | All | Aug. 8, 1990. |
| D004 | Wastewater | Aug. 8, 1990. |
| D004 | Nonwastewater | May 8, 1992. |
| D005 | All | Aug. 8, 1990. |
| D006 | All | Aug. 8, 1990. |
| D007 | All | Aug. 8, 1990. |
| D008 | Lead materials before secondary smelting | May 8, 1992. |
| D008 | All others | Aug. 8, 1990. |
| D009 | Nonwastewater | May 8, 1992. |
| D009 | All others | Aug. 8, 1990. |
| D010 | All | Aug. 8, 1990. |
| D011 | All | Aug. 8, 1990. |
| D012 | All | Aug. 8, 1990. |
| D013 | All | Aug. 8, 1990. |
| D014 | All | Aug. 8, 1990. |
| D015 | All | Aug. 8, 1990. |
| D016 | All | Aug. 8, 1990. |
| D017 | All | Aug. 8, 1990. |
| F001 | Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids | Nov. 8, 1988. |
| F001 | All others | Nov. 8, 1986. |
| F002 (1,1,2-trichloroethane) | Wastewater and Nonwastewater | Aug. 8, 1990. |
| F002 | Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids | Nov. 8, 1988. |
| F002 | All others | Nov. 8, 1986. |
| F003 | Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids | Nov. 8, 1988. |
| F003 | All others | Nov. 8, 1986. |
| F004 | Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids | Nov. 8, 1988. |

| | | |
|---|---|---|
| F004 | All others | Nov. 8, 1986. |
| F005 (benzene, 2-ethoxy ethanol, 2-nitropropane) | Wastewater and Nonwastewater | Aug. 8, 1990. |
| F005 | Small quantity generators, CERCLA response/RCRA corrective action, initial generator's solvent-water mixtures, solvent-containing sludges and solids | Nov. 8, 1988. |
| F005 | All others | Nov. 8, 1986. |
| F006 | Wastewater | Aug. 8, 1990. |
| F006 | Nonwastewater | Aug. 8, 1988. |
| F006 (cyanides) | Nonwastewater | July 8, 1989. |
| F007 | All | July 8, 1989. |
| F008 | All | July 8, 1989. |
| F009 | All | July 8, 1989. |
| F010 | All | June 8, 1989. |
| F011 (cyanides) | Nonwastewater | Dec. 8, 1989. |
| F011 | All others | July 8, 1989. |
| F012 (cyanides) | Nonwastewater | Dec. 8, 1989. |
| F012 | All others | July 8, 1989. |
| F019 | All | Aug. 8, 1990. |
| F020 | All | Nov. 8, 1988. |
| F021 | All | Nov. 8, 1988. |
| F022 | All | Nov. 8, 1988. |
| F023 | All | Nov. 8, 1988. |
| F024 (metals) | Wastewater | June 8, 1989. |
| F024 (metals) | Nonwastewater | Aug. 8, 1990. |
| F024[b] | All others | June 8, 1989. |
| F025 | All | Aug. 8, 1990. |
| F026 | All | Nov. 8, 1988. |
| F027 | All | Nov. 8, 1988. |
| F028 | All | Nov. 8, 1988. |
| F039 | Wastewater | Aug. 8, 1990. |
| F039 | Nonwastewater | May 8, 1992. |
| K001 (organics)[b] | All | Aug. 8, 1988. |
| K001 | All others | Aug. 8, 1988. |
| K002 | All | Aug. 8, 1990. |
| K003 | All | Aug. 8, 1990. |
| K004 | Wastewater | Aug. 8, 1990. |
| K004[c] | Nonwastewater | Aug. 8, 1988. |
| K005 | Wastewater | Aug. 8, 1990. |
| K005[c] | Nonwastewater | June 8, 1989. |
| K006 | All | Aug. 8, 1990. |
| K007 | Wastewater | Aug. 8, 1990. |
| K007[c] | Nonwastewater | June 8, 1989. |
| K008 | Wastewater | Aug. 8, 1990. |
| K008[c] | Nonwastewater | Aug. 8, 1988. |
| K009 | All | June 8, 1989. |
| K010 | All | June 8, 1989. |
| K011 | Wastewater | Aug. 8, 1990. |
| K011 | Nonwastewater | June 8, 1989. |
| K013 | Wastewater | Aug. 8, 1990. |
| K013 | Nonwastewater | June 8, 1989. |
| K014 | Wastewater | Aug. 8, 1990. |
| K014 | Nonwastewater | June 8, 1989. |
| K015 | Wastewater | Aug. 8, 1988. |
| K015 | Nonwastewater | Aug. 8, 1990. |
| K016 | All | Aug. 8, 1988. |
| K017 | All | Aug. 8, 1990. |
| K018 | All | Aug. 8, 1988. |
| K019 | All | Aug. 8, 1988. |
| K020 | All | Aug. 8, 1988. |
| K021 | Wastewater | Aug. 8, 1990. |
| K021[c] | Nonwastewater | Aug. 8, 1988. |

| | | |
|---|---|---|
| K022 | Wastewater | Aug. 8, 1990. |
| K022 | Nonwastewater | Aug. 8, 1988. |
| K023 | All | June 8, 1989. |
| K024 | All | Aug. 8, 1988. |
| K025 | Wastewater | Aug. 8, 1990. |
| K025[c] | Nonwastewater | Aug. 8, 1988. |
| K026 | All | Aug. 8, 1990. |
| K027 | All | June 8, 1989. |
| K028 (metals) | Nonwastewater | Aug. 8, 1990. |
| K028 | All others | June 8, 1989. |
| K029 | Wastewater | Aug. 8, 1990. |
| K029 | Nonwastewater | June 8, 1989. |
| K030 | All | Aug. 8, 1988. |
| K031 | Wastewater | Aug. 8, 1990. |
| K031 | Nonwastewater | May 8, 1992. |
| K032 | All | Aug. 8, 1990. |
| K033 | All | Aug. 8, 1990. |
| K034 | All | Aug. 8, 1990. |
| K035 | All | Aug. 8, 1990. |
| K036 | Wastewater | June 8, 1989. |
| K036[c] | Nonwastewater | Aug. 8, 1988. |
| K037[b] | Wastewater | Aug. 8, 1988. |
| K037 | Nonwastewater | Aug. 8, 1988. |
| K038 | All | June 8, 1989. |
| K039 | All | June 8, 1989. |
| K040 | All | June 8, 1989. |
| K041 | All | Aug. 8, 1990. |
| K042 | All | Aug. 8, 1990. |
| K043 | All | June 8, 1989. |
| K044[c] | All | Aug. 8, 1988. |
| K045[c] | All | Aug. 8, 1988. |
| K046 (Nonreactive) | Nonwastewater | Aug. 8, 1988. |
| K046 | All others | Aug. 8, 1990. |
| K047[c] | All | Aug. 8, 1988. |
| K048 | Wastewater | Aug. 8, 1990. |
| K048 | Nonwastewater | Nov. 8, 1990. |
| K049 | Wastewater | Aug. 8, 1990. |
| K049 | Nonwastewater | Nov. 8, 1990. |
| K050 | Wastewater | Aug. 8, 1990. |
| K050 | Nonwastewater | Nov. 8, 1990. |
| K051 | Wastewater | Aug. 8, 1990. |
| K051 | Nonwastewater | Nov. 8, 1990. |
| K052 | Wastewater | Aug. 8, 1990. |
| K052 | Nonwastewater | Nov. 8, 1990. |
| K060 | Wastewater | Aug. 8, 1990. |
| K060[c] | Nonwastewater | Aug. 8, 1988. |
| K061 | Wastewater | Aug. 8, 1990. |
| K061 (low zinc) (interim standard for high zinc remains in effect until August 7, 1991). | Nonwastewater | Aug. 8, 1988. |
| K062 | All | Aug. 8, 1988. |
| K069 (Non-Calcium Sulfate)[c] | Nonwastewater | Aug. 8, 1988. |
| K069 | All others | Aug. 8, 1990. |
| K071 | All | Aug. 8, 1990. |
| K073 | All | Aug. 8, 1990. |
| K083 | All | Aug. 8, 1990. |
| K084 | Wastewater | Aug. 8, 1990. |

| | | |
|---|---|---|
| K084 | Nonwastewater | May 8, 1992. |
| K085 | All | Aug. 8, 1990. |
| K086 (organics)[b] | All | Aug. 8, 1988. |
| K086 | All others | Aug. 8, 1988. |
| K087 | All | Aug. 8, 1988. |
| K093 | All | June 8, 1989. |
| K094 | All | June 8, 1989. |
| K095 | Wastewater | Aug. 8, 1990. |
| K095 | Nonwastewater | June 8, 1989. |
| K096 | Wastewater | Aug. 8, 1990. |
| K096 | Nonwastewater | June 8, 1989. |
| K097 | All | Aug. 8, 1990. |
| K098 | All | Aug. 8, 1990. |
| K099 | All | Aug. 8, 1988. |
| K100 | Wastewater | Aug. 8, 1990. |
| K100[c] | Nonwastewater | Aug. 8, 1988. |
| K101 (organics) | Wastewater | Aug. 8, 1988. |
| K101 (metals) | Wastewater | Aug. 8, 1990. |
| K101 (organics) | Nonwastewater | Aug. 8, 1988. |
| K101 (metals) | Nonwastewater | May 8, 1992. |
| K102 (organics) | Wastewater | Aug. 8, 1988. |
| K102 (metals) | Wastewater | Aug. 8, 1990. |
| K102 (organics) | Nonwastewater | Aug. 8, 1988. |
| K102 (metals) | Nonwastewater | May 8, 1992. |
| K103 | All | Aug. 8, 1988. |
| K104 | All | Aug. 8, 1988. |
| K105 | All | Aug. 8, 1990. |
| K106 | Wastewater | Aug. 8, 1990. |
| K106 | Nonwastewater | May 8, 1992. |
| K113 | All | June 8, 1989. |
| K114 | All | June 8, 1989. |
| K115 | All | June 8, 1989. |
| K116 | All | June 8, 1989. |
| P001 | All | Aug 8, 1990. |
| P002 | All | Aug. 8, 1990. |
| P003 | All | Aug. 8, 1990. |
| P004 | All | Aug. 8, 1990. |
| P005 | All | Aug. 8, 1990. |
| P006 | All | Aug. 8, 1990. |
| P007 | All | Aug. 8, 1990. |
| P008 | All | Aug. 8, 1990. |
| P009 | All | Aug. 8, 1990. |
| P010 | Wastewater | Aug. 8, 1990. |
| P010 | Nonwastewater | May 8, 1992. |
| P011 | Wastewater | Aug. 8, 1990. |
| P011 | Nonwastewater | May 8, 1992. |
| P012 | Wastewater | Aug. 8, 1990. |
| P012 | Nonwastewater | May 8, 1992. |
| P013 (barium) | Nonwastewater | Aug. 8, 1990. |
| P013 | All others | June 8, 1989. |
| P014 | All | Aug. 8, 1990. |
| P015 | All | Aug. 8, 1990. |
| P016 | All | Aug. 8, 1990. |
| P017 | All | Aug. 8, 1990. |
| P018 | All | Aug. 8, 1990. |
| P020 | All | Aug. 8, 1990. |
| P021 | All | June 8, 1989. |
| P022 | All | Aug. 8, 1990. |
| P023 | All | Aug. 8, 1990. |
| P024 | All | Aug. 8, 1990. |
| P026 | All | Aug. 8, 1990. |
| P027 | All | Aug. 8, 1990. |

| | | |
|---|---|---|
| P028 | All | Aug. 8, 1990. |
| P029 | All | June 8, 1989. |
| P030 | All | June 8, 1989. |
| P031 | All | Aug. 8, 1990. |
| P033 | All | Aug. 8, 1990. |
| P034 | All | Aug. 8, 1990. |
| P036 | Wastewater | Aug. 8, 1990. |
| P036 | Nonwastewater | May 8, 1992. |
| P037 | All | Aug. 8, 1990. |
| P038 | Wastewater | Aug. 8, 1990. |
| P038 | Nonwastewater | May 8, 1992. |
| P039 | All | June 8, 1989. |
| P040 | All | June 8, 1989. |
| P041 | All | June 8, 1989. |
| P042 | All | Aug. 8, 1990. |
| P043 | All | June 8, 1989. |
| P044 | All | June 8, 1989. |
| P045 | All | Aug. 8, 1990. |
| P046 | All | Aug. 8, 1990. |
| P047 | All | Aug. 8, 1990. |
| P048 | All | Aug. 8, 1990. |
| P049 | All | Aug. 8, 1990. |
| P050 | All | Aug. 8, 1990. |
| P051 | All | Aug. 8, 1990. |
| P054 | All | Aug. 8, 1990. |
| P056 | All | Aug. 8, 1990. |
| P057 | All | Aug. 8, 1990. |
| P058 | All | Aug. 8, 1990. |
| P059 | All | Aug. 8, 1990. |
| P060 | All | Aug. 8, 1990. |
| P062 | All | June 8, 1989. |
| P063 | All | June 8, 1989. |
| P064 | All | Aug. 8, 1990. |
| P065 | Wastewater | Aug. 8, 1990. |
| P065 | Nonwastewater | May 8, 1992. |
| P066 | All | Aug. 8, 1990. |
| P067 | All | Aug. 8, 1990. |
| P068 | All | Aug. 8, 1990. |
| P069 | All | Aug. 8, 1990. |
| P070 | All | Aug. 8, 1990. |
| P071 | All | June 8, 1989. |
| P072 | All | Aug. 8, 1990. |
| P073 | All | Aug. 8, 1990. |
| P074 | All | June 8, 1989. |
| P075 | All | Aug. 8, 1990. |
| P076 | All | Aug. 8, 1990. |
| P077 | All | Aug. 8, 1990. |
| P078 | All | Aug. 8, 1990. |
| P081 | All | Aug. 8, 1990. |
| P082 | All | Aug. 8, 1990. |
| P084 | All | Aug. 8, 1990. |
| P085 | All | June 8, 1989. |
| P087 | All | May 8, 1992. |
| P088 | All | Aug. 8, 1990. |
| P089 | All | June 8, 1989. |
| P092 | Wastewater | Aug. 8, 1990. |
| P092 | Nonwastewater | May 8, 1992. |
| P093 | All | Aug. 8, 1990. |
| P094 | All | June 8, 1989. |
| P095 | All | Aug. 8, 1990. |
| P096 | All | Aug. 8, 1990. |
| P097 | All | June 8, 1989. |

| | | |
|---|---|---|
| P098 | All | June 8, 1989. |
| P099 (silver) | Wastewater | Aug. 8, 1990. |
| P099 | All others | June 8, 1989. |
| P101 | All | Aug. 8, 1990. |
| P102 | All | Aug. 8, 1990. |
| P103 | All | Aug. 8, 1990. |
| P104 (silver) | Wastewater | Aug. 8, 1990. |
| P104 | All others | June 8, 1989. |
| P105 | All | Aug. 8, 1990. |
| P106 | All | June 8, 1989. |
| P108 | All | Aug. 8, 1990. |
| P109 | All | June 8, 1989. |
| P110 | All | Aug. 8, 1990. |
| P111 | All | June 8, 1989. |
| P112 | All | Aug. 8, 1990. |
| P113 | All | Aug. 8, 1990. |
| P114 | All | Aug. 8, 1990. |
| P115 | All | Aug. 8, 1990. |
| P116 | All | Aug. 8, 1990. |
| P118 | All | Aug. 8, 1990. |
| P119 | All | Aug. 8, 1990. |
| P120 | All | Aug. 8, 1990. |
| P121 | All | June 8, 1989. |
| P122 | All | Aug. 8, 1990. |
| P123 | All | Aug. 8, 1990. |
| U001 | All | Aug. 8, 1990. |
| U002 | All | Aug. 8, 1990. |
| U003 | All | Aug. 8, 1990. |
| U004 | All | Aug. 8, 1990. |
| U005 | All | Aug. 8, 1990. |
| U006 | All | Aug. 8, 1990. |
| U007 | All | Aug. 8, 1990. |
| U008 | All | Aug. 8, 1990. |
| U009 | All | Aug. 8, 1990. |
| U010 | All | Aug. 8, 1990. |
| U011 | All | Aug. 8, 1990. |
| U012 | All | Aug. 8, 1990. |
| U014 | All | Aug. 8, 1990. |
| U015 | All | Aug. 8, 1990. |
| U016 | All | Aug. 8, 1990. |
| U017 | All | Aug. 8, 1990. |
| U018 | All | Aug. 8, 1990. |
| U019 | All | Aug. 8, 1990. |
| U020 | All | Aug. 8, 1990. |
| U021 | All | Aug. 8, 1990. |
| U022 | All | Aug. 8, 1990. |
| U023 | All | Aug. 8, 1990. |
| U024 | All | Aug. 8, 1990. |
| U025 | All | Aug. 8, 1990. |
| U026 | All | Aug. 8, 1990. |
| U027 | All | Aug. 8, 1990. |
| U028 | All | June 8, 1989. |
| U029 | All | Aug. 8, 1990. |
| U030 | All | Aug. 8, 1990. |
| U031 | All | Aug. 8, 1990. |
| U032 | All | Aug. 8, 1990. |
| U033 | All | Aug. 8, 1990. |
| U034 | All | Aug. 8, 1990. |
| U035 | All | Aug. 8, 1990. |
| U036 | All | Aug. 8, 1990. |
| U037 | All | Aug. 8, 1990. |
| U038 | All | Aug. 8, 1990. |

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|---|---|---|
| U039 | All | Aug. 8, 1990. |
| U041 | All | Aug. 8, 1990. |
| U042 | All | Aug. 8, 1990. |
| U043 | All | Aug. 8, 1990. |
| U044 | All | Aug. 8, 1990. |
| U045 | All | Aug. 8, 1990. |
| U046 | All | Aug. 8, 1990. |
| U047 | All | Aug. 8, 1990. |
| U048 | All | Aug. 8, 1990. |
| U049 | All | Aug. 8, 1990. |
| U050 | All | Aug. 8, 1990. |
| U051 | All | Aug. 8, 1990. |
| U052 | All | Aug. 8, 1990. |
| U053 | All | Aug. 8, 1990. |
| U055 | All | Aug. 8, 1990. |
| U056 | All | Aug. 8, 1990. |
| U057 | All | Aug. 8, 1990. |
| U058 | All | June 8, 1989. |
| U059 | All | Aug. 8, 1990. |
| U060 | All | Aug. 8, 1990. |
| U061 | All | Aug. 8, 1990. |
| U062 | All | Aug. 8, 1990. |
| U063 | All | Aug. 8, 1990. |
| U064 | All | Aug. 8, 1990. |
| U066 | All | Aug. 8, 1990. |
| U067 | All | Aug. 8, 1990. |
| U068 | All | Aug. 8, 1990. |
| U069 | All | June 8, 1989. |
| U070 | All | Aug. 8, 1990. |
| U071 | All | Aug. 8, 1990. |
| U072 | All | Aug. 8, 1990. |
| U073 | All | Aug. 8, 1990. |
| U074 | All | Aug. 8, 1990. |
| U075 | All | Aug. 8, 1990. |
| U076 | All | Aug. 8, 1990. |
| U077 | All | Aug. 8, 1990. |
| U078 | All | Aug. 8, 1990. |
| U079 | All | Aug. 8, 1990. |
| U080 | All | Aug. 8, 1990. |
| U081 | All | Aug. 8, 1990. |
| U082 | All | Aug. 8, 1990. |
| U083 | All | Aug. 8, 1990. |
| U084 | All | Aug. 8, 1990. |
| U085 | All | Aug. 8, 1990. |
| U086 | All | Aug. 8, 1990. |
| U087 | All | June 8, 1989. |
| U088 | All | June 8, 1989. |
| U089 | All | Aug. 8, 1990. |
| U090 | All | Aug. 8, 1990. |
| U091 | All | Aug. 8, 1990. |
| U092 | All | Aug. 8, 1990. |
| U093 | All | Aug. 8, 1990. |
| U094 | All | Aug. 8, 1990. |
| U095 | All | Aug. 8, 1990. |
| U096 | All | Aug. 8, 1990. |
| U097 | All | Aug. 8, 1990. |
| U098 | All | Aug. 8, 1990. |
| U099 | All | Aug. 8, 1990. |
| U101 | All | Aug. 8, 1990. |
| U102 | All | June 8, 1989. |
| U103 | All | Aug. 8, 1990. |
| U105 | All | Aug. 8, 1990. |

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|---|---|---|
| U106 | All | Aug. 8, 1990. |
| U107 | All | June 8, 1989. |
| U108 | All | Aug. 8, 1990. |
| U109 | All | Aug. 8, 1990. |
| U110 | All | Aug. 8, 1990. |
| U111 | All | Aug. 8, 1990. |
| U112 | All | Aug. 8, 1990. |
| U113 | All | Aug. 8, 1990. |
| U114 | All | Aug. 8, 1990. |
| U115 | All | Aug. 8, 1990. |
| U116 | All | Aug. 8, 1990. |
| U117 | All | Aug. 8, 1990. |
| U118 | All | Aug. 8, 1990. |
| U119 | All | Aug. 8, 1990. |
| U120 | All | Aug. 8, 1990. |
| U121 | All | Aug. 8, 1990. |
| U122 | All | Aug. 8, 1990. |
| U123 | All | Aug. 8, 1990. |
| U124 | All | Aug. 8, 1990. |
| U125 | All | Aug. 8, 1990. |
| U126 | All | Aug. 8, 1990. |
| U127 | All | Aug. 8, 1990. |
| U128 | All | Aug. 8, 1990. |
| U129 | All | Aug. 8, 1990. |
| U130 | All | Aug. 8, 1990. |
| U131 | All | Aug. 8, 1990. |
| U132 | All | Aug. 8, 1990. |
| U133 | All | Aug. 8, 1990. |
| U134 | All | Aug. 8, 1990. |
| U135 | All | Aug. 8, 1990. |
| U136 | Wastewater | Aug. 8, 1990. |
| U136 | Nonwastewater | May 8, 1992. |
| U137 | All | Aug. 8, 1990. |
| U138 | All | Aug. 8, 1990. |
| U140 | All | Aug. 8, 1990. |
| U141 | All | Aug. 8, 1990. |
| U142 | All | Aug. 8, 1990. |
| U143 | All | Aug. 8, 1990. |
| U144 | All | Aug. 8, 1990. |
| U145 | All | Aug. 8, 1990. |
| U146 | All | Aug. 8, 1990. |
| U147 | All | Aug. 8, 1990. |
| U148 | All | Aug. 8, 1990. |
| U149 | All | Aug. 8, 1990. |
| U150 | All | Aug. 8, 1990. |
| U151 | Wastewater | Aug. 8, 1990. |
| U151 | Nonwastewater | May 8, 1992. |
| U152 | All | Aug. 8, 1990. |
| U153 | All | Aug. 8, 1990. |
| U154 | All | Aug. 8, 1990. |
| U155 | All | Aug. 8, 1990. |
| U156 | All | Aug. 8, 1990. |
| U157 | All | Aug. 8, 1990. |
| U158 | All | Aug. 8, 1990. |
| U159 | All | Aug. 8, 1990. |
| U160 | All | Aug. 8, 1990. |
| U161 | All | Aug. 8, 1990. |
| U162 | All | Aug. 8, 1990. |
| U163 | All | Aug. 8, 1990. |
| U164 | All | Aug. 8, 1990. |
| U165 | All | Aug. 8, 1990. |
| U166 | All | Aug. 8, 1990. |

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| U167 | All | Aug. 8, 1990. |
| U168 | All | Aug. 8, 1990. |
| U169 | All | Aug. 8, 1990. |
| U170 | All | Aug. 8, 1990. |
| U171 | All | Aug. 8, 1990. |
| U172 | All | Aug. 8, 1990. |
| U173 | All | Aug. 8, 1990. |
| U174 | All | Aug. 8, 1990. |
| U176 | All | Aug. 8, 1990. |
| U177 | All | Aug. 8, 1990. |
| U178 | All | Aug. 8, 1990. |
| U179 | All | Aug. 8, 1990. |
| U180 | All | Aug. 8, 1990. |
| U181 | All | Aug. 8, 1990. |
| U182 | All | Aug. 8, 1990. |
| U183 | All | Aug. 8, 1990. |
| U184 | All | Aug. 8, 1990. |
| U185 | All | Aug. 8, 1990. |
| U186 | All | Aug. 8, 1990. |
| U187 | All | Aug. 8, 1990. |
| U188 | All | Aug. 8, 1990. |
| U189 | All | Aug. 8, 1990. |
| U190 | All | June 8, 1989. |
| U191 | All | Aug. 8, 1990. |
| U192 | All | Aug. 8, 1990. |
| U193 | All | Aug. 8, 1990. |
| U194 | All | Aug. 8, 1990. |
| U196 | All | Aug. 8, 1990. |
| U197 | All | Aug. 8, 1990. |
| U200 | All | Aug. 8, 1990. |
| U201 | All | Aug. 8, 1990. |
| U202 | All | Aug. 8, 1990. |
| U203 | All | Aug. 8, 1990. |
| U204 | All | Aug. 8, 1990. |
| U205 | All | Aug. 8, 1990. |
| U206 | All | Aug. 8, 1990. |
| U207 | All | Aug. 8, 1990. |
| U208 | All | Aug. 8, 1990. |
| U209 | All | Aug. 8, 1990. |
| U210 | All | Aug. 8, 1990. |
| U211 | All | Aug. 8, 1990. |
| U213 | All | Aug. 8, 1990. |
| U214 | All | Aug. 8, 1990. |
| U215 | All | Aug. 8, 1990. |
| U216 | All | Aug. 8, 1990. |
| U217 | All | Aug. 8, 1990. |
| U218 | All | Aug. 8, 1990. |
| U219 | All | Aug. 8, 1990. |
| U220 | All | Aug. 8, 1990. |
| U221 | All | June 8, 1989. |
| U222 | All | Aug. 8, 1990. |
| U223 | All | June 8, 1989. |
| U225 | All | Aug. 8, 1990. |
| U226 | All | Aug. 8, 1990. |
| U227 | All | Aug. 8, 1990. |
| U228 | All | Aug. 8, 1990. |
| U234 | All | Aug. 8, 1990. |
| U235 | All | June 8, 1989. |
| U236 | All | Aug. 8, 1990. |
| U237 | All | Aug. 8, 1990. |
| U238 | All | Aug. 8, 1990. |
| U239 | All | Aug. 8, 1990. |

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|---|---|---|
| U240 | All | Aug. 8, 1990. |
| U243 | All | Aug. 8, 1990. |
| U244 | All | Aug. 8, 1990. |
| U246 | All | Aug. 8, 1990. |
| U247 | All | Aug. 8, 1990. |
| U248 | All | Aug. 8, 1990. |
| U249 | All | Aug. 8, 1990. |

a This table does not include mixed radioactive wastes (from the First, Second,and Third rules) which are receiving a national capacity variance until May 8, 1992, for all applicable treatment technologies. This table also does not include contaminated soil and debris wastes.

[b] The standard has been revised in the Third Third Final Rule.

[c] No land disposal standard has been revised in the Third Third Final Rule.

## Appendix VII

Table 2.-Summary of Effective Dates of Land Disposal Restrictions for Contaminated Soil and Debris (CSD)

| Restricted hazardous waste in CSD | | Effective date |
|---|---|---|
| 1. | Solvent-(F001-F005) and dioxin-(F020-F023 and F026-F028) containing soil and debris from CERCLA response of RCRA corrective actions. | Nov. 8, 1990. |
| 2. | Soil and debris not from CERCLA response or RCRA corrective actions contaminated with less than 1% total solvents (F001-F005) or dioxins (F020-F023 and F026-F028). | Nov. 8, 1988. |
| 3. | Soil and debris contaminated with California list HOCs from CERCLA response or RCRA corrective actions. | Nov. 8, 1990. |
| 4. | Soil and debris contaminated with California list HOCs not from CERCLA response or RCRA corrective actions. | July 8, 1989. |
| 5. | All soil and debris contaminated with First Third wastes for which treatment standards are based on incineration. | Aug. 8, 1990. |
| 6. | All soil and debris contaminated with Second Third wastes for which treatment standards are based on incineration. | June 8, 1991. |
| 7. | All soil and debris contaminated with Third Third wastes or, First or Second Third "soft hammer" wastes which had treatment standards promulgated in the Third Third rule, for which treatment standards are based on incineration, vitrification, or mercury retorting, acid leaching followed by chemical precipitation, or thermal recovery of metals, as well as all inorganic solids debris contaminated with D004-D011 wastes, and all soil and debris contaminated with mixed RCRA/radioactive wastes. | May 8, 1992. |

Note: 1. Appendix VII is provided for the convenience of the reader.

2. Contaminated Soil and Debris Rule will be promulgated in the future.

16. Appendix VIII to part 268 is revised to read as follows:

Appendix VIII

National Capacity LDR Variances for UIC Wastes[a]

| Waste code | Waste category | Effective date |
|---|---|---|
| F001-F005 | All spent F001-F005 solvent containing less than 1 percent total F001-F005 solvent constituents | Aug. 8, 1990. |
| California list | Liquid hazardous wastes, including free liquids associated with any solid or sludge, containing free cyanides at concentrations greater than or equal to 1,000 mg/l, or containing certain metals or compounds of these metals greater than or equal to the prohibition levels | Aug. 8, 1990. |
| California list | Liquid hazardous waste having a pH less than or equal to 2 | Aug. 8, 1990. |
| California list | Hazardous wastes containing HOCs in total concentrations less than 10,000 mg/l but greater than or equal to 1,000 mg/l | Aug. 8, 1990. |
| D002[b] | All | May 8, 1992. |
| D003 (cyanides) | All | May 8, 1992. |
| D003 (sulfides) | All | May 8, 1992. |
| D003 (explosives, reactives). | All | May 8, 1992. |
| D007 | All | May 8, 1992. |
| D009 | Nonwastewater | May 8, 1992. |
| F007 | All | June 8, 1991. |
| F039 | Wastewater | May 8, 1992. |
| K009 | Wastewater | June 8, 1991. |
| K011 | Nonwastewater | June 8, 1991. |
| K011 | Wastewater | May 8, 1992. |
| K013 | Nonwastewater | June 8, 1991. |
| K013 | Wastewater | May 8, 1992. |
| K014 | All | May 8, 1992. |
| K016 (dilute) | All | June 8, 1991. |
| K049 | All | Aug. 8, 1990. |
| K050 | All | Aug. 8, 1990. |
| K051 | All | Aug. 8, 1990. |
| K052 | All | Aug. 8, 1990. |
| K062 | All | Aug. 8, 1990. |
| K071 | All | Aug. 8, 1990. |
| K104 | All | Aug. 8, 1990. |

[a] Wastes that are deep well disposed on-site receive a six-month variance, with restrictions effective in November 1990.

[b] Deepwell injected D002 liquids with a pH less than 2 must meet the California List treatment standards on August 8, 1990.

Note: This table is provided for the convenience of the reader.

17. Appendix IX is added to part 268 to read as follows:

Appendix IX-Extraction Procedure (EP) Toxicity Test Method and Structural Integrity Test (SW-846, Method 1310A)

1.0 Scope and Application

1.1 This method is an interim method to determine whether a waste exhibits the characteristic of Extraction Procedure Toxicity.

1.2 The procedure may also be used to simulate the leaching which a waste may undergo if disposed of in a sanitary landfill. Method 1310 is applicable to liquid, solid, and multiphase samples.

2.0 Summary of Method

2.1 If a representative sample of the waste contains >0.5% solids, the solid phase of the sample is ground to pass a 9.5 mm sieve and extracted with deionized water which is maintained at a pH of 5 ± 0.2, with acetic acid. Wastes that contain <0.5% filterable solids are, after filtering, considered to be the EP extract for this method. Monolithic wastes which can be formed into a cylinder 3.3 cm (dia) x 7.1 cm, or from which such a cylinder can be formed which is representative of the waste, may be evaluated using the Structural Integrity Procedure instead of being ground to pass a 9.5-mm sieve.

3.0 Interferences

3.1 Potential interferences that may be encountered during analysis are discussed in the individual analytical methods.

4.0 Apparatus and Materials

4.1 Extractor-For purposes of this test, an acceptable extractor is one that will impart sufficient agitation to the mixture to (1) prevent stratification of the sample and extraction fluid and (2) ensure that all sample surfaces are continuously brought into contact with well-mixed extraction fluid. Examples of suitable extractors are shown in Figures 1-3 of this method and are available from: Associated Designs & Manufacturing Co., Alexandria, Virginia; Glas-Col Apparatus Co., Terre Haute, Indiana; Millipore, Bedford, Massachusetts; and Rexnard, Milwaukee, Wisconsin.

4.2 pH meter or pH controller-Accurate to 0.05 pH units with temperature compensation.

4.3 Filter holder-Capable of supporting a 0.45-µm filter membrane and of withstanding the pressure needed to accomplish separation. Suitable filter holders range from simple vacuum units to relatively complex systems that can exert up to 5.3 $kg/cm^3$ (75 psi) of pressure. The type of filter holder used depends upon the properties of the mixture to be filtered. Filter holders known to EPA and deemed suitable for use are listed in Table 1.

4.4 Filter membrane-Filter membrane suitable for conducting the required filtration shall be fabricated from a material that (1) is not physically changed by the waste material to be filtered and (2) does not absorb or leach the chemical species for which a waste's EP extract will be analyzed. Table 2 lists filter media known to the agency to be suitable for solid waste testing.

4.4.1 In cases of doubt about physical effects on the filter, contact the filter manufacturer to determine if the membrane or the prefilter is adversely affected by the particular waste. If no information is available, submerge the filter in the waste's liquid phase. A filter that undergoes

visible physical change after 48 hours (i.e., curls, dissolves, shrinks, or swells) is unsuitable for use.

4.4.2 To test for absorption or leaching by the filter:

4.4.2.1 Prepare a standard solution of the chemical species of interest.

4.4.2.2 Analyze the standard for its concentration of the chemical species.

4.4.2.3 Filter the standard and reanalyze. If the concentration of the filtrate differs from that of the original standard, then the filter membrane leaches or absorbs one or more of the chemical species and is not usable in this test method.

4.5 Structural integrity tester-A device meeting the specifications shown in Figure 4 and having a 3.18-cm (1.25-in) diameter hammer weighing 0.33 kg (0.73 lb) with a free fall of 15.24 cm (6 in) shall be used. This device is available from Associated Design and Manufacturing Company, Alexandria, VA 22314, as Part No. 125, or it may be fabricated to meet these specifications.

5.0 Reagents

5.1 Reagent grade chemicals shall be used in all tests. Unless otherwise indicated, it is intended that all reagents shall conform to the specifications of the Committee on Analytical Reagents of the American Chemical Society, where such specifications are available. Other grades may be used, provided it is first ascertained that the reagent is of sufficiently high purity to permit its use without lessening the accuracy of the determination.

5.2 Reagent water. All references to water in this method refer to reagent water, as defined in Chapter One.

5.3 Acetic acid (0.5N), $CH_3COOH$. This can be made by diluting concentrated glacial acetic acid (17.5N) by adding 57 ml glacial acetic acid to 1,000 ml of water and diluting to 2 liters. The glacial acetic acid must be of high purity and monitored for impurities.

5.4 Analytical standards should be prepared according to the applicable analytical methods.

6.0 Sample Collection, Preservation, and Handling

6.1 All samples must be collected using a sampling plan that addresses the considerations discussed in Chapter Nine of this manual.

6.2 Preservatives must not be added to samples.

6.3 Samples can be refrigerated if it is determined that refrigeration will not affect the integrity of the sample.

7.0 Procedure

7.1 If the waste does not contain any free liquid, go to Step 7.9. If the sample is liquid or multiphase, continue as follows. Weigh filter membrane and prefilter to ± 0.01 g. Handle membrane and prefilters with blunt curved-tip forceps or vacuum tweezers, or by applying suction with a pipet.

7.2 Assemble filter holder, membranes, and prefilters following the manufacturer's instructions. Place the 0.45-µm membrane on the support screen

and add prefilters in ascending order of pore size. Do not prewet filter membrane.

7.3 Weigh out a representative subsample of the waste (100 g minimum).

7.4 Allow slurries to stand, to permit the solid phase to settle. Wastes that settle slowly may be centrifuged prior to filtration.

7.5 Wet the filter with a small portion of the liquid phase from the waste or from the extraction mixture. Transfer the remaining material to the filter holder and apply vacuum or gentle pressure (10-15 psi) until all liquid passes through the filter. Stop filtration when air or pressurizing gas moves through the membrane. If this point is not reached under vacuum or gentle pressure, slowly increase the pressure in 10-psi increments to 75 psi. Halt filtration when liquid flow stops. This liquid will constitute part or all of the extract (refer to Step 7.16). The liquid should be refrigerated until time of analysis.

Note: Oil samples or samples containing oil are treated in exactly the same way as any other sample. The liquid portion of the sample is filtered and treated as part of the EP extract. If the liquid portion of the sample will not pass through the filter (usually the case with heavy oils or greases), it should be carried through the EP extraction as a solid.

7.6 Remove the solid phase and filter media and, while not allowing them to dry, weigh to ± 0.01 g. The wet weight of the residue is determined by calculating the weight difference between the weight of the filters (Step 7.1) and the weight of the solid phase and the filter media.

7.7 The waste will be handled differently from this point on, depending on whether it contains more or less than 0.5% solids. If the sample appears to have <0.5% solids, determine the percent solids exactly (see Note below) by the following procedure:

7.7.1 Dry the filter and residue at 80 °C until two successive weighings yield the same value.

7.7.2 Calculate the percent solids, using the following equation:

$$\frac{\text{weight of filtered solid and filters} - \text{tared weight of filters}}{\text{initial weight of waste material}} = X\ 100 = \%\ \text{solids}$$

Note: This procedure is used only to determine whether the solid must be extracted or whether it can be discarded unextracted. It is not used in calculating the amount of water or acid to use in the extraction step. Do not extract solid material that has been dried at 80 °C. A new sample will have to be used for extraction if a percent solids determination is performed.

7.8 If the solid constitutes <0.5% of the waste, discard the solid and proceed immediately to Step 7.17, treating the liquid phase as the extract.

7.9 The solid material obtained from Step 7.5 and all materials that do not contain free liquids shall be evaluated for particle size. If the solid material has a surface area per g of material $\geq 3.1\ cm^2$ or passes through a 9.5-mm (0.375-in.) standard sieve, the operator shall proceed to Step 7.11. If

the surface area is smaller or the particle size larger than specified above, the solid material shall be prepared for extraction by crushing, cutting, or grinding the material so that it passes through a 9.5-mm (0.375-in.) sieve or, if the material is in a single piece, by subjecting the material to the "Structural Integrity Procedure" described in Step 7.10.

7.10 Structural Integrity Procedure (SIP).

7.10.1 Cut a 3.3-cm diameter by 7.1-cm long cylinder from the waste material. If the waste has been treated using a fixation process, the waste may be cast in the form of a cylinder and allowed to cure for 30 days prior to testing.

7.10.2 Place waste into sample holder and assemble the tester. Raise the hammer to its maximum height and drop. Repeat 14 additional times.

7.10.3 Remove solid material from tester and scrape off any particles adhering to sample holder. Weigh the waste to the nearest 0.01 g and transfer it to the extractor.

7.11 If the sample contains >0.5% solids, use the wet weight of the solid phase (obtained in Step 7.6) to calculate the amount of liquid and acid to employ for extraction by using the following equation:

$W=W_f-W_t$

where:

W = Wet weight in g of solid to be charged to extractor.
$W_f$ = Wet weight in g of filtered solids and filter media.
$W_t$ = Weight in g of tared filters.

If the waste does not contain any free liquids, 100 g of the material will be subjected to the extraction procedure.

7.12 Place the appropriate amount of material (refer to Step 7.11) into the extractor and add 16 times its weight with water.

7.13 After the solid material and water are placed in the extractor, the operator shall begin agitation and measure the pH of the solution in the extractor. If the pH is >5.0, the pH of the solution shall be decreased to 5.0 ±0.2 by slowly adding 0.5N acetic acid. If the pH is ≤5.0, no acetic acid should be added. The pH of the solution shall be monitored, as described below, during the course of extraction, and, if the pH rises above 5.2, 0.5N acetic acid shall be added to bring the pH down to 5.0 ± 0.2. However, in no event shall the aggregate amount of acid added to the solution exceed 4 mL of acid per g of solid. The mixture shall be agitated for 24 hours and maintained at 20-40 °C (68-104 °F) during this time. It is recommended that the operator monitor and adjust the pH during the course of the extraction with a device such as the Type 45-A pH Controller, manufactured by Chemtrix, Inc., Hillsboro, Oregon 97123, or its equivalent, in conjunction with a metering pump and reservoir of 0.5N acetic acid. If such a system is not available, the following manual procedure shall be employed.

Note: Do not add acetic acid too quickly. Lowering the pH to below the target concentration of 5.0 could affect the metal concentrations in the leachate.

7.13.1 A pH meter shall be calibrated in accordance with the manufacturer's specifications.

7.13.2 The pH of the solution shall be checked and, if necessary, 0.5N acetic acid shall be manually added to the extractor until the pH reaches 5.0 ± 0.2. The pH of the solution shall be adjusted at 15-, 30-, and 60-minute intervals, moving to the next longer interval if the pH does not have to be adjusted more than 0.5 pH units.

7.13.3 The adjustment procedure shall be continued for at least 6 hours.

7.13.4 If, at the end of the 24-hour extraction period, the pH of the solution is not below 5.2 and the maximum amount of acid (4 mL per g of solids) has not been added, the pH shall be adjusted to 5.0 ± 0.2 and the extraction continued for an additional 4 hours, during which the pH shall be adjusted at 1-hour intervals.

7.14 At the end of the extraction period, water shall be added to the extractor in an amount determined by the following equation:

$$V=(20)(W)-16(W)-A$$

Where:

V=mL water to be added.
W=Weight in g of solid charged to extractor.
A=mL of 0.5N acetic acid added during extraction.

7.15 The material in the extractor shall be separated into its component liquid and solid phases in the following manner:

7.15.1 Allow slurries to stand to permit the solid phase to settle (wastes that are slow to settle may be centrifuged prior to filtration) and set up the filter apparatus (refer to Steps 4.3 and 4.4).

7.15.2 Wet the filter with a small portion of the liquid phase from the waste or from the extracted mixture. Transfer the remaining material to the filter holder and apply vacuum or gentle pressure (10-15 psi) until all liquid passes through the filter. Stop filtration when air or pressurized gas moves through the membrane. If this point is not reached under vacuum or gentle pressure, slowly increase the pressure in 10-psi increments to 75 psi. Halt filtration when liquid flow stops.

7.16 The liquids resulting from Steps 7.5 and 7.15 shall be combined. This combined liquid (or waste itself, if it has < 0.5% solids, as noted in Step 7.8) is the extract and shall be analyzed for the presence of any of the contaminants specified in 40 CFR 261.24 using the analytical procedures as designated in Step 7.17.

7.17 The extract is then prepared and analyzed using the appropriate analytical methods described in Chapters Three and Four of this manual.

Note: If the EP extract includes two phases, concentration of contaminants is determined by using a simple weighted average. For example: An EP extract contains 50 mL of oil and 1,000 mL of an aqueous phase. Contaminant concentrations are determined for each phase. The final contamination concentration is taken to be:

$$\frac{50 \times \text{contaminant conc. in oil} + 1{,}000 \times \text{contamination conc. of aqueous phase}}{}$$

Note: In cases where a contaminant was not detected, use the MDL in the calculation. For example, if the MDL in the oily phase is 100 mg/L and 1 mg/L in the aqueous phase, the reporting limit would be 6 mg/L (rounded to the nearest mg). If the regulatory threshold is 5 mg/L, the waste may be EP toxic and results of the analysis are inconclusive.

7.18 The extract concentrations are compared with the maximum contamination limits listed in 40 CFR 261.24. If the extract concentrations are greater than or equal to the respective values, the waste then is considered to exhibit the characteristic of Extraction Procedure Toxicity.

## 8.0 Quality Control

8.1 Refer to Chapter One for specific quality control procedures.

## 9.0 Method Performance

9.1 The data tabulated in Table 3 were obtained from records of state and contractor laboratories and are intended to show the precision of the entire method (1301 plus analysis method).

## 10.0 References

1. Rohrbough, W.G.; et al. Reagent Chemicals, American Chemical Society Specifications, 7th ed.; American Chemical Society: Washington, DC 1986.

2. 1985 Annual Book of ASTM Standards, Vol. 11.01; "Standard Specification for Reagent Water"; ASTM: Philadelphia, PA, 1985; D1193-77.

3. Gaskill, A., Compilation and Evaluation of RCRA Method Performance Data, Work Assignment No. 2, EPA Contract No. 68-01-7075, September 1986.

Table 1.-EPA-Approved Filter Holders

| Manufacturer | Size | Model No. | Comments |
|---|---|---|---|
| Vacuum Filters | | | |
| Gelman | 47 mm | 4011 | |
| Nalgene | 500 mL | 44-0045 | Disposable plastic unit, including prefilter, filter pads, and reservoir; can be used when solution is to be analyzed for inorganic constituents. |
| Nuclepore | 47 mm | 410400 | |
| Millipore | 47 mm | XX10 047 00 | |
| Pressure Filters | | | |
| Nuclepore | 142 mm | 425900 | |
| Micro Filtration Systems | 142 mm | 302300 | |
| Millipore | 142 mm | YT30 142 HW | |

Table 2.-EPA-Approved Filtration Media

| Supplier | Filter to be used for aqueous systems | Filter to be used for organic systems |
|---|---|---|
| Coarse prefilters | | |
| Gelman | 61631, 61635 | 61631, 61635 |
| Nuclepore | 210907, 211707 | 210907, 211707 |
| Millipore | AP25 035 00, AP25 127 50 | AP25 035 00, AP25 127 50 |
| Medium prefilters | | |
| Gelman | 61654, 61655 | |
| Nuclepore | 210905, 211705 | 210905, 211705 |
| Millipore | AP20 035 00, AP20 124 50 | AP20 035 00, AP20 124 50 |
| Fine prefilters | | |
| Gelman | 64798, 64803 | 64798, 64803 |
| Nuclepore | 210903, 211703 | 210903, 211703 |
| Millipore | AP15 035 00, AP15 124 50 | AP15 035 00, AP15 124 50 |
| Fine filters (0.45 µm) | | |
| Gelman | 63069, 66536 | 60540 or 66149, 66151 |
| Pall | NX04750, NX14225 | |
| Nuclepore | 142218 | [a]142218 |
| Millipore | HAWP 047 00, HAWP 142 50 | FHUP 047 00, FHLP 142 50 |
| Selas | 83485-02, 83486-02 | 83485-02, 83486-02 |

[a]Susceptible to decomposition by certain polar organic solvents.

Table 3.-Precisions of Extraction-Analysis Procedures for Several Elements

| Element | Sample matrix | Analysis method | Laboratory replicates |
|---|---|---|---|
| Arsenic | 1. Auto fluff | 7060 | 1.8,1.5 µg/L |
| | 2. Barrel sludge | 7060 | 0.9, 2.6 µg/L |
| | 3. Lumber treatment company sediment | 7060 | 28, 42 mg/L |
| Barium | 1. Lead smelting emission control dust | 6010 | 0.12, 0.12 mg/L |
| | 2. Auto fluff | 7081 | 791, 780 µg/L |
| | 3. Barrel sludge | 7081 | 422, 380 µg/L |
| Cadmium | 1. Lead smelting emission control dust | 3010/7130 | 120, 120 mg/L |
| | 2. Wastewater treatment sludge from electroplating | 3010/7130 | 360, 290 mg/L |
| | 3. Auto fluff | 7131 | 470, 610 µg/L |
| | 4. Barrel sludge | 7131 | 1100, 890 µg/L |
| | 5. Oil refinery tertiary pond sludge | 7131 | 3.2, 1.9 µg/L |
| Chromium | 1. Wastewater treatment sludge from electroplating | 3010/7190 | 1.1, 1.2 mg/L |
| | 2. Paint primer | 7191 | 61, 43 µg/L |
| | 3. Paint primer filter | 7191 | - |
| | 4. Lumber treatment company sediment | 7191 | 0.81, 0.89 mg/L |
| | 5. Oil refinery tertiary pond sludge | 7191 | - |
| Mercury | 1. Barrel sludge | 7470 | 0.15, 0.09 µg/L |
| | 2. Wastewater treatment sludge from electroplating | 7470 | 1.4, 0.4 µg/L |
| | 3. Lead smelting emission control dust | 7470 | 0.4, 0.4 µg/L |
| Lead | 1. Lead smelting emission control dust | 3010/7420 | 940, 920 mg/L |
| | 2. Auto fluff | 7421 | 1540, 1490 µg/L |
| | 3. Incinerator ash | 7421 | 1000, 974 µg/L |
| | 4. Barrel sludge | 7421 | 2550, 2800 µg/L |
| | 5. Oil refinery tertiary pond sludge | 7421 | 31, 29 µg/L |

| | | | |
|---|---|---|---|
| Nickel | 1. Sludge | 7521 | 2260, 1720 µg/L |
| | 2. Wastewater treatment sludge from electroplating | 3010/7520 | 130, 140 mg/L |
| Chromium (VI) | 1. Wastewater treatment sludge from electroplating | 7196 | 18, 19 µg/L |

>>>> See the accompanying hardcopy volume for non-machine-readable data that appears at this point. <<<<

PART 270-EPA ADMINISTERED PERMIT PROGRAMS: THE HAZARDOUS WASTE PERMIT PROGRAM

1. The authority citation for part 270 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912, 6924, 6925, 6927, 6939, and 6974.

Subpart D-Changes to Permit

2. The entry in appendix I to § 270.42, B.1.b., is revised to read as follows:

§ 270.42 Permit modification at the request of the permittee.

* * * * *

Appendix I to Section 270.42.-Classification of Permit Modification

| Modification | Class |
|---|---|
| * * * * * | |
| B. General Facility Standards | |
| 1. * * * | |
| b. To incorporate changes associated with F039 (multi-source leachate) sampling or analysis methods. | (1) 1 |
| * * * * * | |

[1]Class 1 modifications requiring prior Agency approval.

[FR Doc. 91-2234 Filed 1-30-91; 8:45 am]
BILLING CODE 6560-50-M