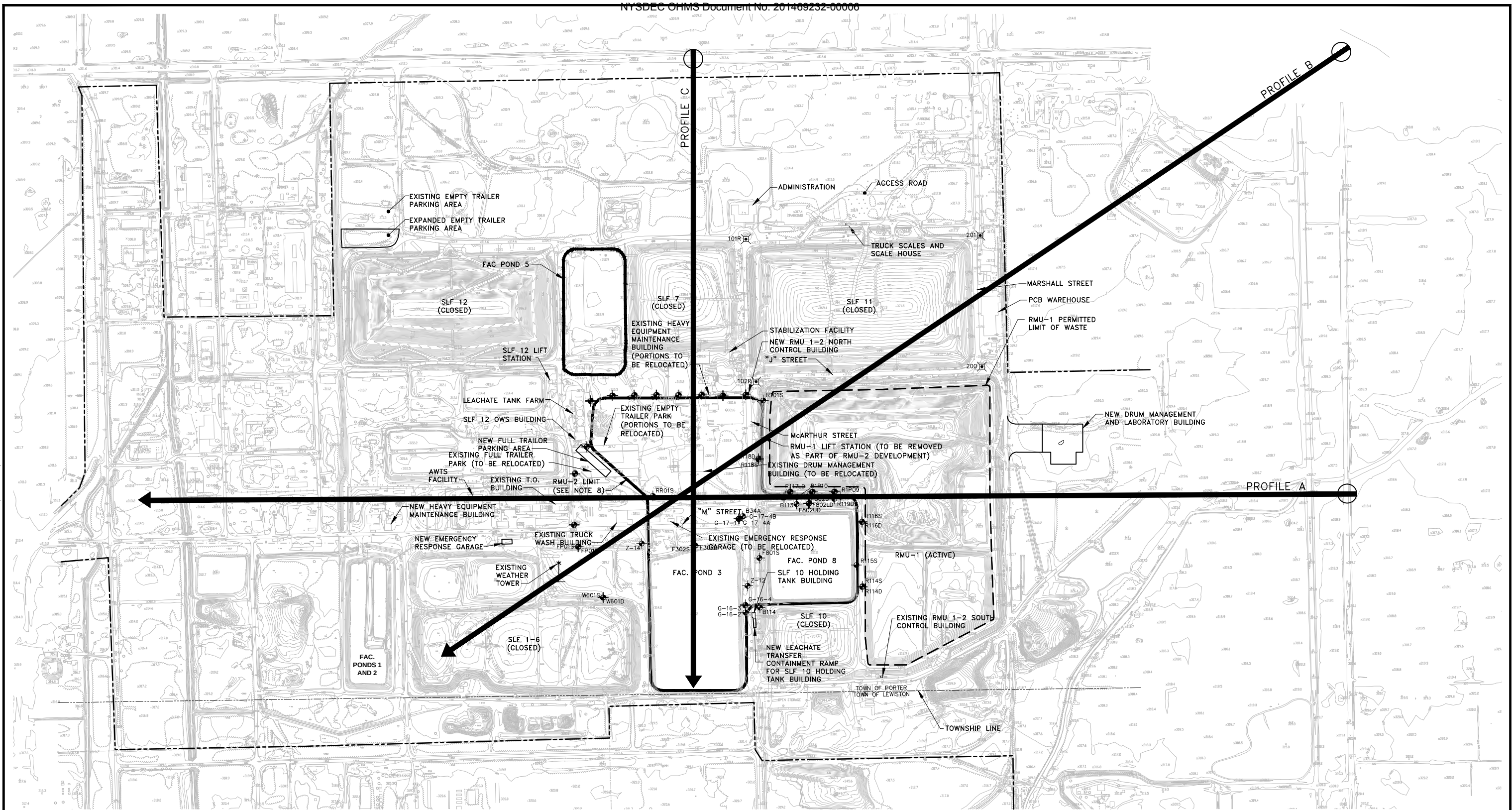


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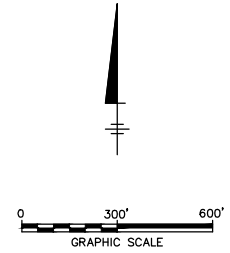


NOTES:

1. TOPOGRAPHIC BASE MAP CONSISTS OF COMBINATION OF DATA COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 5/31/01 BY AIR SURVEY CORP. PROJECT NO.71010503, AND AN AUGUST 2008 SURVEY BY ENSOL.
2. VERTICAL DATUM BASED ON NGS MEAN SEA LEVEL.
3. GRID BASED ON LOCAL COORDINATE SYSTEM.
4. CONTOUR INTERVAL 2 FT.
5. DASHED CONTOURS INDICATE THAT GROUND IS PARTIALLY OBSCURED BY VEGETATION OR SHADOWS. THESE AREAS MAY NOT MEET STANDARD ACCURACY AND REQUIRE FIELD TESTING COMPLETION.
6. PROPERTY LINES ARE APPROXIMATE.
7. 630 PERMITTED ACRES.
8. 710 TOTAL ACRES.

LEGEND:

- SLF = SECURE LANDFILL
- FAC = FACULTATIVE
- LAG = LAGOON
- * = INACTIVE
- LHTB = LEACHATE HOLDING TANK BUILDING
- GWHTB = GROUNDWATER COLLECTION HOLDING TANK BUILDING



CWM CHEMICAL SERVICES, LLC
MODEL CITY, NEW YORK
DRAFT ENVIRONMENTAL IMPACT STATEMENT

LOCATION OF LINE-OF-SITE
PROFILES

FIGURE
4-3

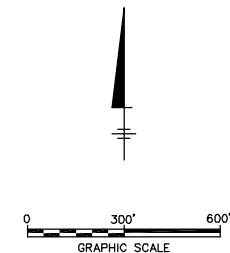


1. TOPOGRAPHIC BASE MAP CONSISTS OF COMBINATION OF DATA COMPILED BY PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY DATED 5/31/01 BY AIR SURVEY CORP. PROJECT NO.71010503. AND AN AUGUST 2008 SURVEY BY ENSOL.
2. VERTICAL DATUM BASED ON NGS MEAN SEA LEVEL.
3. GRID BASED ON LOCAL COORDINATE SYSTEM.
4. CONTOUR INTERVAL 2 FT.
5. DASHED CONTOURS INDICATE THAT GROUND IS PARTIALLY OBSCURED BY VEGETATION OR SHADOWS. THESE AREAS MAY NOT MEET STANDARD ACCURACY AND REQUIRE FIELD TESTING COMPLETION.

6. PROPERTY LINES ARE APPROXIMATE.
7. 630 PERMITTED ACRES.
8. 710 TOTAL ACRES.

LEGEND:

- | | | |
|-------|---|--|
| SLF | = | SECURE LANDFILL |
| FAC | = | FACULTATIVE |
| LAG | = | LAGOON |
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| GWHTB | = | GROUNDWATER COLLECTION HOLDING TANK BUILDING |

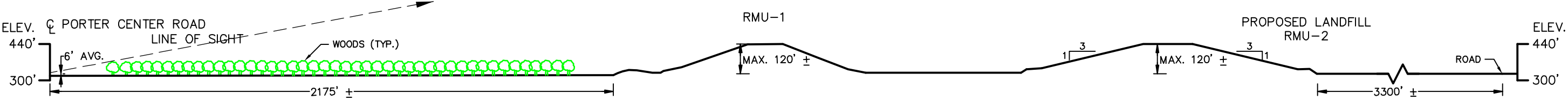


CWM CHEMICAL SERVICES, LLC
MODEL CITY, NEW YORK
DRAFT ENVIRONMENTAL IMPACT STATEMENT

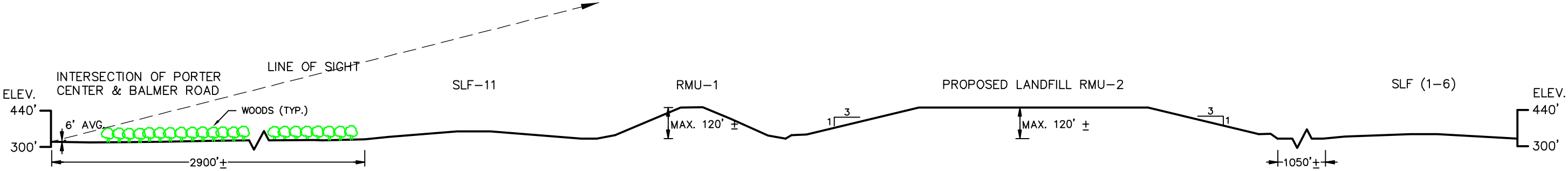
LOCATION OF LINE-OF-SITE PROFILES



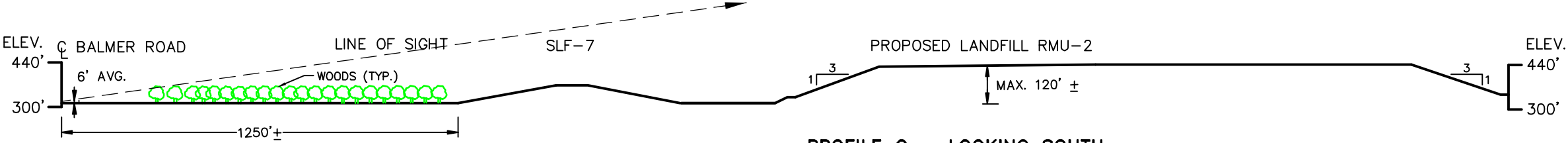
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PROFILE A - LOOKING WEST



PROFILE B - LOOKING SOUTHWEST

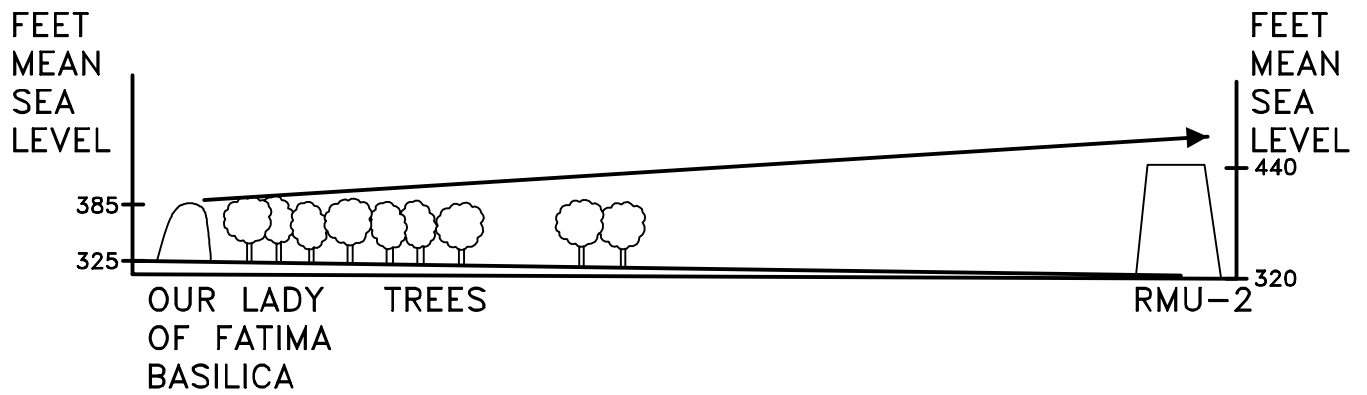


PROFILE C - LOOKING SOUTH

NOTE:
1. ALL LOCATIONS ARE APPROXIMATE.

0 400' 800'
GRAPHIC SCALE

CWM CHEMICAL SERVICES, LLC MODEL CITY, NEW YORK DRAFT ENVIRONMENTAL IMPACT STATEMENT	
LINE OF SIGHT PROFILES	
	FIGURE 4-4



VERTICAL EXAGGERATION = 1:200
HORIZONTAL EXAGGERATION = 1:2500

CWM CHEMICAL SERVICES, LLC
MODEL CITY, NEW YORK
DRAFT ENVIRONMENTAL IMPACT STATEMENT

**VIEW FROM OUR LADY OF FATIMA
BASILICA TOWARD RMU-2
PROPOSED SITE**



FIGURE
4-5



Appendix A

Hazardous Materials Managed at
Model City Facility

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F, AND K DESIGNATION)****

<u>NYS Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
B001	PCB Oil (concentrated)	Toxic	B
B002	Petroleum Oil or other liquids (50 to 500 ppm)	Toxic	B
B003	Petroleum Oil or other liquids (greater than 500 ppm)	Toxic	B
B004	PCB Articles (50 to 500 ppm)	Toxic	B,L
B005	PCB Articles (greater than 500 ppm)	Toxic	B,L
B006	PCB Transformers	Toxic	B,L
B007	Other PCB Wastes	Toxic	B,L

** All footnotes may be referenced at the end of Table C-2 of the Waste Analysis Plan.

TABLE C-1
HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F AND K DESIGNATION)**

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
D001	Ignitable waste	Ignitable	L,B,AT
D002	Corrosive waste	Corrosive	L,B,AT
D003	Reactive waste	Reactive	L,T
D004	Arsenic	Toxicity Characteristic	L,AT,B
D005	Barium	Toxicity Characteristic	L,AT,B
D006	Cadmium	Toxicity Characteristic	L,AT,B
D007	Chromium	Toxicity Characteristic	L,AT,B
D008	Lead	Toxicity Characteristic	L,AT,B
D009	Mercury	Toxicity Characteristic	L,AT,B
D010	Selenium	Toxicity Characteristic	L,AT,B
D011	Silver	Toxicity Characteristic	L,AT,B
D012	Endrin	Toxicity Characteristic	T,B,L
D013	Lindane	Toxicity Characteristic	T,B,L

TABLE C-1
HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F AND K DESIGNATION)**

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
D014	Methoxychlor	Toxicity Characteristic	T,B,L
D015	Toxaphene	Toxicity Characteristic	T,B,L
D016	2,4-D	Toxicity Characteristic	T,B,L
D017	2,4,5-TP Silvex	Toxicity Characteristic	T,B,L
D018	Benzene	Toxicity Characteristic	B,T,L,AT
D019	Carbon Tetrachloride	Toxicity Characteristic	B,T,L,AT
D020	Chlordane	Toxicity Characteristic	B,T,L,AT
D021	Chlorobenzene	Toxicity Characteristic	B,T,L,AT
D022	Chloroform	Toxicity Characteristic	B,T,L,AT
D023	o-cresol	Toxicity Characteristic	B,T,L,AT
D024	m-cresol	Toxicity Characteristic	B,T,L,AT
D025	p-cresol	Toxicity Characteristic	B,T,L,AT
D026	Cresol	Toxicity Characteristic	B,T,L,AT

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F AND K DESIGNATION)****

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
D027	1,4-Dichlorobenzene	Toxicity Characteristic	B,T,L,AT
D028	1,2-Dichloroethylene	Toxicity Characteristic	B,T,L,AT
D029	1,1-Dichloroethylene	Toxicity Characteristic	B,T,L,AT
D030	2,4-Dinitrotoluene	Toxicity Characteristic	B,T,L,AT
D031	Heptachlor	Toxicity Characteristic	B,T,L,AT
D032	Hexachlorobenzene	Toxicity Characteristic	B,T,L,AT
D033	Hexachloro-1,3-butadiene	Toxicity Characteristic	B,T,L,AT
D034	Hexachloroethane	Toxicity Characteristic	B,T,L,AT
D035	Methyl Ethyl Ketone	Toxicity Characteristic	B,T,L,AT
D036	Nitrobenzene	Toxicity Characteristic	B,T,L,AT
D037	Pentachlorophenol	Toxicity Characteristic	B,T,L,AT
D038	Pyridine	Toxicity Characteristic	B,T,L,AT
D039	Tetrachloroethylene	Toxicity Characteristic	B,T,L,AT

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F AND K DESIGNATION)****

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
D040	Trichloroethylene	Toxicity Characteristic	B,T,L,AT
D041	2,4,5-Trichlorophenol	Toxicity Characteristic	B,T,L,AT
D042	2,4,6-Trichlorophenol	Toxicity Characteristic	B,T,L,AT
D043	Vinyl Chloride	Toxicity Characteristic	B,T,L,AT

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F, AND K DESIGNATION)**
(Continued)**

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
F001	Spent Halogenated Solvents	Toxic	B,T,L,AT
F002	Spent Halogenated	Toxic	B,T,L,AT
F003	Spent non-halogenated solvents	Ignitable	B,T,L,AT
F004	Spent non-halogenated solvents	Toxic	B,T,L,AT
F005	Spent non-halogenated solvents	Ignitable, Toxic	B,T,L,AT
F006	Wastewater treatment sludges from electroplating	Toxic	L,AT
F007	Spent cyanide plating bath; solutions from electroplating	Reactive, Toxic	AT,L
F008	Plating bath sludges	Reactive, Toxic	AT,L
F009	Spent stripping and cleaning bath solutions from electroplating	Reactive, Toxic	AT,L

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F AND K DESIGNATION)**
(Continued)**

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
F010	Quenching bath sludges from oil baths from metal heat treating	Reactive, Toxic	T,L
F011	Spent cyanide solu- tions from salt bath cleaning from metal heat treating	Reactive, Toxic	AT,L
F012	Quenching wastewater treatment sludges from metal heat treating	Toxic	L,AT
F019	Wastewater treat- ment sludges	Toxic	L,AT
F020(4)	Wastes from the production or use of tri- or tetra- chlorophenol	Acute Hazardous	AT,L,T
F021(4)	Wastes from the production or use of pentachlorophenol	Acute Hazardous	AT,L,T
F022(4)	Wastes from the manufacturing of tetra-, penta-, or hexachlorobenzenes	Acute Hazardous	AT,L,T

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F AND K DESIGNATION)**
(Continued)**

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
F023(4)	Wastes from the production of materials or equipment previously used for the production of use of tri- and tetrachlorophenols	Acute Hazardous	AT,L,T
F024	Wastes, including but not limited to distillation residues, heavy ends, tars, and reactor cleanout wastes	Toxic	B,L,T
F025	Condensed light ends and other wastes from the production of certain chlorinated aliphatic hydrocarbons	Toxic	B,L,T
F026(4)	Wastes from the production of materials on equipment previously used for the use of tetra-, penta-, or hexachlorobenzene	Acute Hazardous	AT,L,T
F027(4)	Discarded unused formulations containing tri-, tetra-, or penta-chlorophenol	Acute Hazardous	AT,L,T

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F AND K DESIGNATION)**
(Continued)**

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
F028(4)	Residues from the incineration or thermal treatment of soil with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027	Toxic	AT,L,T
F032	Wastewaters, process residuals, drippage & spent formulations from wood preserving using <u>chlorophenolic</u> formulations	Toxic	B, T, L
F034	Same as above, substitute creosote for chlorophenolic	Toxic	B, T, L
F035	Same as above, substitute preservatives containing arsenic or chromium	Toxic	B, T, L
F037	Petroleum refinery oil/water/solids separation sludge	Toxic	B, T, L
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge	Toxic	B, T, L
F039	Multisource Leachate	Toxic	AT,B,L

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F AND K DESIGNATION)**
(Continued)**

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
K001	Bottom sediment sludge	Toxic	T,L
K002	Wastewater treatment sludge	Toxic	L,AT
K003	Wastewater treatment sludge	Toxic	L,AT
K004	Wastewater treatment sludge	Toxic	L,AT
K005	Wastewater treatment sludge	Toxic	L,AT
K006	Wastewater treatment sludge	Toxic	L,AT
K007	Wastewater treatment sludge	Toxic	L,AT
K008	Oven Residue	Toxic	L,AT
K009	Distillation bottoms	Toxic	B,T,L
K010	Distillation side cuts	Toxic	B,T,L
K011	Bottom stream from wastewater stripper	Reactive, Toxic	T,L

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F AND K DESIGNATION)**
(Continued)**

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
K013	Bottom stream from acetonitrile column	Reactive, Toxic	B,T,L
K014	Bottoms from acetonitrile purification	Toxic	B,T,L
K015	Still bottoms from distillation	Toxic	B,T,L
K016	Heavy ends or distillation residue	Toxic	B,T,L
K017	Heavy ends (still bottoms)	Toxic	B,T,L
K018	Heavy ends	Toxic	B,T,L
K019	Heavy ends	Toxic	B,T,L
K020	Heavy ends	Toxic	B,T,L
K021	Aqueous spent antimony catalyst	Toxic	L,T
K022	Distillation bottom tars	Toxic	B,T,L
K023	Distillation light ends	Toxic	B,T,L

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F AND K DESIGNATION)**
(Continued)**

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
K024	Distillation bottoms	Toxic	B,T,L
K025	Distillation bottoms	Toxic	B,T,L
K026	Stripping still tails	Toxic	B,T,L
K027	Centrifuge and dis- tillation residues from TDI	Reactive, Toxic	T,L
K028	Spent catalyst	Toxic	T,L
K029	Product steam stripper	Toxic	B,T,L
K030	Column bottoms or heavy ends	Toxic	B,T,L
K031	By-product salts	Toxic	T,L
K032	Wastewater treatment sludge	Toxic	AT,T,L
K033	Wastewater and scrub water	Toxic	AT,B,T,L
K034	Filter solids	Toxic	T,L
K035	Wastewater treatment sludges	Toxic	T,L

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F, AND K DESIGNATION)**
(Continued)**

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
K036	Still bottoms	Toxic	B,T,L
K037	Wastewater treatment washing and stripping	Toxic	L,T
K038	Wastewater from washing and stripping	Toxic	AT,B,T,L
K038	Distillation bottoms	Toxic	B,T,L
K039	Filter cake	Toxic	L,T
K040	Wastewater treatment sludge	Toxic	L,T
K041	Wastewater treatment sludge	Toxic	L,T
K042	Heavy ends or dis- tillation residues	Toxic	B,T,L
K043	2,6 dichlorophenol waste	Toxic	B,T,L
K044	Wastewater treatment sludges	Reactive	L (if non-reactive)

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F, AND K DESIGNATION)**
(Continued)**

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
K045	Spent Carbon	Reactive	T,L (if non-reactive)
K046	Wastewater treatment sludges	Toxic	L
K047	Pink/redwater	Reactive	AT,B,L (if non-reactive)
K048	DAF/float	Toxic	B,AT,T,L
K049	Slop oil emulsion solids	Toxic	B,AT,T,L
K050	Heat exchanger bundle cleaning sludge	Toxic	B,AT,T,L
K051	API separator sludge	Toxic	B,AT,T,L
K052	Tank bottoms	Toxic	B,AT,T,L
K060	Ammonia still lime sludge	Toxic	L
K061	Emission control dust/sludge	Toxic	L
K062	Spent pickle liquor	Corrosive, toxic	AT,L

TABLE C-1
HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F, AND K DESIGNATION)**
(Continued)

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
K064	Copper Production - Acid Plant blowdown sludge from thickening	Toxic	L,T
K065	Lead Smelting - surface impoundment solids and sludges	Toxic	L,T
K066	Zinc Production - Sludge from treatment of wastewater, acid plant waste	Toxic	L,T
K069	Emission control dust/sludge	Toxic	L
K071	Brine purification muds	Toxic	L,AT
K073	Chlorinated hydro- carbon wastes	Toxic	B,T,L
K083	Aniline wastes	Toxic	B,T,L
K084	Wastewater treatment sludges	Toxic	L,T
K085	Distillation or fraction- ation column bottoms	Toxic	B,T,L
K086	Solvent washes and sludges	Toxic	B,AT,L,T

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F, AND K DESIGNATION)**
(Continued)**

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
K087	Decanter tank tar sludge	Toxic	B,T,L
K088	Spent Potliner	Toxic	L,T
K088	Aluminum Reduction - spent potliners from primary aluminum reduction	Toxic	L,T
K090	Ferro-Chromium Silicon Production - emission control dust or sludge	Toxic	L,T
K091	Ferro-Chromium Production-emission control dust or sludge	Toxic	L,T
K093	Distillation light ends	Toxic	B,T,L
K094	Distillation bottoms	Toxic	B,T,L
K095	Distillation bottoms	Toxic	B,T,L
K096	Heavy ends	Toxic	B,T,L
K097	Vacuum stripper discharger	Toxic	B,T,L

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F, AND K DESIGNATION)**
(Continued)**

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
K098	Untreated process wastewater	Toxic	AT,B,T,L
K099	Untreated wastewater	Toxic	AT,B,T,L
K100	Waste leaching solution	Toxic	AT,L
K101	Distillation tar residues	Toxic	B,T,L
K102	Residue from activated carbon	Toxic	L,T
K103	Process residues	Toxic	B,T,L
K104	Combined wastewater	Toxic	B,T,AT,L
K105	Separated aqueous stream from product washing step of chlorobenzenes	Toxic	B,T,L
K105	Separated aqueous stream	Toxic	B,T,AT,L
K106	Wastewater treatment sludge	Toxic	L,AT

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F, AND K DESIGNATION)**
(Continued)**

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
K107(5)	Column bottoms from 1,1-dimethyl-hydrazine production	Corrosive, Toxic	B,T,AT,L
K108(5)	Condensed column overheads from 1,1-dimethyl-hydrazine production	Ignitable, Toxic	B,T,AT,L
K109(5)	Spent filter cartridges from 1,1-dimethyl-hydrazine production	Toxic	B,T,L
K110(5)	Condensed column overheads from intermediate separation from 1,1-dimethyl-hydrazine production	Toxic	B,T,L
K111	Product washwaters of dinitrotoluene	Toxic	B,T,L
K112	Reaction by-product water of toluenediamine	Toxic	B,T,L
K113	Condensed liquid light ends of toluenediamine	Toxic	B,T,L
K114	Vicinals of toluenediamine	Toxic	B,T,L
K115	Heavy ends of toluenediamine	Toxic	B,T,L

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F, AND K DESIGNATION)**
(Continued)**

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
K116	Organic condensate of TDI	Toxic	B,T,L
K117	Wastewater of ethylene dibromide	Toxic	B,T,L
K118	Spent absorbent solids of ethylene dibromide	Toxic	B,T,L
K123(5)	Process wastewater from the production of Ethylene bisdi-thiocarbamic acid	Toxic	L,T
K124(5)	Reactor Vent Scrubber from ethylenebis-di-thiocarbamic acid	Toxic	L,T
K125(5)	Filter, Evaporation & Centrifuge Solids ethylenebis-dithio-carbamic acid	Toxic	L,T
K126(5)	Baghouse dust and floor sweepings from ethylenebis-dithio-carbamic acid	Toxic	L,T
K131(5)	Wastewater from methyl bromide production	Toxic	L,T

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F, AND K DESIGNATION)**
(Continued)**

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
K132(5)	Spent absorbent and wastewater separator solids from methyl bromide production	Toxic	L,T
K136	Still bottoms of ethylene dibromide	Toxic	B,T,L
K140	Floor sweepings, off-specification product and spent filter media from the production of 2,4,6-Tribromophenol	Toxic	B,T,L,AT
K141	Process residues from the recovery of coal tar	Toxic	L, T
K142	Tar storage tank residues from production of coke	Toxic	L,T
K143	Process residues from recovery of light oil	Toxic	L,T
K144	Wastewater sump residues from light oil refining	Toxic	L,T
K145	Residues from naphthalene collection and recovery operations	Toxic	L,T
K147	Tar storage tank residues from coal tar refining	Toxic	L,T

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F, AND K DESIGNATION)** (Continued)**

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
K148	Residues from coal tar distillation	Toxic	L,T
K149	Distillation or fractionation bottoms from alpha or methyl chlorinated toluene, ringed chlorinated toluene, benzoyl chloride	Toxic	B,T,L
K150	Residuals from production of alpha-chlorinated toluenes	Toxic	B,T,L
K151	Wastewater treatment sludges from production of alpha-chlorinated toluenes	Toxic	B,T,L
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes	Toxic	B,T,AT,L
K157	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes	Toxic	B,T,AT,L
K158	Bag house dust, and filter/separation solids from the production of carbamates and carbamoyl oximes	Toxic	B,T,L
K159	Organics from the treatment of thiocarbamate wastes	Toxic	B,T,AT,L

TABLE C-1

**HAZARDOUS MATERIALS MANAGED AT MODEL CITY FACILITY
(B, D, F, AND K DESIGNATION)** (Continued)**

<u>EPA Hazardous Waste No.</u>	<u>Waste Common Name</u>	<u>Basis for Listing Hazardous Waste</u>	<u>TSD(1)(2) Option</u>
K161	Purification solids (including filtration, evaporation, and centrifugation solids), bag house dust and floor sweepings from the production of dithiocarbamate acids and their salts (This does not include K125 or K126)	Toxic	B,T,L
K169	Crude oil storage tank sediment from petroleum refining operations	Toxic	B,T,L
K170	Clarified slurry oil storage tank sediment and/or in-line filter/separation solids from petroleum refining operations	Toxic	B,T,L
K171	Spent hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic units	Toxic	B,T,L
K172	Spent hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic units	Toxic	B,T,L
K174	Wastewater treatment sludges from the production of ethylene dichloride or vinyl chloride monomer unless the sludges are landfilled in a Subtitle C or non-haz landfill permitted by federal or state government	Toxic	B,T,L
K175	Wastewater treatment sludges from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process	Toxic	B,T,L
K176	Baghouse filters from the production of antimony oxide, including filters from the production of intermediates (e.g., antimony metal or crude antimony oxide)	Toxic	B,T,L
K177	Slag from the production of antimony oxide that is speculatively accumulated or disposed, including slag from production of intermediates (e.g., antimony metal or crude antimony oxide)	Toxic	B,T,L
K178	Solids from manufacturing and manufacturing-site storage of ferric chloride from acids formed during the production of titanium dioxide using the chloride-ilmenite process	Toxic	B,T,L

TABLE C-2
HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**

The following list of materials are identified as acute hazardous wastes. The primary hazard has been identified by the following letters: R = reactive; I = ignitable, C = corrosive; T = toxic. If no letter is shown, the compound should be considered as acute hazardous waste for waste numbers beginning with a P.

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
P001	Warfarin	T,B,L
P001	3-(alpha-acetonylbenzyl)-4-hydroxycoumarin and salts	T,B,L
P002	Acetamide, N-(aminothioxomethyl)-	T,B,L
P002	1-Acetyl-2-thiourea	T,B,L
P003	2-Propenal	T,B,L
P003	Acrolein	T,B,L
P004	Isocyanic acid, methyl ester	T,L
P004	Aldrin	T,B,L
P004	1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-hexahydro-1,4:5,8-endo, exo-dimethanonaphthalene	T,B,L
P005	Allyl alcohol	T,B,L
P005	2-Propen-1-ol	T,B,L
P006	Aluminumphosphide	T,L (if non-reactive)
P007	3(2H)-Isoxazolone, 5-(aminomethyl)	T,B,L
P007	5-(Aminomethyl)-3-isoxazolol	T,B,L
P008	4-Pyridinamine	T,B,L
P008	4-alpha-Aminopyridine	T,B,L

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
P009	Ammoniumpicrate (R)	L,(not handled if shock sensitive)
P009	Phenol, 2,4,6-trinitro-, ammonium salt (R)	L,(not handled if shock sensitive)
P010	Arsenic acid	L
P011	Pyrophosphoric acid, tetraethyl ester	T,B,L
P011	Arsenic (V) oxide	L
P011	Arsenic pentoxide	L
P012	Arsenic (III) oxide	L
P012	Arsenic trioxide	L
P013	Barium cyanide	L
P014	Benzenethiol	T,B,L
P014	Thiophenol	T,L
P015	Beryllium dust	L
P016	Bis(chloromethyl)ether	T,B,L
P016	Methane, oxybis(chloro-	T,B,L
P017	2-Propanone, 1-bromo-	T,B,L
P018	Brucine	T,B,L
P018	Strychnidin-10-one, 2, 3-dimethoxy-	T,B,L
P020	Phenol, 2,4-dinitro-6(1-methylpropyl)-	T,B,L

TABLE C-2
HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
P020	Dinoseb	T,B,L
P021	Calcium cyanide	T,L
P022	Carbon disulfide	T,L
P022	Carbon bisulfide	T,L
P023	Chloroacetaldehyde	T,B,L
P023	Acetaldehyde, chloro-	B,T,L
P024	p-Chloroaniline	T,B,L
P024	Benzenamine, 4-chloro-	T,B,L
P026	Thiourea, (2-chlorophenyl)-	T,B,L
P026	1-(o-Chlorophenyl)thiourea	T,B,L
P027	Propanenitrile, 3-chloro-	T,B,L
P027	3-Chloropropionitrile	T,B,L
P028	Benzene, (chlormethyl)-	T,B,L
P028	Benzyl chloride	T,B,L
P029	Copper cyanides	L
P030	Cyanides (soluble cyanide salts), not elsewhere specified	L,T
P031 (5)	Cyanogen	L
P033(5)	Chlorine cyanide	L
P034	4,6-Dinitro-o-cyclohexylphenol	T,B,L
P034	Phenol, 2-cyclohexyl-4,6-dinitro-	T,B,L

** All footnotes may be referenced at the end of Table C-2 of the Waste Analysis Plan.

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
P036	Dichlorophenylarsine	T,B,L
P036	Phenyl dichloroarsine	T,B,L
P037	1,2,3,4,10,10-Hexachloro-6,7-epoxy- 1,4,4a,5,6,7,8,8a-octahydro-endo, exo-1,4:5,8-dimethanonaphthalene	T,B,L
P037	Dieldrin	T,B,L
P038	Diethylarsine	T,B,L
P038	Arsine, diethyl-	T,B,L
P039	O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorodithioate	T,B,L
P039	Disulfoton	T,B,L
P040	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester	T,B,L
P040	O,O-Diethyl O-pyrazinyl phosphorothioate	T,B,L
P041	Diethyl-p-nitrophenyl phosphate	T,B,L
P041	Phosphoric acid, diethyl p-nitrophenyl ester	T,B,L
P042	1,2-Benzenediol,4-[1-hydroxy- (methylamino) ethyl]	T,B,L
P042	Epinephrine	T,B,L
P043	Diisopropyl fluorophosphate	T,B,L
P043	Phosphorofluoric acid, bis (1-methylethyl)-ester	T,B,L

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
P044	Phosphorodithioic acid, O,O-dimethyl S-[2-(methlyamino) -2-oxoethyl]ester	T,B,L
P044	Dimethoate	T,B,L
P045	Thiofanox	T,B,L
P045	3,3-Dimethyl-1-(methylthio)-2-butanone, O-[methylamino]carbonyl]oxime	T,B,L
P046	alpha, alpha-Dimethylphenethylamine	T,B,L
P046	Ethanamine, 1,1-dimethyl-2-phenyl-	T,B,L
P047	Phenol, 2,4-dinitro-6-methyl-	T,B,L
P047	4,6-Dinitro-o-cresol and salts	T,B,L
P048	Phenol, 2,4-dinitro-	T,B,L
P048	2,4-Dinitrophenol	T,B,L
P049	Thiomidodicarbonic diamide	T,B,L
P049	2,4-Dithiobiuret	T,B,L
P050	Endosulfan	T,B,L
P050	5-Norbornane-2,3-dimethanol, 1,4,5,6,7,7-hexachloro, cyclic sulfite	T,B,L
P051	1,2,3,4,10,10-Hexachloro-6,7-epoxy- 1,4,4a,5,6,7,8,8a-octahydro-endo, endo- 1,4:5,8-dimethanonaphthalene	T,B,L
P051	Endrin	T,B,L
P054	Ethylenamine	T,B,L

TABLE C-2
HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
P054	Aziridine	T,B,L
P056(5)	Fluorine	L
P057	Fluoroacetamide	T,B,L
P057	Acetamide, 2-fluoro-	T,B,L
P058	Acetic acid, fluoro-, sodium salt	T,B,L
P058	Fluoroacetic acid, sodium salt	T,B,L
P059	4,7-Methano-1H-indene, 1,4,5,6,7,8-hep-tachloro-3a, 4,7,7a-tetrahydro	T,B,L
P059	Heptachlor	T,B,L
P060	1,2,3,4,10,10-Hexachloro-1,4,4a,8,8a- hexahydro-1,4:5,8-endo,endo-dimethan- onophthalene	T,B,L
P060	Hexachlorohexahydro-exo, exo-dimethanonaphthalene	T,B,L
P062	Hexaethyl tetraphosphate	T,B,L
P062	Tetraphosphoric acid, hexaethyl ester	T,B,L
P063(5)	Hydrogen Cyanide	L
P064	Methyl isocyanate	T,L
P065(5)	Fulmic Acid, Mercury Salt	L
P066	Acetimidic acid, N-[(methyl- carbamoyl)oxy]thio-, methyl ester	T,B,L
P066	Methomyl	T,B,L

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
P067	1,2-Propylenimine	T,B,L
P067	2-Methylaziridine	T,B,L
P068	Methyl hydrazine	T,B,L
P068	Hydrazine, methyl-	T,B,L
P069	2-Methylactonitrile	T,B,L
P069	Propanenitrile, 2-hydroxy- 2-methyl-	T,B,L
P070	Propanal, 2-methyl-2- (methylthio)-,O-[(methlyamino) carbonyl]oxime	T,B,L
P070	Aldicarb	T,B,L
P071	O,O-Dimethyl O-p-nitrophenyl phosphorothioate	T,B,L
P071	Methyl parathion	T,B,L
P072	Thiourea, 1-napthalenyl-	T,B,L
P072	alpha-Naphthylthiourea	T,B,L
P073	Nickel tetracarbonyl	L,T
P073	Nickel carbonyl	L,T
P074	Nickel(II) cyanide	L,T
P074	Nickel cyanide	L,T
P075	Pyridine, (S)-3-(1-methyl-2- pyrrolidinyl-, and salts	T,B,L
P075	Nicotine and sal	T,B,L

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
P076	Nitric oxide	L,T
P077	p-Nitroaniline	T,B,L
P077	Benzenamine, 4-nitro-	T,B,L
P078(5)	Nitrogen Dioxide	L
P081(5)	Nitroglycerine	L
P082	N-Nitrosodimethylamine	T,B,L
P082	Dimethylnitrosamine	T,B,L
P084	Ethenamine, N-methyl-N-nitroso-	T,B,L
P084	N-Nitrosomethylvinylamine	T,B,L
P085	Octamethylpyrophosphoramidate	T,B,L
P085	Diphosphoramidate, octamethyl-	T,B,L
P087	Osmium tetroxide	L
P087	Osmium oxide	L
P088	7-Oxabicyclo[2.2.1]heptane-2,3dicarboxylic acid	T,B,L
P088	Endothall	T,B,L
P089	Phosphorothioic acid, O,O-diethyl O-(p-nitrophenol)ester	T,B,L
P089	Parathion	T,B,L
P092	Mercury, (acetato-O)phenyl-	T,B,L
P092	Phenylmercuric acetate	T,B,L
P093	Thiourea, phenyl-	T,B,L

TABLE C-2
HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
P093	N-Phenylthiourea	T,B,L
P094	Phorate	T,B,L
P094	Phosphorothioic acid, O,O-diethyl S-(ethylthio) methyl ester	T,B,L
P095 (5)	Phosgene	L
P096 (5)	Hydrogen Phosphide	L
P097	Famphur	T,B,L
P097	Phosphorothioic acid, O,O-dimethyl O-[p-dimethylamino)-sulfonyl] phenyl]ester	T,B,L
P098	Potassium cyanide	T,L
P099	Potassium silver cyanide	L
P101	Ethyl cyanide	T,B,L
P101	Propanenitrile	T,B,L
P102	2-Propyn-1-01	T,B,L
P102	Propargyl alcohol	T,B,L
P103	Carbamimidoseleonic acid	T,B,L
P103	Selenourea	T,B,L
P104	Silver cyanide	L
P105	Sodium azide	L,(not handled if shock sensitive)

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
P106	Sodium cyanide	T,L
P108	Strychnidin-10-one, and salts	T,B,L
P108	Strychnine and salts	T,B,L
P109	Dithiopyrophosphoric acid, tetraethyl ester	T,B,L
P109	Tetraethyldithiopyrophosphate	T,B,L
P110	Plumbane, tetraethyl-	T,B,L
P110	Tetraethyl lead	T,B,L
P111	Tetraethylpyrophosphate	T,B,L
P112	Tetranitromethane (R)	L,T
P112	Methane, tetranitro-(R)	L,T
P113	Thallium(III) oxide	L
P113	Thallic oxide	L
P114	Thallium(I) selenite	L
P115	Sulfuric acid, thallium (I) salt	L
P115	Thallium(I) sulfate	L
P116	Thiosemicarbazide	T,B,L
P116	Hydrazinecarbothioamide	T,B,L
P118	Methanethiol, trichloro-	T,B,L
P118	Trichloromethanethiol	T,L

** All footnotes may be referenced at the end of Table C-2 of the Waste Analysis Plan.

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
P119	Vanadic acid, ammonium salt	L
P119	Ammonium vanadate	L
P120	Vanadium pentoxide	L
P120	Vanadium(V) oxide	L
P121	Zinc cyanide	L
P122	Zinc Phosphide (R,T) when present at concentration greater than 10%	T,L
P123	Toxaphene	T,B,L
P123	Camphene, octachloro-	T,B,L
P127	7-Benzofuranol, 2,3-dihydro- 2,2-dimethyl-, methylcarbamate (Carbofuran)	AT,T,B,L
P128	Phenol, 4-(dimethylamino)-3,5-dimethyl-, methylcarbamate (ester) (Mexacarbate)	AT,T,B,L
P185	1,3-Dithiolane-2-carboxaldehyde, 2,4-dimethyl-,o-[(methylamino)carbonyl]oxime (Tirpate)	AT,T,B,L
P188	Benzoic acid, 2-hydroxy, compd. with (3aS-cis)-1,2,3,3a,8,8a-hexahydro-1,3a, 8-trimethylpyrrolo[2,3-b]indol-5-yl methlycarbamate ester (1:1) (Physostigmine salicylate)	AT,T,B,L
P189	Carbamic acid, [(dibutylamino)thio] methyl-,2,3-dihydro-2,2-dimethyl-7-benzofuranyl ester (Carbosulfan)	AT,T,B,L
P190	Carbamic acid, methyl-,3-methylphenyl ester (Metolcarb)	AT,T,B,L
P191	Carbamic acid, dimethyl-,1- [(dimethylamino)carbonyl]-5-methyl-1H- pyrazol-3-yl ester (Dimetilan)	AT,T,B,L
P192	Carbamic acid, dimethyl-,3-methyl-1- (1-methylethyl)-1H-pyrazol-5-yl ester (Isolan)	AT,T,B,L

TABLE C-2

HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**

(continued)

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
P194	Ethanimidothioc acid, 2-(dimethylamino)-N-[[[(methylamino) carbonyl]oxy]-2-oxo-,methyl ester (Oxamyl)	AT,T,B,L
P196	Manganese, bis(dimethylcarbamodithioato-S,S')-, (Manganese dimethyldithiocarbamate)	AT,T,B,L
P197	Methanimidamide, N,N-dimethyl- N'-[2-methyl-4-[[[(methylamino)carbonyl] oxy]penyl]-,(Formparanate)	AT,T,B,L
P198	Methanimidamide, N,N-dimethyl-N'- [3-[[[(methylamino)carbonyl]oxy]phenyl]-, monohydrochloride (Formetanate hydrochloride)	AT,T,B,L
P199	Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate (Methiocarb)	AT,T,B,L
P201	Phenol, 3-methyl-5-(1-methylethyl)-, methyl carbamate (Promecarb)	AT,T,B,L
P202	Phenol, 3-(1-methylethyl)-, methyl carbamate 3-Isopropylphenyl N-methylcarbamate (m-Cumenyl methylcarbamate)	AT,T,B,L
P203	Propanal, 2-methyl-2-(methysulfonyl)-, o-[(methylamino)carbonyl] oxime (Aldicarb sulfone)	AT,T,B,L
P204	Pyrrolo[2,3-b]indol-5-ol, 1,2,3,3a,8,8a- hexahydro-1,3a,8-trimethyl-,methylcarbamate (ester), 3aS-cis)-(Physostigmine)	AT,T,B,L
P205	Zinc, bis(dimethylcarbamodithioato-S,S')-, (Ziram)	AT,T,B,L

The following list of materials are identified as toxic wastes. The primary hazard has been identified by the following letters: R = reactive; I = ignitable, C = corrosive; T = toxic. If no letter is shown, the compound should be considered as toxic waste for waste numbers beginning with a U.

U001	Acetaldehyde (I)	B,T,L
U001	Ethanal (I)	B,T,L
U002	Acetone (I)	B,T,L
U002	2-Propanone (I)	B,T,L

TABLE C-2
HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U003	Ethanenitrile (I,T)	B,T,L
U003	Acetonitrile (I,T)	B,T,L
U004	Acetophenone	B,T,L
U004	Ethanone, 1-phenyl-	B,T,L
U005	Acetamide, N-9H-fluoren-2yl-	B,T,L
U005	2-Acetylaminofluorene	B,T,L
U006	Ethanoyl chloride (C.R.T.)	L,T
U006	Acetyl chloride (C,R,T)	L,T
U007	Acrylamide	B,T,L
U007	Benzene, 1,2,4,5-tetrachloro-	B,T,L
U007	2-Propenamide	B,T,L
U008	Acrylic acid (I)	B,T,L
U008	2-Propenoic acid (I)	B,T,L
U009	Acrylonitrile	B,T,L
U009	2-Propenenitrile	B,T,L
U010	Azirino(w',3':3,4)pyrrolo(1,2-a) indole-4,7-dione, 6-amino-8 [[(aminocarbonyl)oxy)methyl]- 1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-	B,T,L
U010	Mitomycin C	B,T,L
U011	Amitrole	B,T,L
U011	1H-1,2,4-Triazol-3-amine	B,T,L
U012	Aniline (I,T)	B,T,L
U012	Benzenamine (I,T)	B,T,L
U014	Auramine	B,T,L
U014	Benzenamine, 4,4'- carbonimidoylbis (N,N-di-methyl-	B,T,L

TABLE C-2

HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**

(continued)

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U015	Azaserine	B,T,L
U015	L-Serine, diazoacetate (ester)	B,T,L
U016	Benz[c]acridine	B,T,L
U016	3,4-Benzacridine	B,T,L
U017	Benzal chloride	B,T,L
U017	Benzene, (dichloromethyl)-	B,T,L
U018	1,2-Benzanthracene	B,T,L
U018	Benz[a]anthracene	B,T,L
U019	Benzene (I,T)	B,T,L
U020	Benzenesulfonyl chloride (C,R)	L,T
U020	Benzenesulfonic acid chloride (C,R)	L,T
U021	Benzidine	B,T,L
U021	(1,1'-Biphenyl)-4,4'-diamine	B,T,L
U022	Benzo[a]pyrene	B,T,L
U022	3,4-Benzopyrene	B,T,L
U023	Benzotrichloride (C,R,T)	T,L
U023	Benzene, (trichloromethyl)- (C,R,T)	T,L
U024	Ethane, 1,1'-[methylenebis(oxy)] bis[2-chloro-	B,T,L
U024	Bis(2-chloroethoxy) methane	B,T,L
U025	Ethane, 1,1'-oxybis [2-chloro-	B,T,L
U025	Dichloroethyl ether	B,T,L
U026	Chlornaphazine	B,T,L

TABLE C-2

HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**

(continued)

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U026	2-Naphthylamine,N,N'-bis (2-chloromethyl)-	B,T,L
U027	Bis(2-chloroisopropyl) ether	B,T,L
U027	Propane, 2,2'-oxybis(2-chloro-	B,T,L
U028	1,2-Benzenedicarboxylic acid, [bis(2-ethyl-hexyl)]ester	B,T,L
U028	Bis(2-ethylhexyl)phthalate	B,T,L
U029	Methyl bromide	B,T,L
U029	Methane, bromo-	B,T,L
U030	Benzene, 1-bromo-4-phenoxy-	B,T,L
U030	4-Bromophenyl phenyl ether	B,T,L
U031	1-Butanol (I)	B,T,L
U031	n-Butyl alcohol (I)	B,T,L
U032	Calcium chromate	L
U032	Chromic acid, calcium salt	L
U033 (5)	Carbon Oxyfluoride	L
U034	Acetaldehyde, trichloro-	B,T,L
U034	Chloral	B,T,L
U035	Butanoic acid, 4-[Bis(2-chloro- ethyl)amino]benzene-	B,T,L
U035	Chlorambucil	B,T,L
U036	Chlordane, technical	B,T,L

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U036	4,7-Methanoindan, 1,2,4,5,6, 7,8,8-octa-chloro-3a,4,7,7a- tetrahydro-	B,T,L
U037	Benzene, chloro-	B,T,L
U037	Chlorobenzene	B,T,L
U038	Benzenacetic acid, 4-chloro- alpha-(4-chloro-phenyl)-alpha- hydroxy,ethyl ester	B,T,L
U038	Ethyl 4,4'-dichlorobenzilate	B,T,L
U039	4-Chloro-m-cresol	B,T,L
U039	Phenol, 4-chloro-3-methyl-	B,T,L
U041	1-Chloro-2,3-epoxypropane	B,T,L
U041	Oxirane, 2-(chloromethyl)-	B,T,L
U042	Ethene, 2-chloroethoxy-	B,T,L
U042	2-Chloroethyl vinyl ether	B,T,L
U043(5)	Vinyl Chloride	B,T,L
U044	Chloroform	B,T,L
U044	Methane, trichloro-	B,T,L
U045	Methane, chloro- (I,T)	B,T,L
U046	Chloromethyl methyl ether	B,T,L
U046	Methane, chloromethoxy-	B,T,L
U047	beta-Chloronaphthalene	B,T,L
U047	Naphthalene, 2-chloro-	B,T,L

TABLE C-2
HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U048	o-Chlorophenol	B,T,L
U048	Phenol, 2-chloro-	B,T,L
U049	Benzenamine, 4-chloro-2-methyl-	B,T,L
U049	4-Chloro-o-toluidine, hydrochloride	B,T,L
U050	1,2-Benzophenanthrene	B,T,L
U050	Chrysene	B,T,L
U051	Creosote	B,T,L
U052	Cresols	B,T,L
U052	Cresylic acid	B,T,L
U053	2-Butenal	B,T,L
U053	Crotonaldehyde	B,T,L
U055	Benzene, (1-methylethyl)-(I)	B,T,L
U055	Cumene (I)	B,T,L
U056	Benzene, hexahydro-(I)	B,T,L
U056	Cyclohexane (I)	B,T,L
U057	Cyclohexanone (I)	B,T,L
U058	Cyclophosphamide	B,T,L
U058	2H-1,3,2-Oxazaphosphorine, [bis(2-chloro-ethyl)amino] tetrahydro-, oxide 2-	B,T,L
U059	Daunomycin	B,T,L

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U059	5,12-Naphthacenedione, (8S-cis)-8-acetyl-10[(3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxyl]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy	B,T,L
U060	Dichloro diphenyl dichloroethane	B,T,L
U060	DDD	B,T,L
U061	DDT	B,T,L
U061	Dichloro diphenyl trichloroethane	B,T,L
U062	S-(2,3-Dichloroallyl) diisopropyl-thiocarbamate	B,T,L
U062	Diallate	B,T,L
U063	Dibenz[a,h]anthracene	B,T,L
U063	1,2:5,6-Dibenzanthracene	B,T,L
U064	Dibenz[a,i]pyrene	B,T,L
U064	1,2:7,8-Dibenzopyrene	B,T,L
U066	1,2-Dibromo-3-chloropropane	B,T,L
U066	Propane, 1,2-dibromo-3-chloro-	B,T,L
U067	Ethane, 1,2-dibromo-	B,T,L
U067	Ethylene dibromide	B,T,L
U068	Methane, dibromo-	B,T,L
U068	Methylene bromide	B,T,L
U069	Dibutyl phthalate	B,T,L

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U069	1,2-Benzenedicarboxylic acid, dibutyl ester	B,T,L
U070	Benzene, 1,2-dichloro-	B,T,L
U070	o-Dichlorobenzene	B,T,L
U071	Benzene, 1,3-dichloro-	B,T,L
U071	m-Dichlorobenzene	B,T,L
U072	p-Dichlorobenzene	B,T,L
U072	Benzene, 1,4-dichloro-	B,T,L
U073	(1,1'-Biphenyl)-4,4'-diamine, 3,3'dichloro-	B,T,L
U073	3,3'-Dichlorobenzidine	B,T,L
U074	1,4-Dichloro-2-butene (I,T)	B,T,L
U074	2-Butene, 1,4-dichloro-(I,T)	B,T,L
U075	Dichlorodifluoromethane	B,T,L
U075	Methane, dichlorodifluoro-	B,T,L
U076	Ethane, 1,1-dichloro-	B,T,L
U076	Ethylidene dichloride	B,T,L
U077	Ethane, 1,2-dichloro-	B,T,L
U077	Ethylene dichloride	B,T,L
U078	Ethene, 1,1-dichloro-	B,T,L
U078	1,1-Dichloroethylene	B,T,L

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U079	1,2-Dichloroethylene	B,T,L
U079	Ethene, trans-1,2-dichloro-	B,T,L
U080	Methylene chloride	B,T,L
U080	Methane, dichloro-	B,T,L
U081	1,4-Dichlorophenol	B,T,L
U081	Phenol, 2,4-dichloro-	B,T,L
U082	2,6-Dichlorophenol	B,T,L
U082	Phenol, 2,6-dichloro-	B,T,L
U083	1,2-Dichloropropane	B,T,L
U083	Propylene dichloride	B,T,L
U084	1,3-Dichloropropene	B,T,L
U084	Propene, 1,3-dichloro-	B,T,L
U085	2,2'-Bioxirane (I,T)	B,T,L
U085	1,2:3,4-Diepoxybutane (I,T)	B,T,L
U086	N,N-Diethylhydrazine	B,T,L
U086	Hydrazine, 1,2-diethyl-	B,T,L
U087	O,O-Diethyl-S-methyl- dithiophosphate	B,T,L
U087	Phosphorodithioic acid, O, O-diethyl-S-methylester	B,T,L
U088	1,2-Benzenedicarboxylic acid, diethyl ester	B,T,L

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U088	Diethyl phthalate	B,T,L
U089	Diethylstilbestrol	B,T,L
U089	4,4'-Stilbenediol, alpha,alpha'-diethyl-	B,T,L
U090	Benzene, 1,2-methylenedioxy-4-propyl-	B,T,L
U090	Dihydrosafrole	B,T,L
U091	(1,1'-Biphenyl)-4,4'diamine, 3,3'-dimethyl-	B,T,L
U091	3,3'-Dimethoxybenzidine	B,T,L
U092	Dimethylamine (I)	B,T,L
U092	Methanamine, N-methyl- (I)	B,T,L
U093	Benzenamine, N,N'-dimethyl-4-phenylazo-	B,T,L
U093	Dimethylaminoazobenzene	B,T,L
U094	7,12-Dimethylbenz[a]anthracene	B,T,L
U094	1,2-Benzanthracene 7,12-dimethyl-	B,T,L
U095	(1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethyl-	B,T,L
U095	3,3'-Dimethylbenzidine	B,T,L
U096	alpha,alpha-Dimethylbenzyl-hydroperoxide (R)	L,T
U096	Hydroperoxide, 1-methyl-1-phenylethyl- (R)	L,T

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U097	Dimethylcarbamoyl chloride	T,L
U097	Carbamoyl chloride, dimethyl-	T,L
U098	1,1-Dimethylhydrazine	B,T,L
U098	Hydrazine, 1,1-dimethyl-	B,T,L
U099	1,2-Dimethylhydrazine	B,T,L
U099	Hydrazine, 1,2-dimethyl-	B,T,L
U101	2,4-Dimethylphenol	B,T,L
U101	Phenol,2,4-dimethyl-	B,T,L
U102	1,2-Benzenedicarboxylic acid, dimethyl ester	B,T,L
U102	Dimethyl phthalate	B,T,L
U103	Dimethyl sulfate	B,T,L
U103	Sulfuric acid, dimethyl ester	B,T,L
U105	Benzene, 1-methyl-1-2,4-dinitro-	T,L (not handled if explosive)
U105	2,4-Dinitrotoluene	B,T,L
U106	2,6-Dinitrotoluene	B,T,L
U106	Benzene, 1-methyl-2,6-dinitro-	B,T,L
U107	1,2-Benzenedicarboxylic acid, di-n-octyl ester	B,T,L
U107	Di-n-octylphthalate	B,T,L

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U108	1,4-Dioxane	B,T,L
U108	1,4-Diethylene dioxide	B,T,L
U109	1,2-Diphenylhydrazine	B,T,L
U109	Hydrazine, 1,2-diphenyl-	B,T,L
U110	Dipropylamine (I)	B,T,L
U110	1-Propanamine, N-propyl- (I)	B,T,L
U111	Di-N-propylnitrosamine	B,T,L
U111	N-Nitroso-N-propylamine	B,T,L
U112	Ethyl acetate (I)	B,T,L
U112	Acetic acid, ethyl ester (I)	B,T,L
U113	Ethyl acrylate (I)	B,T,L
U113	2-Propenoic acid, ethyl ester (I)	B,T,L
U114	Ethylenebis(dithiocarbamic acid)	B,T,L
U114	1,2-Ethanediylobiscarbamodithioic acid	B,T,L
U115	Ethylene oxide (I,T)	B,T,L
U115	Oxirane (I,T)	B,T,L
U116	Ethylene thiourea	B,T,L
U116	2-Imidazolidinethione	B,T,L
U117	Ethyl ether (I)	B,T,L
U117	Ethane, 1,1'-oxybis- (I)	B,T,L

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U118	Ethylmethacrylate	B,T,L
U118	2-Propenoic acid, 2-methyl-, ethyl ester	B,T,L
U119	Ethyl methanesulfonate	B,T,L
U119	Methanesulfonic acid, ethyl ester	B,T,L
U120	Benzo[j,k]fluorene	B,T,L
U120	Fluoranthene	B,T,L
U121	Methane, trichlorofluoro-	B,T,L
U121	Methane, trichlorofluoro-	B,T,L
U121	Trichloromonofluoromethane	B,T,L
U122	Formaldehyde	B,T,L
U122	Methylene oxide	B,T,L
U123	Formic acid (C,T)	T,L,AT
U123	Methanoic acid (C,T)	B,T,L
U124	Furan (I)	B,T,L
U124	Furfuran (I)	B,T,L
U125	2-Furancarboxaldehyde (I)	B,T,L
U125	Furfural (I)	B,T,L
U126	Glycidylaldehyde	B,T,L
U126	1-Propanol, 2,3-epoxy-	B,T,L
U127	Benzene, hexachloro-	B,T,L

TABLE C-2

HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**

(continued)

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U127	Hexachlorobenzene	B,T,L
U128	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	B,T,L
U128	Hexachlorobutadiene	B,T,L
U129	Hexachlorocyclohexane (gamma isomer)	B,T,L
U129	Lindane	B,T,L
U130	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	B,T,L
U130	Hexachlorocyclopentadiene	B,T,L
U131	Ethane 1,1,1,2,2,2-hexachloro-	B,T,L
U131	Hexachloroethane	B,T,L
U132	Hexachlorophene	B,T,L
U132	2,2'-Methylenebis(3,4,6-trichlorophenol)	B,T,L
U133	Diamine (R,T)	T,L
U133	Hydrazine (R,T)	T,L
U134	Hydrofluoric acid (C,T)	T,L
U134	Hydrogen fluoride (C,T)	T,L
U135(5)	Hydrogen Sulfide	T,L
U136	Cacodylic acid	B,T,L
U136	Hydroxydimethylarsine oxide	B,T,L

** All footnotes may be referenced at the end of Table C-2 of the Waste Analysis Plan.

TABLE C-2
HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U137	Inden[1,2,3-cd]pyrene	B,T,L
U137	1,10-(1,2-phenylene)pyrene	B,T,L
U138	Methyl iodide	B,T,L
U138	Methane, iodo-	B,T,L
U140	Isobutyl alcohol (I,T)	B,T,L
U140	1-Propanol, 2-methyl-	B,T,L
U141	Benzene, 1,2-methylenedioxy-4-propenyl-	B,T,L
U141	Isosafrole	B,T,L
U142	Decachlorooctahydro-1,3,4-metheno-2H-cyclobuta[c,d]-pentalen-2-one	B,T,L
U142	Kepone	B,T,L
U143	Lasiocarpine	B,T,L
U144	Acetic acid, lead salt	L
U144	Lead acetate	L
U145	Lead phosphate	L
U145	Phosphoric acid, Lead salt	L
U146	Lead subacetate	L
U147	Maleic anhydride	T,B,L

** All footnotes may be referenced at the end of Table C-2 of the Waste Analysis Plan.

TABLE C-2
HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U147	2,5-Furandione	T,B,L
U148	1,2-Dihydro-3,6-pyridinedione	T,B,L
U148	Maleic hydrazide	T,B,L
U149	Propanedinitrile	B,T,L
U149	Malononitrile	B,T,L
U150	Alanine, 3-[p-bis(2-chloroethyl)amino] phenyl-,L-	B,T,L
U150	Melphalan	B,T,L
U151	Mercury	T,L,
U152	2-Propenenitrile, 2-methyl- (I,T)	B,T,L
U152	Methacrylonitrile (I,T)	B,T,L
U153 (5)	Methanethiol	L
U154	Methanol (I)	B,T,AT,L
U154	Methyl alcohol (I)	B,T,AT,L
U155	Pyridine, 2-[(2-dimethylamino)-2- thenylamino]-	B,T,L
U155	Methapyrilene	B,T,L
U156	Carbonochloridic acid, methyl ester (I,T)	B,T,L
U156	Methyl chlorocarbonate (I,T)	B,T,L
U157	Benz[j]aceanthrylene, 1,2- dihydro-3-methyl-,	B,T,L

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U157	3-Methylcholanthrene	B,T,L
U158	Benzenamine, 4,4'-methylenebis (2-chloro	B,T,L
U158	4,4'-Methylenebis (2-chloroaniline)	B,T,L
U159	2-Butanone (I,T)	B,T,L
U159	Methyl ethyl ketone (I,T)	B,T,L
U160	2-Butanone peroxide (R,T)	T,L
U160	Methyl ethyl ketone peroxide (R,T)	T,L
U161	Methyl isobutyl ketone (I)	B,T,L
U161	4-Methyl-2-pentanone (I)	B,T,L
U162	Methyl methacrylate (I,T)	B,T,L
U162	2-Propenoic acid, 2-methyl- methyl ester (I,T)	B,T,L
U163	Guanidine, N-nitroso-N-methyl- N'nitro-	B,T,L
U163	N-Methyl-N'-nitro-N- nitrosoguanidine	B,T,L
U164	4(1H)-Pyrimidinone, 2,3- dihydro-6-methyl-2-thioxo-	B,T,L
U164	Methylthiouracil	B,T,L
U165	Naphthalene	B,T,L

TABLE C-2
HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U166	1,4-Naphthalenedione	B,T,L
U166	1,4,Naphthaquinone	B,T,L
U167	1-Naphthylamine	B,T,L
U167	alpha-Naphthylamine	B,T,L
U168	2-Naphthylamine	B,T,L
U168	beta-Naphthylamine	B,T,L
U169	Benzene, nitro- (I,T)	B,T,L
U169	Nitrobenzene (I,T)	B,T,L
U170	Phenol, 4-nitro-	B,T,L
U170	p-Nitrophenol	B,T,L
U171	2-Nitropropane (I)	B,T,L
U171	Propane, 2-nitro- (I)	B,T,L
U172	1-Butanamine, N-butyl-N-nitroso-	B,T,L
U172	N-Nitrosodi-n-butylamine	B,T,L
U173	Ethanol, 2,2'-(nitrosoimino)bis-	B,T,L
U173	N-Nitrosodiethanolamine	B,T,L
U174	Ethanamine, N-ethyl-N-nitroso-	B,T,L
U174	N-Nitrosodiethylamine	B,T,L
U176	Carbamide, N-ethyl-N-nitroso-	B,T,L
U176	N-Nitroso-N-ethylurea	B,T,L

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U177	Carbamide, N-methyl-N-nitroso-	B,T,L
U177	N-Nitroso-N-methylurea	B,T,L
U178	Carbamic acid, methylnitroso-, ethyl ester	B,T,L
U178	N-Nitroso-N-methylurethane	B,T,L
U179	N-Nitrosopiperidine	B,T,L
U179	Pyridine, hexahydro-N-nitroso-	B,T,L
U180	Pyrrole, tetrahydro-N-nitroso-	B,T,L
U180	N-Nitrosopyrrolidine	B,T,L
U181	Benzemamine, 2-methyl-5-nitro	B,T,L
U181	5-Nitro-o-toluidine	B,T,L
U182	Paraldehyde	B,T,L
U182	1,3,5-Trioxane,2,4,5-trimethyl-	B,T,L
U183	Benzene, pentachloro-	B,T,L
U183	Pentachlorobenzene	B,T,L
U184	Ethane, pentachloro-	B,T,L
U184	Pentachloroethane	B,T,L
U185	Benzene, pentachloro-nitro-	B,T,L
U185	Pentachloronitrobenzene	B,T,L
U186	1-Methylbutadiene (I)	B,T,L
U186	2,3-Pentadiene (I)	B,T,L

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U187	Acetamide, N-(4-ethoxyphenyl)-	B,T,L
U187	Phenacetin	B,T,L
U188	Benzene, hydroxy-	B,T,L
U188	Phenol	B,T,L
U189 (5)	Phosphorous sulfide	L
U190	1,2-Benzenedicarboxylic acid anhydride	B,T,L
U190	Phthalic anhydride	B,T,L
U191	2-Picoline	B,T,L
U191	Pyridine, 2-methyl-	B,T,L
U192	3,5-Dichloro-N-(1,1-dimethyl- 2-propynyl)benzamide	B,T,L
U192	Pronamide	B,T,L
U193	1,3-Propane sultone	B,T,L
U193	1,2-Oxathiolane, 2,2-dioxide	B,T,L
U194	1-Propanamine (I,T)	B,T,L
U194	N-Propylamine (I,T)	B,T,L
U196	Pyridine	B,T,L
U197	1,4-Cyclohexadienedione	B,T,L
U197	p-Benzoquinone	B,T,L

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U200	Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-[3,4,5- trimethoxy-benzoyl)oxy]-, methyl ester	B,T,L
U200	Reserpine	B,T,L
U201	1,3-Benzenediol	B,T,L
U201	Resorcinol	B,T,L
U202	1,2-Benzisothiazolin-3-One, 1,1-dioxide	B,T,L
U202	Saccharin and salts	B,T,L
U203	Benzene, 1,2-methylenedioxy- 4-allyl-	B,T,L
U203	Safrole	B,T,L
U204	2,4,4-D,salts and esters	B,T,L
U204	Seleniumdioxide	L
U204	Selenious acid	L
U205	Selenium disulfide (R,T)	T,L
U205	Sulfur selenide (R,T)	T,L
U206	D-Glucopyranose, 2-deoxy- 2(3-methyl-3-nitro-soureido)-	B,T,L
U206	Streptozotocin	B,T,L
U207	1,2,4,5-Tetrachlorobenzene	B,T,L
U208	Ethane, 1,1,1,2-tetrachloro-	B,T,L
U208	1,1,1,2-Tetrachloroethane	B,T,L

TABLE C-2

HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**

(continued)

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U209	Ethane, 1,1,2,2-tetrachloro-	B,T,L
U209	1,1,2,2-Tetracloroethane	B,T,L
U210	Ethene, 1,1,2,2-tetrachloro-	B,T,L
U210	Tetrachloroethylene	B,T,L
U211	Carbon tetrachloride	B,T,L
U211	Methane, tetrachloro-	B,T,L
U213	Furan, tetrahydro- (I)	B,T,L
U213	Tetrachydrofuran (I)	B,T,L
U214	Acetic acid, thallium (I) salt	L
U214	Thallium (I) acetate	L
U215	Carbonic acid, dithallium (I) salt	L
U215	Thallium (I) carbonate	L
U216	Thallium (I) chloride	L
U217	Thallium (I) nitrate	L
U218	Ethanethioamide	B,T,L
U218	Thioacetamide	B,T,L
U219	Carbamide, thio-	B,T,L
U219	Thiourea	B,T,L
U220	Benzene, methyl-	B,T,L
U220	Toluene	B,T,L

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U221	Diaminotoluene	B,T,L
U221	Toluenediamine	B,T,L
U222	Benzenamine, 2-methyl-, hydrochloride	B,T,L
U222	O-Toluidine hydrochloride	B,T,L
U223	Benzene, 1,3-diisocyanatomethyl- (R,T)	T,L
U223	Toluene diisocyanate (R,T)	B,T,L
U225	Bromoform	B,T,L
U225	Methane, tribromo-	B,T,L
U226	1,1,1-Trichloroethane	B,T,L
U226	Methylchloroform	B,T,L
U227	Ethane, 1,1,2-trichloro-	B,T,L
U227	1,1,2-Trichloroetane	B,T,L
U228	Trichloroethene	B,T,L
U228	Trichloroethylene	B,T,L
U234	Benzene, 1,3,5-trinitro- (R,T)	T,L (not handled if shock sensitive)
U234	sym-Trinitrobenzene (R,T)	T,L(not handled if shock sensi- tive)
U235	Tris(2,3-dibromopropyl)phosphate	B,T,L

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U235	1-Propanol, 2,3-dibromo-, phosphate (3:1)	B,T,L
U236	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-di-methyl-(1,1'- biphenyl)-4,4'diyl)]-bis (azo) bis(5-amino-4-hydroxy)-,tetra- sodium salt	B,T,L
U236	Trypan blue	B,T,L
U237	Uracil, 5(bis(2-chloromethyl) amino)-	B,T,L
U237	Uracil mustard	B,T,L
U238	Carbamic acid, ethyl ester	B,T,L
U238	Ethyl carbamate (urethan)	B,T,L
U239	Benzene, dimethyl-(I,T)	B,T,L
U239	Xylene (I)	B,T,L
U240	2,4-Dichlorophenoxyacetic acid, salts and esters	B,T,L
U243	Hexachloropropene	B,T,L
U243	1-Propene, 1,1,2,3,3,3- hexachloro-	B,T,L
U244	Bis(dimethylthiocarbamoyl) disulfide	B,T,L
U244	Thiram	B,T,L
U246	Cyanogen bromide	T,L
U246	Bromine cyanide	T,L

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U247	Ethane, 1,1,1-trichloro-2,2-bis (p-methoxyphenyl)	B,T,L
U247	Methoxychlor	B,T,L
U248	3-(alpha-Acetylbenzyl)- 4-hydroxycoumarin and salts, when present at concentrations of 0.3% or less	T,L
U248	Warfarin, when present at concentrations of 0.3% or less	T,L
U249	Zinc phosphide, when present at concentrations of 10% or less	T,L (if non- reactive)
U271	Carbamic acid, [1-[(butylamino)carbonyl]- 1H-benzimidazol-2-yl]-, methyl ester (Benomyl)	AT,B,L,T
U278	1,3-Benzodioxol-4-ol,2,2-dimethyl-, methyl carbamate (Bendiocarb)	AT,B,L,T
U279	1-Naphthalenol, methylcarbamate (Carbaryl)	AT,B,L,T
U280	Carbamic acid, (3-chlorophenyl)-, 4-chloro-2-butynyl ester (Barban)	AT,B,L,T
U328	o-Toluidine	B,T,L,AT
U353	p-Toluidine	B,T,L,AT
U359	2-ethoxyethanol	B,T,L,AT
U364	1,3-Benzodioxol-4-ol, 2,2-dimethyl-, (Bendiocarb phenol)	B,T,L,AT

TABLE C-2

**HAZARDOUS MATERIALS MANAGED AT
MODEL CITY FACILITY**
(continued)**

<u>EPA Hazardous Waste No.</u>	<u>Substance</u>	<u>TSD(1)(2)(3)</u>
U367	7-Benzofuranol, 2,3-dihydro- 2,2-dimethyl-, (Carbofuran phenol)	B,T,L,AT
U372	Carbamic acid, 1H-benzimidazol- 2-yl, methyl ester (Carbendazim)	B,T,L,AT
U373	Carbamic acid, phenyl-, 1-methylethyl ester (Propham)	B,T,L,AT
U387	Carbamothioic acid, dipropyl-, S-(phenylmethyl)ester (Prosulfocarb)	B,T,L,AT
U389	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3,3-trichloro-2-propenyl) ester (Triallate)	B,T,L,AT
U394	Ethanimidothioic acid, 2-(dimethylamino)-N-hydroxy-2-oxo-, methyl ester (A2213)	B,T,L,AT
U395	Ethanol, 2,2'-oxybis-, discarbamate (Diethylene glycol, dicarbamate)	B,T,L,AT
U404	Ethanamine, N,N-diethyl-, (Triethylamine)	B,T,L,AT
U408	2,4,6-Tribromophenol	B,T,L,AT
U409	Carbamic acid, [1,2-phenylanabis(iminocarbonothioyl)]bis-, dimethyl ester (Thiophanate-methyl)	B,T,L,AT
U410	Ethanimidothioc acid, N,N'-[thiobis[(methylimino)carbonyloxy]]bis-, dimethyl ester (Thiodicarb)	B,T,L,AT
U411	Phenol, 2-(1-methylethoxy)-, methylcarbamate (Propoxur)	B,T,L,AT

FOOTNOTES-

- (1) The concentration and/or quantity of many of the cited waste constituents which may be accepted for treatment and/or disposal are limited by permit conditions and regulatory framework. The TSD Options selected for the cited materials are an estimate. Actual TSD Options will be driven by current permit conditions and current regulations, both State and Federal. Please refer to the introduction to this table for details (see pages C-1 through C-4).
- (2) Disposal and/or Treatment Codes:
T-Transfer. (Transfer is always an option.)
L-Landfill.
B-Blend/Burn.
AT-Aqueous Treatment.
- (3) The generator of Non-Bulk and Bulk containers must conform to the packaging requirements of:

49 CFR Subpart B - Table of Hazardous Materials and Special Provisions; specifically Part 172.101(i) Packaging Authorizations.

49 CFR Part 173 - Shippers - General Requirements for Shipments and Packagings.

49 CFR Part 178 - Specifications for Packagings.

Containers that arrive at the facility which do not meet the stated USDOT specifications shall not be shipped out of the facility unless the contents of the container are placed into a container which meets USDOT specifications. Containers that arrive at the facility which appear to have obvious signs of structural damage or deterioration, or which are found to be leaking shall either be repaired, overpacked into containers meeting RCRA container standards or otherwise addressed in accordance with the container module of the facility's permit.
- (4) These waste codes refer only to waste that may be classified as derived from F020-F023 and F026-F028 (i.e. leachate). No current production waste or out-dated products with these codes will be accepted.
- (5) Due to the hazards posed by concentrated forms of these substances, only treatment residues and contaminated media such as soil, water, debris, etc. will be managed.
- * Depends on DOT classification.



Appendix B

Literature of Liner System
Components

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	PRODUCTS
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GSE HD Textured

GSE HD Textured is a high quality, high density polyethylene (HDPE) geomembrane liner that has a textured surface on one or both sides of the liner, depending on the customer needs. It is a coextruded, textured liner, with a textured surface as an integral part of a three-layer co-extruded geomembrane sheet. GSE HD Textured is textured in-line, employing the same technology GSE has used for over a decade to produce many of our products including, GSE Conductive, GSE White and GSE UltraFlex Textured.

PRIMARY FEATURES of GSE HD Textured:

- Made from resins specifically designed for geomembrane production.
- Demonstrates the ability to withstand the rigors of direct exposure to the sun and ultraviolet light
- Textured surface improves liner stability and cover soil stability on slopes.
- Excellent chemical resistance
- Proven history of success
- Backed by the GSE commitment to quality

FOR MORE INFORMATION about GSE HD Textured, REFER TO THE FOLLOWING:

- GSE HD Textured Data Sheet (specification values)
- Frequently Asked Questions: GSE HD Textured
- Bibliography of related articles



GSE HD Textured

Textured HDPE Geomembrane

GSE HD Textured is the textured version of GSE HD. It is a high quality, high density polyethylene (HDPE) geomembrane with one or two coextruded, textured surfaces, and consisting of approximately 97.5% polyethylene, 2.5% carbon black and trace amounts of antioxidants and heat stabilizers; no other additives, fillers or extenders are used. The resin used is specially formulated, virgin polyethylene and is designed specifically for flexible geomembrane applications. GSE HD Textured has excellent resistance to UV radiation and is suitable for exposed conditions. This product allows projects with greater slopes to be designed since frictional characteristics are enhanced.

Product Specifications

TESTED PROPERTY	TEST METHOD	MINIMUM VALUES			
Thickness, mils (mm)	ASTM D 5994	27 (0.69)	36 (0.91)	54 (1.4)	72 (1.8)
Density, g/cm ³	ASTM D 1505	0.94	0.94	0.94	0.94
Tensile Properties (each direction) ¹	ASTM D 638, Type IV				
Strength at Break, lb/in-width (N/mm)	Dumbbell, 2 ipm	45 (8)	60 (11)	90 (16)	120(21)
Strength at Yield, lb/in-width (N/mm)		63 (11)	84 (15)	130 (23)	173 (30)
Elongation at Break, %	G.L. = 2.0 in (51 mm)	150	150	150	150
Elongation at Yield, %	G.L. = 1.3 in (33 mm)	13	13	13	13
Tear Resistance, lb (N)	ASTM D 1004	21 (93)	28 (124)	42 (187)	56 (249)
Puncture Resistance, lb (N)	ASTM D 4833	54 (240)	72 (320)	108 (480)	144 (641)
Carbon Black Content, %	ASTM D 1603	2.0	2.0	2.0	2.0
Carbon Black Dispersion	ASTM D 5596	+Note 1	+Note 1	+Note 1	+Note 1
Notched Constant Tensile Load ² , hrs	ASTM D 5397, Appendix	400	400	400	400
REFERENCE PROPERTY	TEST METHOD	NOMINAL VALUES			
Thickness, mils (mm)	ASTM D 5994	30 (0.75)	40 (1.0)	60 (1.5)	80 (20)
Roll Length (approximate), ft (m)	Standard Textured	830 (253)	700 (213)	520 (158)	400(122)
Oxidative Induction Time, minutes	ASTM D 3895, 200° C; O ₂ , 1 atm	>100	>100	>100	>100

NOTES:

+Note 1: Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.

GSE HD Standard Textured is available in rolls approximately 22.5 ft (6.9 m) wide and weighing about 3,700 lb (1,678 kg).

²The combination of stress concentrations due to coextrusion texture geometry and the small specimen size results in large variation of test results. Therefore, these tensile properties are minimum average values.

³Note: NCTL for HD Textured is conducted on representative smooth membrane samples.

All GSE geomembranes have dimensional stability of $\pm 2\%$ when tested with ASTM D 1204 and USB of $< 77^\circ \text{C}$ when tested with ASTM D 746.

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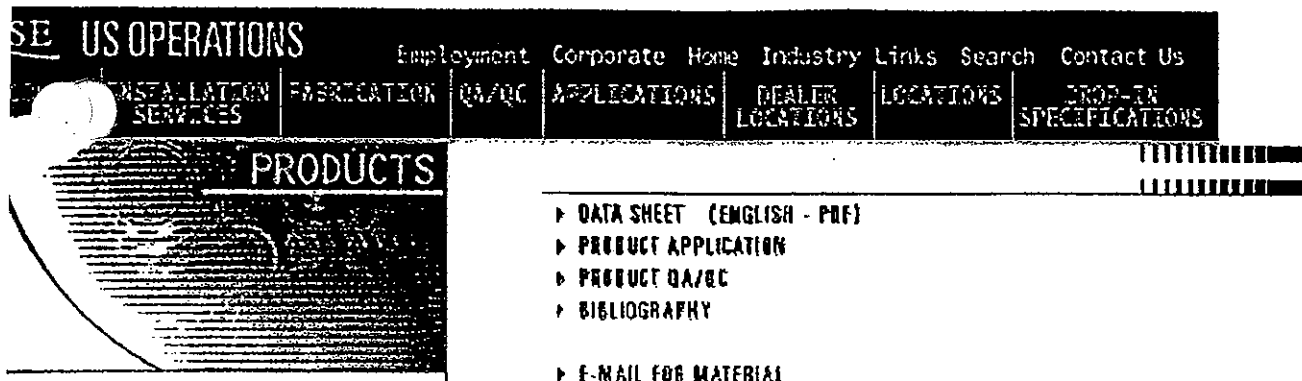
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Choose a Product

GSE Nonwoven Geotextiles

GSE Nonwoven is a family of polypropylene staple fiber nonwoven needle punched geotextiles. Manufactured using an advanced manufacturing and quality system, these products are the most uniform and consistent nonwoven needlepunched geotextiles currently available in the industry. GSE combines a fiber selection and approval system with in-line quality control and a state-of-the-art laboratory to ensure that every roll shipped meets customer specifications. The company has performed extensive performance testing to evaluate the suitability of its nonwovens for various design applications.

GSE Nonwoven Geotextiles are available in 300 feet and 1000 feet roll lengths, and 15 feet roll widths.

Primary features of GSE Nonwoven include:

- Virgin polypropylene staple fiber
- Excellent chemical and UV resistance
- Available in mass ranging from 4 to 16 oz. / sq. yards
- Available in 15 feet roll width, and 300 and 1000 feet roll lengths

For more information about GSE Nonwoven Geotextiles, refer to the following:

- [GSE Nonwoven Geotextiles Data Sheet \(specification values\)](#)
- [GSE Nonwoven Application Sheet](#)
- [Bibliography of Related Articles](#)



GSE Nonwoven Geotextiles

Polypropylene, Staple Fiber, Nonwoven Needle Punched Geotextiles

GSE Nonwoven Geotextiles is a family of polypropylene, staple fiber, nonwoven needle punched geotextiles. Manufactured using an advanced manufacturing and quality system, these products are the most uniform and consistent nonwoven needle punched geotextile currently available in the industry. GSE combines a fiber selection and approval system with in-line quality control and a state-of-the-art laboratory to ensure that every roll shipped meets customer specifications. The company has performed extensive performance testing to evaluate suitability of its nonwovens for various design applications. GSE Nonwoven Geotextiles are available in a range of weights to meet your specific project needs.

Product Specifications

TESTED PROPERTY	TEST METHOD	NW4	NW6	NW8	NW10	NW12	NW16
Mass per Unit Area, oz./yd ² (g/m ²)	ASTM D 5261	4 (135)	6 (200)	8 (270)	10 (335)	12 (405)	16 (540)
Thickness, mils (mm)	ASTM D 5199	45 (1.1)	60 (2.0)	90 (2.2)	105 (2.6)	115 (2.9)	165 (4.1)
Grab Tensile Strength, lbs (N)	ASTM D 4632	120 (530)	170 (755)	220 (975)	260 (1155)	320 (1420)	390 (1735)
Grab Elongation, %	ASTM D 4632	50	50	50	50	50	50
Puncture Strength, lbs (N)	ASTM D 4833	65 (285)	110 (485)	135 (600)	180 (800)	210 (930)	250 (1110)
Mullen Burst Strength, psi (kPa)	ASTM D 3786	230 (1585)	330 (2275)	420 (2895)	520 (3580)	620 (4270)	800 (5515)
Trapezoidal Tear Strength, lbs (N)	ASTM D 4533	50 (220)	70 (310)	95 (420)	100 (445)	125 (555)	150 (665)
Apparent Opening Size, Sieve No. (mm)	ASTM D 4751	70 (0.212)	70 (0.212)	80 (0.180)	100 (0.150)	100 (0.150)	100 (0.150)
Permittivity, sec ⁻¹	ASTM D 4491	1.50	1.50	1.50	1.20	0.80	0.70
Permeability, cm/sec	ASTM D 4491	0.22	0.30	0.30	0.30	0.29	0.27
Water Flow Rate, gpm/ft ² (l/min/m ²)	ASTM D 4491	120 (4885)	110 (4480)	110 (4480)	85 (3460)	60 (2440)	50 (2035)
UV Resistance (% retained after 500 hours)	ASTM D 4355	70	70	70	70	70	70

NOTES:

The property values listed are in weaker principal direction. Minimum Average Roll Values (MARV) are calculated as typical minus two standard deviations. Statistically, this method yields 97.5% confidence level that any sample taken from a roll will exceed the value reported.

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GSE GEOCOMPOSITES

GSE FabriNet is a geocomposite drainage material composed of GSE HyperNet, a 200-mil Bi-Planar HDPE geonet, with a geotextile fabric heat bonded to one or both sides. The geonet core provides a flow channel for fluids while the geotextile serves as a filter to prevent clogging of the drainage channel. The geonet core of GSE FabriNet is designed for applications where the expected field loads on the system could exceed 6,000 psf such as those experienced in landfill expansion cells. GSE FabriNet is available in 14.5 ft. (4.4 meters) rolls width and standard or special roll lengths.

GSE FabriNet HF is a geocomposite drainage material composed of GSE HyperNet, a 250-mil Bi-Planar HDPE geonet, with a geotextile fabric heat bonded to one or both sides. The geonet core provides a flow channel for fluids while the geotextile serves as a filter to prevent clogging of the drainage channel. The geonet core of GSE FabriNet is designed for applications where the expected field loads on the system could exceed 15,000 psf such as those experienced in landfill expansion cells. GSE FabriNet is available in 14.5 ft. (4.4 meters) rolls width and standard or special roll lengths.

GSE FabriCap is a geocomposite drainage material composed of GSE HyperNet CP, a lightweight Bi-Planar HDPE geonet, with a geotextile fabric heat bonded to one or both sides. The geonet core provides a flow channel for fluids while the geotextile serves as a filter to prevent clogging of the drainage channel. The geonet core of GSE FabriCap is a lightweight geonet designed for applications where the expected field loads on the system will be below 6,000 psf such as those experienced in landfill closures. GSE FabriCap is available in 14.5 ft. (4.4 meters) wide rolls in standard or special roll lengths.

Other GSE drainage products: HyperNet, HyperNet HF, and HyperNet CP.

Primary features of GSE FabriNet:

- Economical replacement for natural drainage materials
- Reliable and consistent performance
- Easy to install
- Excellent chemical resistance
- Manufactured with the highest quality raw materials
- Proven history of success

- Backed by the GSE commitment to quality

For more information about GSE FabriNet, refer to the following:

- [FabriNet Data Sheets \(specification values\)](#)
- [Frequently Asked Questions: Drainage Products](#)
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GSE FabriNet

HDPE Geonet/Geotextile Composite

GSE FabriNet geocomposites typically consist of GSE HyperNet with nonwoven polypropylene geotextile fabric heat-bonded to one or both sides. The geotextile serves as a filter to prevent the geonet from clogging while the geonet provides a path for fluids (liquids and gases). Geocomposites may also be used as a cushion to protect a geomembrane from unduly rough substrates. GSE FabriNet is designed specifically for use in situations where high normal loads are expected, such as in landfill cell designs.

Product Specifications

TESTED PROPERTY	TEST METHOD	MINIMUM AVERAGE VALUES ^(d)		
Geocomposite		6 oz/yd ²	8 oz/yd ²	10 oz/yd ²
Transmissivity ^(a) , m ² /sec	ASTM D 4716-00	1 x 10 ⁻⁴	1 x 10 ⁻⁴	9 x 10 ⁻⁵
Ply Adhesion, lb/in minimum	GRI GC-7	0.5	0.5	0.5
Ply Adhesion, lb/in average	GRI GC-7	1.0	1.0	1.0
Roll Width, ft (m)		14.5 (4.4)	14.5 (4.4)	14.5 (4.4)
Roll Length, ft (m)		230 (70.1)	200 (60.9)	190 (58.0)
Geonet core ^(b)				
Transmissivity ^(a) , m ² /sec	ASTM D 4716-00	2 x 10 ⁻³	2 x 10 ⁻³	2 x 10 ⁻³
Thickness, mil (mm)	ASTM D 5199	200 (5)	200 (5)	200 (5)
Density, g/cm ³	ASTM D 1505	0.94	0.94	0.94
Tensile Strength (MD), lb/in (N/mm)	ASTM D 5035	45 (7.9)	45 (7.9)	45 (7.9)
Carbon Black Content, %	ASTM D 1603	2.0	2.0	2.0
Geotextile (prior to lamination) ^(b,c)				
Thickness, mil (mm)	ASTM D 5199	80 (2.0)	90 (2.2)	105 (2.6)
Grab Tensile, lb (N)	ASTM D 4632	170 (755)	220 (975)	260 (1155)
Puncture Strength, lb (N)	ASTM D 4833	110 (485)	135 (600)	180 (800)
AOS, US sieve (mm)	ASTM D 4751	70 (0.212)	80 (0.180)	100 (0.150)
Flow Rate, gpm/ft ² (lpm/m ²)	ASTM D 4491	110 (4480)	110 (4480)	85 (3460)
UV Resistance, % retained	ASTM D 4355 (after 500 hours)	70	70	70

NOTES:

(a) Gradient of 0.1, normal load of 10,000 psf, water at 70° F between steel plates for 15 minutes.

(b) Component properties prior to lamination.

(c) Several geotextiles are available and may be supplied as determined by GSE.

(d) These are MARV values that are based on the cumulative results of specimens tested and determined by GSE.

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Ultra-Vera™ Highly UV Stable Geocomposite UVB 5066-2

Ultra-Vera™ Geocomposites have been created to reduce the liability of engineers, contractors, and owners. Project scheduling often pushes existing geotextile product technology to exposure limits that may cause deterioration. The name Ultra-Vera™ is derived from Latin, and means "Most Truth". Specifying Ultra-Vera™, the most durable geocomposite, with its application-oriented colors assures that your project will be a success.

UVB 5066-2 is a drainage geocomposite made by thermally bonding Tenax UltraVera™ highly UV stabilized, spunbonded, continuous filament, needlepunched, nonwoven, polypropylene 6 ounce per square yard geotextile to both sides of our chemically resistant high density polyethylene 6 mm geonet core. Tenax geocomposites have high compressive strength in order to ensure maximum flow capacity of both liquids and gases under high confining pressures, and exhibit high ply adhesion strengths to ensure performance of the composite as a single unit. Virgin resins used in the production of Tenax geonets consist of at least 97% polyethylene with a melt flow range between 0.1 and 1.0 grams per 10 minutes (ASTM D1238), and a density range of 0.932 to 0.970 grams per cubic centimeter (ASTM D1505). The geocomposite is delivered to the jobsite in roll form with each roll having unique identification and QA tractability. UVB 5066-2 conforms to the property values listed in the tables below.

95% UV Resistance @ 500 Hours

Property	Test Methods	Units	Value	Specifications ¹	Test Frequency
Geonet Core					
• MD Tensile	ASTM D 5035	ppi (kN/m)	90 (16)	MARV	50,000 sf
• Thickness	ASTM D 5199	mil (mm)	250 (6.4)	MARV	50,000 sf
• Compressive Creep ²	GRI-GS4		In accordance with GC-8 (Data in progress)		
Geotextile properties					
• U.V. Resistance (500 hrs)	ASTM G 154	%	95		
• OS	ASTM D 4751	US Std. Sieve (mm)	70 (0.212)	MARV	500,000 sf
• Mass/Unit Area	ASTM D 5261	oz/yd ² (g/m ²)	6 (203)	MARV	100,000 sf
• Water Flow Rate	ASTM D 4491	gpm/ft ² (lpm/m ²)	135 (5500)	MARV	500,000 sf
• Water Permeability	ASTM D 4491	cm/sec	0.3	MARV	500,000 sf
• Puncture Resistance	ASTM D 4833	lbs (N)	85 (378)	MARV	100,000 sf
• Tear Strength	ASTM D 4533	lbs (N)	65 (289)	MARV	100,000 sf
• Grab Tensile	ASTM D 4632	lbs (N)	170 (756)	MARV	100,000 sf
Geocomposite					
• Roll length	Direct Measure	ft (m)	225 (68.6)	nominal	Each roll
• Roll width	Direct Measure	ft (m)	14 (4.27)	nominal	Each roll
• Core ID	Direct Measure	in (m)	4 (0.1)	nominal	N/A
• Peel Adhesion ³	ASTM F 904	lb/in (g/in)	1.0 (454)		
• Labeling	Product code, geotextile type, roll dimensions, finished product lot and roll number.				
Hydraulic behavior of geocomposite					
• Performance Transmissivity ³	In accordance with GC-8				

Notes

1 MARV is defined as the one-sided 97.5% confidence limit obtained through long-term data (mean - 2* standard deviations) and represents the minimum allowable sample roll average for each specific test.

2 Peel adhesion ASTM F 904: 2 inch wide strip. Reported value per specimen is average of all computed points between 1" and 5" of separation.

3 Performance based testing in accordance with GC-8 should be conducted to meet specific project conditions. Contact Tenax Corporation for data to verify fitness for use in the intended applications.

4 Geotextile and Geonet Core component properties are tested prior to the lamination process and cannot be tested on the finished geocomposite product.

5 10,000 hour compressive creep testing is in progress and will be available at a later date please contact Tenax if this information is pertinent to your specific needs.



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Bentofix[®] Thermal Lock[®] Geosynthetic Clay Liners

Bentofix[®] Thermal Lock[®] Geosynthetic Clay Liners (GCLs) are needle-punch reinforced composites which combine two durable geotextile outer layers with a uniform core of natural sodium bentonite clay to form a hydraulic barrier. Fibers from the outer non-woven geotextile are needle-punched through the layer of bentonite and incorporated into the other geotextile (either a woven or a non-woven). A proprietary heat treating process – the Thermal Lock process – is then used to modify and more permanently lock the needle-punched fibers into place. Unique properties, including increased internal shear resistance and long term creep resistance, result from this production.

When hydrated under confinement, the bentonite swells to form a low permeability clay layer with the equivalent hydraulic protection of several feet of compacted clay. The excellent hydraulic properties and slope performance of the Bentofix[®] Thermal Lock[®] GCLs make the product ideal for many lining and cap containment projects.

GENERAL BENEFITS of the Bentofix[®] GCL include:

- High internal shear strength
- Uniform bentonite content
- Greater Installation durability
- More versatile than compacted clay
- Increased airspace and liner efficiency
- Easy to install

FOR MORE INFORMATION about Bentofix[®], REFER TO THE FOLLOWING:

- [Bentofix application sheet](#)
- [Bentofix data sheets \(specification values\)](#)
- [Frequently asked questions: Bentofix GCL](#)
- [Bibliography of related technical papers](#)

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Bentofix® Thermal Lock® Geosynthetic Clay Liner

Datasheets:

Bentofix® NSL	
Bentofix® NS	
Bentofix® NSE	
Bentofix® NWL	
Bentofix® NW-35	
Bentofix® NWE	
Bentofix® NWL-35	
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BENTOFIX® NS

Thermal Lock NS Geosynthetic Clay Liner (GCL)

Bentofix Thermal Lock "NS" is a needlepunch reinforced GCL comprised of a uniform layer of granular sodium bentonite encapsulated between a slit-film woven and a virgin staple fiber nonwoven geotextile. The needlepunched fibers are thermally fused to the woven geotextile to enhance the reinforcing bond.

Product Specifications

GEOTEXTILE PROPERTIES	TEST METHOD	MINIMUM TEST FREQUENCY	VALUE (ENGLISH)	VALUE (SI)
Cap Nonwoven (Mass/Unit Area)	ASTM D 5261	1/200,000 sq ft (1/20,000 sq m)	6.0 oz/yd ² MARV	200 g/m ² MARV
Woven Scream (Mass/Unit Area)	ASTM D 5261	1/200,000 sq ft (1/20,000 sq m)	3.1 oz/yd ² MARV	105 g/m ² MARV
BENTONITE PROPERTIES				
Swell Index	ASTM D 5890	1/100,000 lbs (50,000 kg)	24 ml/2 g min	24 ml/2 g min
Moisture Content	ASTM D 4643	1/100,000 lbs (50,000 kg)	12% max	12% max
Fluid Loss	ASTM D 5891	1/100,000 lbs (50,000 kg)	18 ml max	18 ml max
FINISHED GCL PROPERTIES				
Bentonite (Mass/Unit Area) ¹	ASTM D 5993	1/40,000 sq ft (1/4,000 sq m)	0.893 lb/sq ft MARV	4.34 kg/m ² MARV
Grab Strength ²	ASTM D 4632	1/40,000 sq ft (1/4,000 sq m)	95 lbs MARV	422 N MARV
Grab Elongation ²	ASTM D 4632	1/40,000 sq ft (1/4,000 sq m)	100% Typical	100% Typical
Peel Strength ³	ASTM D 4632	1/40,000 sq ft (1/4,000 sq m)	15 lbs min	66 N
Permeability ⁴	ASTM D 5084	1/100,000 sq ft (1/10,000 sq m)	5 x 10 ⁻⁸ cm/sec max	5 x 10 ⁻⁸ cm/sec max
Index Flux ⁴	ASTM D 5887	1/Week	1 x 10 ⁻⁴ m ³ /m ² /sec max	1 x 10 ⁻⁴ m ³ /m ² /sec max
Internal Shear Strength ⁵	ASTM D 6243	Periodic	500 psf Typical	24 kPa Typical
DIMENSIONS				
Width x Length	Nominal	Every Roll	15.5 x 150 ft	4.7 x 45.72 m
Area per Roll	Nominal	Every Roll	2325 ft ²	216 m ²
Packaged Weight	Typical	Every Roll	2600 lbs	1179 kg

NOTES:

- ¹ Oven-dried measurement. Equates to 1.0 lb when indexed to a 12% moisture content.
- ² Measured at maximum peak, in weakest principal direction. Elongation is provided for reference only.
- ³ Modified to use a 4-inch wide grip. The maximum peak of five specimens averaged.
- ⁴ De-Aired Tap Water @ 5 psi maximum effective confining stress and 2 psi head.
- ⁵ Typical peak value for specimen hydroted for 24 hours and sheared under a 200 psf normal stress.

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