

APPENDIX F

ANALYTICAL METHODS AND DETECTION LIMITS

Volatiles, 8021B (BTEX)

| ANALYTE | SOIL CRDL ug/kg | AQUEOUS CRDL ug/L |
|----------------|------------------------|--------------------------|
| MTBE | 1 | 1 |
| Benzene | 1 | 1 |
| Toluene | 1 | 1 |
| Ethylbenzene | 1 | 1 |
| Xylene (total) | 1 | 1 |

Note:

CRDL: Contract Required Detection Limit

Volatiles, 8260B

| ANALYTE | SOIL CRDL ug/kg | AQUEOUS CRDL ug/L |
|----------------------------|-----------------|-------------------|
| Chloromethane | 5 | 5 |
| Bromomethane | 5 | 5 |
| Vinyl Chloride | 5 | 5 |
| Chloroethane | 5 | 5 |
| Methylene Chloride | 5 | 5 |
| Acetone | 5 | 5 |
| Carbon Disulfide | 5 | 5 |
| 1,1-Dichloroethene | 5 | 5 |
| 1,1-Dichloroethane | 5 | 5 |
| 1,2-Dichloroethene (total) | 5 | 5 |
| Chloroform | 5 | 5 |
| 1,2-Dichloroethane | 5 | 5 |
| 2-Butanone | 5 | 5 |
| 1,1,1-Trichloroethane | 5 | 5 |
| Carbon Tetrachloride | 5 | 5 |
| Bromodichloromethane | 5 | 5 |
| 1,2-Dichloropropane | 5 | 5 |
| cis-1,3-Dichloropropane | 5 | 5 |
| Trichloroethene | 5 | 5 |
| Dibromochloromethane | 5 | 5 |
| 1,1,2-Trichloroethane | 5 | 5 |
| Benzene | 5 | 5 |
| trans-1,3-Dichloropropene | 5 | 5 |
| Bromoform | 5 | 5 |
| 4-Methyl-2-Pentanone | 5 | 5 |
| 2-Hexanone | 5 | 5 |
| Tetrachloroethene | 5 | 5 |
| 1,1,2,2-Tetrachloroethane | 5 | 5 |
| Toluene | 5 | 5 |
| Chlorobenzene | 5 | 5 |
| Ethylbenzene | 5 | 5 |
| Styrene | 5 | 5 |
| Xylene (total) | 5 | 5 |

Note:

NYSDEC ASP list, 5030B/8260B

CRDL: Contract Required Detection Limit

Volatiles, 8260B

| ANALYTE | SOIL CRDL ug/kg | SOIL CRDL ug/kg | AQUEOUS CRDL ug/L |
|---------------------------|------------------------------------|---------------------|-------------------|
| | 5035A, NaHSO ₄ , 5g/5mL | 5035A, MeOH, 5g/5mL | |
| Dichlorodifluoromethane | 5 | 250 | 5 |
| Chloromethane | 5 | 250 | 5 |
| Vinyl chloride | 5 | 250 | 5 |
| Bromomethane | 5 | 250 | 5 |
| Chloroethane | 5 | 250 | 5 |
| Trichlorofluoromethane | 5 | 250 | 5 |
| 1,1-Dichloroethene | 5 | 250 | 5 |
| Carbon disulfide | 5 | 250 | 5 |
| Iodomethane | 5 | 250 | 5 |
| Acetone | 5 | 250 | 5 |
| Methylene chloride | 5 | 250 | 5 |
| trans-1,2-Dichloroethene | 5 | 250 | 5 |
| 1,1-Dichloroethane | 5 | 250 | 5 |
| Vinyl acetate | 5 | 250 | 5 |
| 2,2-Dichloropropane | 5 | 250 | 5 |
| cis-1,2-Dichloroethene | 5 | 250 | 5 |
| Methyl ethyl ketone | 5 | 250 | 5 |
| Bromochloromethane | 5 | 250 | 5 |
| Chloroform | 5 | 250 | 5 |
| 1,1,1-Trichloroethane | 5 | 250 | 5 |
| Carbon tetrachloride | 5 | 250 | 5 |
| 1,1-Dichloropropene | 5 | 250 | 5 |
| Benzene | 5 | 250 | 5 |
| 1,2-Dichloroethane | 5 | 250 | 5 |
| Trichloroethene | 5 | 250 | 5 |
| 1,2-Dichloropropane | 5 | 250 | 5 |
| Dibromomethane | 5 | 250 | 5 |
| Bromodichloromethane | 5 | 250 | 5 |
| 2-Chloroethyl vinyl ether | 5 | 250 | 5 |
| cis-1,3-Dichloropropene | 5 | 250 | 5 |
| 4-Methyl-2-pentanone | 5 | 250 | 5 |
| Toluene | 5 | 250 | 5 |
| trans-1,3-Dichloropropene | 5 | 250 | 5 |
| 1,1,2-Trichloroethane | 5 | 250 | 5 |
| Tetrachloroethene | 5 | 250 | 5 |
| 1,3-Dichloropropane | 5 | 250 | 5 |
| 2-Hexanone | 5 | 250 | 5 |
| Dibromochloromethane | 5 | 250 | 5 |
| 1,2-Dibromoethane (EDB) | 5 | 250 | 5 |
| Chlorobenzene | 5 | 250 | 5 |
| 1,1,1,2-Tetrachloroethane | 5 | 250 | 5 |
| Ethylbenzene | 5 | 250 | 5 |
| Xylenes, total | 5 | 250 | 5 |
| Styrene | 5 | 250 | 5 |

Volatiles, 8260B (cont.)

| | | | |
|-----------------------------|---|-----|---|
| Bromoform | 5 | 250 | 5 |
| Isopropylbenzene | 5 | 250 | 5 |
| Bromobenzene | 5 | 250 | 5 |
| 1,1,2,2-Tetrachloroethane | 5 | 250 | 5 |
| 1,2,3-Trichloropropane | 5 | 250 | 5 |
| n-Propylbenzene | 5 | 250 | 5 |
| 2-Chlorotoluene | 5 | 250 | 5 |
| 4-Chlorotoluene | 5 | 250 | 5 |
| 1,3,5-Trimethylbenzene | 5 | 250 | 5 |
| tert-Butylbenzene | 5 | 250 | 5 |
| 1,2,4-Trimethylbenzene | 5 | 250 | 5 |
| sec-Butylbenzene | 5 | 250 | 5 |
| 1,3-Dichlorobenzene | 5 | 250 | 5 |
| 4-Isopropyltoluene | 5 | 250 | 5 |
| 1,4-Dichlorobenzene | 5 | 250 | 5 |
| 1,2-Dichlorobenzene | 5 | 250 | 5 |
| n-Butylbenzene | 5 | 250 | 5 |
| 1,2-Dibromo-3-chloropropane | 5 | 250 | 5 |
| 1,2,4-Trichlorobenzene | 5 | 250 | 5 |
| Hexachlorobutadiene | 5 | 250 | 5 |
| 1,2,3-Trichlorobenzene | 5 | 250 | 5 |
| MTBE | 5 | 250 | 5 |
| Naphthalene | 5 | 250 | 5 |

Note:

CRDL: Contract Required Detection Limit

PAH's, 8270C

| ANALYTE | SOIL CRDL ug/kg | AQUEOUS CRDL ug/L |
|--------------------------|-----------------|-------------------|
| Naphthalene | 330 | 10 |
| 2-Methylnaphthalene | 330 | 10 |
| Acenaphthylene | 330 | 10 |
| Acenaphthene | 330 | 10 |
| Dibenzofuran | 330 | 10 |
| Fluorene | 330 | 10 |
| Phenanthrene | 330 | 10 |
| Anthracene | 330 | 10 |
| Fluoranthene | 330 | 10 |
| Pyrene | 330 | 10 |
| Benzo (a) anthracene | 330 | 10 |
| Chrysene | 330 | 10 |
| Benzo (b) fluoranthene | 330 | 10 |
| Benzo (k) fluoranthene | 330 | 10 |
| Benzo (a) pyrene | 330 | 10 |
| Indeno (1,2,3-cd) pyrene | 330 | 10 |
| Dibenzo (a,h)anthracene | 330 | 10 |
| Benzo (g,h,i)perylene | 330 | 10 |

Note:

CRDL: Contract Required Detection Limit

Semivolatiles, 8270C

| ANALYTE | SOIL CRDL ug/kg | AQUEOUS CRDL ug/L |
|-------------------------------|-----------------|-------------------|
| Phenol | 330 | 10 |
| bis-(2-Chloroethyl) Ether | 330 | 10 |
| 2-Chlorophenol | 330 | 10 |
| 1,3-Dichlorobenzene | 330 | 10 |
| 1,4-Dichlorobenzene | 330 | 10 |
| 1,2-Dichlorobenzene | 330 | 10 |
| 2-Methylphenol | 330 | 10 |
| 2,2'-oxybis (1-Chloropropane) | 330 | 10 |
| 4-Methylphenol | 330 | 10 |
| N-Nitroso-di-n-propylamine | 330 | 10 |
| Hexachloroethane | 330 | 10 |
| Nitrobenzene | 330 | 10 |
| Isophorone | 330 | 10 |
| 2-Nitrophenol | 330 | 10 |
| 2,4-Dimethylphenol | 330 | 10 |
| 2,4-Dichlorophenol | 330 | 10 |
| 1,2,4-Trichlorobenzene | 330 | 10 |
| Naphthalene | 330 | 10 |
| 4-Chloroaniline | 330 | 10 |
| bis(2-Chloroethoxy)methane | 330 | 10 |
| Hexachlorobutadiene | 330 | 10 |
| 4-Chloro-3-methylphenol | 330 | 10 |
| 2-Methylnaphthalene | 330 | 10 |
| Hexachlorocyclopentadiene | 330 | 10 |
| 2,4,6-Trichlorophenol | 330 | 10 |
| 2,4,5-Trichlorophenol | 670 | 20 |
| 2-Chloronaphthalene | 330 | 10 |
| 2-Nitroaniline | 670 | 20 |
| Dimethylphthalate | 330 | 10 |
| Acenaphthylene | 330 | 10 |
| 2,6-Dinitrotoluene | 330 | 10 |
| 3-Nitroaniline | 670 | 20 |
| Acenaphthene | 330 | 10 |
| 2,4-Dinitrophenol | 670 | 20 |
| 4-Nitrophenol | 670 | 20 |
| Dibenzofuran | 330 | 10 |
| 2,4-Dinitrotoluene | 330 | 10 |
| Diethylphthalate | 330 | 10 |
| 4-Chlorophenyl-phenylether | 330 | 10 |
| Fluorene | 330 | 10 |
| 4-Nitroaniline | 670 | 20 |
| 4,6-Dinitro-2--methylphenol | 670 | 20 |
| N-Nitrosodiphenylamine (1) | 330 | 10 |
| 4-Bromophenyl-phenylether | 330 | 10 |

Semivolatiles, 8270C (cont.)

| | | |
|----------------------------|-----|----|
| Hexachlorobenzene | 330 | 10 |
| Pentachlorophenol | 670 | 20 |
| Phenanthrene | 330 | 10 |
| Anthracene | 330 | 10 |
| Carbazole | 330 | 10 |
| Di-n-butylphthalate | 330 | 10 |
| Fluoranthene | 330 | 10 |
| Pyrene | 330 | 10 |
| Butylbenzylphthalate | 330 | 10 |
| 3,3'-Dichlorobenzidine | 330 | 10 |
| Benzo(a)anthracene | 330 | 10 |
| Chrysene | 330 | 10 |
| bis(2-Ethylhexyl)phthalate | 330 | 10 |
| Benzo(b)fluoranthene | 330 | 10 |
| Benzo(k)fluoranthene | 330 | 10 |
| Benzo(a)pyrene | 330 | 10 |
| Indeno(1,2,3-cd)pyrene | 330 | 10 |
| Dibenzo(a,h)anthracene | 330 | 10 |
| Benzo(g,h,i)perylene | 330 | 10 |

Note:

CRDL: Contract Required Detection Limit

Pesticides, 8081A

| ANALYTE | SOIL CRDL ug/kg | AQUEOUS CRDL ug/L |
|---------------------|------------------------|--------------------------|
| alpha-BHC | 1.7 | 0.05 |
| beta-BHC | 1.7 | 0.05 |
| delta-BHC | 1.7 | 0.05 |
| gamma-BHC (Lindane) | 1.7 | 0.05 |
| Heptachlor | 1.7 | 0.05 |
| Aldrin | 1.7 | 0.05 |
| Heptachlor epoxide | 1.7 | 0.05 |
| Endosulfan I | 1.7 | 0.05 |
| Dieldrin | 3.3 | 0.10 |
| 4,4'-DDE | 3.3 | 0.10 |
| Endrin | 3.3 | 0.10 |
| Endosulfan II | 3.3 | 0.10 |
| 4,4'-DDD | 3.3 | 0.10 |
| Endosulfan sulfate | 3.3 | 0.10 |
| 4,4'-DDT | 3.3 | 0.10 |
| Methoxychlor | 17 | 0.50 |
| Endrin ketone | 3.3 | 0.10 |
| Endrin aldehyde | 3.3 | 0.10 |
| alpha-Chlordane | 1.7 | 0.05 |
| gamma-Chlordane | 1.7 | 0.05 |
| Toxaphene | 170 | 5 |

Note:

CRDL: Contract Required Detection Limit

PCBs, 8082

| ANALYTE | SOIL CRDL ug/kg | AQUEOUS CRDL ug/L |
|--------------|-----------------|-------------------|
| Aroclor-1016 | 33 | 1 |
| Aroclor-1221 | 33 | 1 |
| Aroclor-1232 | 33 | 1 |
| Aroclor-1242 | 33 | 1 |
| Aroclor-1248 | 33 | 1 |
| Aroclor-1254 | 33 | 1 |
| Aroclor-1260 | 33 | 1 |

Note:

CRDL: Contract Required Detection Limit

Herbicides, 8151A

| ANALYTE | SOIL CRDL ug/kg | AQUEOUS CRDL ug/L |
|-------------------|-----------------|-------------------|
| Dalapon | 40 | 2.5 |
| Dicamba | 1.6 | 0.10 |
| MCPP | 16,000 | 1,000 |
| MCPA | 16,000 | 1,000 |
| Dichloroprop | 16 | 1.0 |
| 2,4-D | 16 | 1.0 |
| 2,4,5-TP (Silvex) | 1.6 | 0.10 |
| 2,4,5-T | 1.6 | 0.10 |
| 2,4-DB | 16 | 1.0 |
| Dinoseb | 8.0 | 0.5 |

Note:

CRDL: Contract Required Detection Limit

RCRA 8 Metals, 6010B, 7470A or 7471A

| ANALYTE | SOIL CRDL mg/kg | AQUEOUS CRDL ug/L |
|----------|-----------------|-------------------|
| Arsenic | 2 | 20 |
| Barium | 20 | 200 |
| Cadmium | 0.5 | 5 |
| Chromium | 2 | 20 |
| Lead | 1 | 10 |
| Mercury | 0.1 | 0.3 |
| Selenium | 2 | 20 |
| Silver | 3 | 30 |

Note:

CRDL: Contract Required Detection Limit

Total Metals, 6010B, 7470A or 7471A

| ANALYTE | SOIL CRDL mg/kg | AQUEOUS CRDL ug/L |
|----------------|------------------------|--------------------------|
| Aluminum | 30 | 300 |
| Antimony | 3 | 30 |
| Arsenic | 2 | 20 |
| Barium | 20 | 200 |
| Beryllium | 0.6 | 6 |
| Cadmium | 0.5 | 5 |
| Calcium | 80 | 800 |
| Chromium | 2 | 20 |
| Cobalt | 5 | 50 |
| Copper | 3 | 30 |
| Iron | 300 | 300 |
| Lead | 1 | 10 |
| Magnesium | 50 | 500 |
| Manganese | 5 | 50 |
| Mercury | 0.1 | 0.3 |
| Nickel | 5 | 50 |
| Potassium | 200 | 2000 |
| Selenium | 2 | 20 |
| Silver | 3 | 30 |
| Sodium | 10 | 100 |
| Thallium | 1 | 10 |
| Vanadium | 5 | 50 |
| Zinc | 5 | 50 |

Note:

CRDL: Contract Required Detection Limit

Total Cyanide, 9010B, 9012A

| ANALYTE | SOIL CRDL mg/kg | AQUEOUS CRDL ug/L |
|-------------------------|------------------------|--------------------------|
| Cyanide, total and free | 1 | 20 |

Total Phenols, 9065

| ANALYTE | SOIL CRDL mg/kg | AQUEOUS CRDL ug/L |
|----------------|------------------------|--------------------------|
| Phenols | 5 | 100 |

Hexavalent Chromium, 7196

| ANALYTE | SOIL CRDL mg/kg | AQUEOUS CRDL ug/L |
|---------------------|------------------------|--------------------------|
| Hexavalent Chromium | 1 | 10 |

Note:

CRDL: Contract Required Detection Limit

TCLP

Volatiles, 8260B

| ANALYTE | AQUEOUS CRDL ug/L |
|----------------------------------|--------------------------|
| Vinyl Chloride | 5 |
| 1,1-Dichloroethene | 5 |
| Chloroform | 5 |
| 1,2-Dichloroethane | 5 |
| Methyl ethyl ketone (2-Butanone) | 5 |
| Carbon Tetrachloride | 5 |
| Trichloroethene | 5 |
| Benzene | 5 |
| Tetrachloroethene | 5 |
| Chlorobenzene | 5 |

Semivolatiles, 8270C

| ANALYTE | AQUEOUS CRDL ug/L |
|-----------------------|--------------------------|
| Pyridine | 33 |
| 1,4-Dichlorobenzene | 33 |
| Cresol, Total | 33 |
| Hexachloroethane | 33 |
| Nitrobenzene | 33 |
| Hexachlorobutadiene | 33 |
| 2,4,6-Trichlorophenol | 33 |
| 2,4,5-Trichlorophenol | 33 |
| 2,4-Dinitrotoluene | 33 |
| Hexachlorobenzene | 33 |
| Pentachlorophenol | 33 |

Metals, 6010B, 7470A

| ANALYTE | AQUEOUS CRDL ug/L |
|----------------|--------------------------|
| Arsenic | 20 |
| Barium | 200 |
| Cadmium | 5 |
| Chromium | 20 |
| Lead | 10 |
| Mercury | 2 |
| Selenium | 20 |
| Silver | 30 |

TCLP (cont.)

Pesticides, 8081A

| ANALYTE | AQUEOUS CRDL ug/L |
|--------------------|--------------------------|
| Lindane | 0.17 |
| Heptachlor | 0.17 |
| Heptachlor epoxide | 0.17 |
| Endrin | 0.33 |
| Methoxychlor | 1.7 |
| Chlordane | 17 |
| Toxaphene | 17 |

Herbicides, 8151A

| ANALYTE | AQUEOUS CRDL ug/L |
|-------------------|--------------------------|
| 2,4-D | 3.3 |
| 2,4,5-TP (Silvex) | 0.33 |

Note:

CRDL: Contract Required Detection Limit