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Subject: CCDD Soil Testing Requirements and Submittals

LPC 662 Form

LPC 662 form only allowed for projects with less than 500 cubic yards of CCDD.

LPC 662 form only allowed if background check (history of site and ERIS Database Report) has been completed and there are no potentially impacted properties (PIP).

LPC 662 form only allowed if all 9 items in Section III of form are answered as "no".

Testing must include PH – a minimum of two test locations.

LPC 663 Form

Testing for LPC663 form shall include a minimum of 2 soil tests for the first 500 cubic yards then a minimum of 1 soil test for each additional 1,000 cubic yards.

Testing of soils shall include at a minimum: VOC's, SVOC's, PNA's, RCRA Metals (Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver), Iron and PH in accordance with the MAC Table. Additional testing of other chemical constituents may be required based on the history of the site, ERIS Database Report and site reconnaissance.

Consolidated Stockpile Yards (i.e. Landscape yards, municipal public works etc.)

If consolidating soil from different location addresses for stockpiling until ready to transport, Thelen requires that the LPC-663 protocol be followed for each 1000cy of material.

For the first 1000cy yards 3 samples shall be taken, then 1 sample for each additional 1000cy thereafter.

Samples shall be analyzed at a minimum for VOC's, SVOC's, PNA's RCRA Metals (Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver) Iron and PH in accordance with the IEPA MAC table. The source address on the 663 form can be the address in which the physical location of the stockpile resides.

Submittals

All submittals shall include at a minimum the Material Profile Sheet for the CCDD Facility (Antioch and/or Petersen), Clean Fill Agreement (Antioch and/or Petersen), LPC662 or LPC663 form, aerial map showing work limits and soil test locations, analytical reports from testing laboratory, ERIS Database Report (if applicable), brief description of project scope. Additional information may be requested\required based on the site.

Applications shall be submitted a minimum two working days prior to material acceptance.

**Summary of
Maximum Allowable Concentrations of Chemical Constituents
In Uncontaminated Soil Used as Fill Material
At Regulated Fill Operations
(35 Ill. Adm. Code 1100.Subpart F)**

Chemical Name	Maximum Allowable Concentration ^a
Acenaphthene	570 ^b mg/kg
Acetone	25 ^b mg/kg
Alachlor	0.04 ^b mg/kg
Aldicarb	0.013 ^{b,l} mg/kg
Aldrin	0.94 ^c mg/kg
Anthracene	12,000 ^b mg/kg
Antimony	5 ^{d,m} mg/kg
Arsenic:	
within a MSA county	13.0 ^e mg/kg
within a non-MSA county	11.3 ^e mg/kg
Atrazine	0.066 ^b mg/kg
Barium	1,500 ^{d,m} mg/kg
Benzene	0.03 ^b mg/kg
Benzo(a)anthracene:	
within Chicago corporate limits	1.1 ^f mg/kg
within a populated area in a MSA excluding Chicago	1.8 ^f mg/kg
within a populated area in a non-MSA county or outside a populated area	0.9 ^g mg/kg
Benzo(b)fluoranthene:	
within Chicago corporate limits	1.5 ^f mg/kg
within a populated area in a MSA excluding Chicago	2.1 ^f mg/kg
within a populated area in a non-MSA county or outside a populated area	0.9 ^g mg/kg
Benzo(k)fluoranthene	9 ^g mg/kg

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Chemical Name	Maximum Allowable Concentration ^a
Benzoic Acid	400 ^d mg/kg
Benzo(a)pyrene:	
within Chicago corporate limits	1.3 ^f mg/kg
within a populated area in a MSA excluding Chicago	2.1 ^f mg/kg
within a populated area in a non-MSA county	0.98 ^f mg/kg
outside a populated area	0.09 ^g mg/kg
Beryllium	22 ^{d,m} mg/kg
Bis(2-chloroethyl)ether	0.66 ^c mg/kg
Bis(2-ethylhexyl)phthalate	46 ^g mg/kg
Boron	40 ^{h,m} mg/kg
Bromodichloromethane (Dichlorobromomethane)	0.6 ^b mg/kg
Bromoform	0.8 ^b mg/kg
Butanol	17 ^b mg/kg
Butyl benzyl phthalate	930 ⁱ mg/kg
Cadmium	5.2 ^{d,m} mg/kg
Calcium	---
Carbazole	0.6 ^b mg/kg
Carbofuran	0.22 ^{b,l} mg/kg
Carbon disulfide	9 ^g mg/kg
Carbon tetrachloride	0.07 ^b mg/kg
Chlordane	1.8 ^g mg/kg
Chloride	4,000 ^{h,m} mg/kg
4-Chloroaniline (<i>p</i> -Chloroaniline)	0.7 ^b mg/kg
Chlorobenzene (Monochlorobenzene)	1 ^b mg/kg
Chlorodibromomethane (Dibromochloromethane)	0.4 ^b mg/kg
Chloroform	0.3 ^g mg/kg
2-Chlorophenol	1.5 ^d mg/kg
Chromium, total	21 ^{d,m} mg/kg
Chrysene	88 ^g mg/kg
Cobalt	20 ^{h,m} mg/kg
Copper	2,900 ^g mg/kg

Chemical Name	Maximum Allowable Concentration ^a
Cyanide	40 ^{d,m} mg/kg
2,4-D	1.5 ^b mg/kg
Dalapon	0.85 ^b mg/kg
DDD	3 ^g mg/kg
DDE	2 ^g mg/kg
DDT	2 ^g mg/kg
Dibenzo(<i>a,h</i>)anthracene:	
within Chicago corporate limits	0.20 ^f mg/kg
within a populated area in a MSA excluding Chicago	0.42 ^f mg/kg
within a populated area in a non-MSA county	0.15 ^f mg/kg
outside a populated area	0.09 ^g mg/kg
1,2-Dibromo-3-chloropropane	0.002 ^b mg/kg
1,2-Dibromoethane (Ethylene dibromide)	0.005 ^c mg/kg
Di- <i>n</i> -butyl phthalate	2,300 ^l mg/kg
1,2-Dichlorobenzene (<i>o</i> – Dichlorobenzene)	17 ^b mg/kg
1,4-Dichlorobenzene (<i>p</i> – Dichlorobenzene)	2 ^b mg/kg
3,3'-Dichlorobenzidine	1.3 ^c mg/kg
1,1-Dichloroethane	23 ^b mg/kg
1,2-Dichloroethane (Ethylene dichloride)	0.02 ^b mg/kg
1,1-Dichloroethylene	0.06 ^b mg/kg
<i>cis</i> -1,2-Dichloroethylene	0.4 ^b mg/kg
<i>trans</i> -1,2-Dichloroethylene	0.7 ^b mg/kg
2,4-Dichlorophenol	0.48 ^d mg/kg
1,2-Dichloropropane	0.03 ^b mg/kg
1,3-Dichloropropene (1,3-Dichloropropylene, <i>cis</i> + <i>trans</i>)	0.005 ^c mg/kg
Dieldrin	0.603 ^c mg/kg
Diethyl phthalate	470 ^b mg/kg
2,4-Dimethylphenol	9 ^b mg/kg
2,4-Dinitrophenol	3.3 ^c mg/kg
2,4-Dinitrotoluene	0.25 ^c mg/kg
2,6-Dinitrotoluene	0.26 ^c mg/kg

Chemical Name	Maximum Allowable Concentration ^a
Dinoseb	0.25 ^d mg/kg
Di- <i>n</i> -octyl phthalate	1,600 ^g mg/kg
Endosulfan	18 ^b mg/kg
Endothall	0.4 ^{b,l} mg/kg
Endrin	1 ^b mg/kg
Ethylbenzene	13 ^b mg/kg
Fluoranthene	3,100 ^g mg/kg
Fluorene	560 ^b mg/kg
Fluoride	80 ^{h,m} mg/kg
Heptachlor	0.871 ^c mg/kg
Heptachlor epoxide	1.005 ^c mg/kg
Hexachlorobenzene	0.4 ^g mg/kg
<i>Alpha</i> -HCH (<i>alpha</i> -BHC)	0.0074 ^c mg/kg
<i>Gamma</i> -HCH (Lindane)	0.009 ^b mg/kg
Hexachlorocyclopentadiene	1.1 ^g mg/kg
Hexachloroethane	0.5 ^b mg/kg
Indeno(1,2,3- <i>c,d</i>)pyrene:	
within a populated area in a MSA excluding Chicago	1.6 ^f mg/kg
within Chicago corporate limits or within a populated area in a non-MSA county or outside a populated area	0.9 ^g mg/kg
Iron:	
within a MSA county	15,900 ^{e,m} mg/kg
within a non-MSA county	15,000 ^{e,m} mg/kg
Isophorone	8 ^b mg/kg
Lead	107 ^{d,m} mg/kg
Magnesium	325,000 ^g mg/kg
Manganese:	
within a MSA county	636 ^{e,m} mg/kg
within a non-MSA county	630 ^{e,m} mg/kg
Mercury:	
elemental	0.1 ^{g,n} mg/kg

Chemical Name	Maximum Allowable Concentration ^a
Mercury:	
ionic	0.89 ^{d,m,n} mg/kg
Methoxychlor	160 ^b mg/kg
Methyl bromide (Bromomethane)	0.2 ^b mg/kg
Methyl tertiary-butyl ether	0.32 ^b mg/kg
Methylene chloride (Dichloromethane)	0.02 ^b mg/kg
2-Methylphenol (<i>o</i> – Cresol)	15 ^b mg/kg
Naphthalene	1.8 ^g mg/kg
Nickel	100 ^{d,m} mg/kg
Nitrate as N	200 ^{h,m} mg/kg
Nitrobenzene	0.26 ^c mg/kg
<i>N</i> -Nitrosodiphenylamine	1 ^b mg/kg
<i>N</i> -Nitrosodi- <i>n</i> -propylamine	0.0018 ^c mg/kg
Pentachlorophenol	0.02 ^d mg/kg
Phenol	100 ^b mg/kg
Phosphorus	... ^j
Picloram	2 ^b mg/kg
Polychlorinated biphenyls (PCBs)	1 ^k mg/kg
Potassium	... ^j
Pyrene	2,300 ^g mg/kg
Selenium	1.3 ^{d,m} mg/kg
Silver	4.4 ^{d,m} mg/kg
Simazine	0.04 ^b mg/kg
Sodium	... ^j
Styrene	4 ^b mg/kg
Sulfate	8,000 ^{h,m} mg/kg
Tetrachloroethylene (Perchloroethylene)	0.06 ^b mg/kg
Thallium	2.6 ^{d,m} mg/kg
Toluene	12 ^b mg/kg
Toxaphene	0.6 ^g mg/kg
2,4,5-TP (Silvex)	11 ^d mg/kg

Chemical Name	Maximum Allowable Concentration ^a
1,2,4-Trichlorobenzene	5 ^b mg/kg
1,1,1-Trichloroethane	2 ^b mg/kg
1,1,2-Trichloroethane	0.02 ^b mg/kg
Trichloroethylene	0.06 ^b mg/kg
2,4,5-Trichlorophenol	26 ^d mg/kg
2,4,6-Trichlorophenol	0.66 ^c mg/kg
Vanadium	550 ^e mg/kg
Vinyl acetate	10 ^e mg/kg
Vinyl chloride	0.01 ^b mg/kg
m-Xylene	6.4 ^e mg/kg
o-Xylene	6.5 ^e mg/kg
p-Xylene	5.9 ^e mg/kg
Xylenes (total)	5.6 ^e mg/kg
Zinc	5,100 ^{d,m} mg/kg

^a = Concentrations are the results after using methods described in 35 IAC 1100.Subpart F for determining the Maximum Allowable Concentrations of chemical constituents in uncontaminated soils used as fill material at regulated fill operations.

^b = Value is the TACO Class I Soil Component of the Groundwater Ingestion Exposure Route concentration (35 IAC 742.Appendix B, Tables A and B).

^c = Value is the TACO-defined Acceptable Detection Limit (ADL) for the chemical in soil.

^d = Value is the lowest TACO Class I concentration between column range 6.25 to 6.64 and column range 8.75 to 9.0 from the pH-Specific Soil Remediation Objectives table for Inorganic and Ionizing Organic Chemicals for the Soil Component of the Groundwater Ingestion Route (35 IAC 742.Appendix B, Table C). (See 35 IAC 1100.605(a)(2); 1100.605(a)(3)(A)).

^e = Value is the location-specific allowable concentration based upon TACO-defined background values for inorganic chemicals (35 IAC 742.Appendix A, Table G). The location of the fill site determines the allowable concentration. Two background locations are defined; one for counties that are designated as Metropolitan Statistical Areas (MSA) (see Board Note, 35 IAC 742.Appendix A, Table G), the other for counties designated as a non-MSA.

^f = Value is the location-specific allowable concentration based upon TACO-defined background values for polynuclear aromatic hydrocarbon chemicals (35 IAC 742.Appendix A, Table H). The location of the fill site determines the allowable concentration. Three background locations are defined; one for areas within the corporate limits of the City of Chicago, another for populated areas (defined at 35 IAC

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742.200) in counties that are designated as Metropolitan Statistical Areas (MSA) (see Board Note, 35 IAC 742.Appendix A, Table G) excluding the City of Chicago, and the third for populated areas within non-MSA counties. No background concentrations have been defined for locations outside of populated areas; therefore, the maximum allowable concentrations in these locations are determined using 35 IAC 1100.Subpart F.

^g = Value is the lowest TACO Soil Remediation Objective by the ingestion or inhalation routes of exposure for the Residential and Construction Worker receptors (35 IAC 742.Appendix B, Tables A and B). When applicable, definitions for "MSA" and "populated area" are presented in 35 IAC 742.Appendix A, Table H and 35 IAC 742.200, respectively.

^h = Value is the TACO Class I Soil Component of the Groundwater Ingestion Exposure Route value multiplied by 20.

ⁱ = Soil saturation concentration (C_{sat}).

^j = This chemical is of no concern for soil ingestion and no data are available to assess other routes of exposure. There is no soil concentration limit established for this constituent.

^k = Value for PCBs is the highest allowable concentration requiring no controls based on USEPA TSCA (40 CFR 761) policy.

^l = SW-846 methods may not support analytical detection at the concentration specified. Modified or alternative methods may be required to achieve the lowest practical detection level possible.

^m = As an alternative to the subject maximum allowable concentration value, compliance verification may be determined by comparing soil sample extraction results (TCLP/SPLP) for this constituent to the respective TACO Class I Soil Component of the Groundwater Ingestion Exposure Route objective (35 Ill. Admin. Code 742.Appendix B, Table A). (See 35 IAC 1100.610(b)(1)(B); 1100.610(b)(3)(C)).

ⁿ = Elemental mercury is an inhalation hazard and is evaluated based upon the IRIS inhalation reference concentration for elemental mercury (CAS No. 7439-97-6). All other forms of mercury are evaluated using the IRIS oral reference dose for mercuric chloride (CAS No. 7487-94-7). The inhalation MAC only applies where elemental mercury is a contaminant of concern; the MAC for ionic mercury applies everywhere.