

EXECUTIVE SUMMARY

This technical development document describes the technical bases for the final Effluent Limitations Guidelines, Pretreatment Standards, and New Source Performance Standards for the Centralized Waste Treatment (CWT) Industry Point Source Category. The regulation (40 CFR Part 437) establishes technology-based effluent limitations guidelines and standards to reduce the discharge of pollutants into waters of the United States and into publicly owned treatment works (POTWs) by existing and new facilities that treat or recover hazardous or non-hazardous industrial waste, wastewater, or used material from off-site. Although the numerical effluent limitations and standards are based on specific processes or treatment technologies to control pollutant discharges, EPA does not require dischargers to use these technologies. Individual facilities may meet the numerical requirements using whatever types of treatment technologies, process changes, and waste management practices they choose.

The regulation controls discharges from the treatment and recovery of metal-bearing waste receipts, oily waste receipts, and organic waste receipts. The wastewater flows covered by the rule include both off-site and on-site generated wastewater. This includes materials received from off-site, solubilization water, used oil/emulsion breaking wastewater, tanker truck/drum/roll-off box washes, equipment washes, air pollution control waters, laboratory-derived wastewater, wastewater from on-site industrial waste combustors and landfills, and contaminated stormwater.

EPA developed different limitations and standards for the CWT operations depending on the type of waste received for treatment or recovery. EPA established four subcategories

for the CWT industry:

- Subcategory A: Facilities that treat or recover metal from metal-bearing waste, wastewater, or used material received from off-site (“metals subcategory”);
- Subcategory B: Facilities that treat or recover oil from oily waste, wastewater, or used material received from off-site (“oils subcategory”);
- Subcategory C: Facilities that treat or recover organics from organic waste, wastewater, or used material received from off-site (“organics subcategory”);
- Subcategory D: Facilities that treat or recover some combination of metal-bearing, oily, and organic waste, wastewater, or used material received from off-site (“multiple wastestream subcategory”).

The multiple wastestream subcategory simplifies implementation of the rule and compliance monitoring for CWT facilities that treat wastes subject to more than one of Subcategories A, B, and C. These facilities may elect to comply with the provisions of the multiple wastestream subcategory rather than the applicable provisions of subcategories A, B, or C. However, these facilities must certify that an equivalent treatment system is installed and properly designed, maintained, and operated.

**BEST PRACTICABLE CONTROL
TECHNOLOGY CURRENTLY AVAILABLE
(BPT)**

Es.1

The technology basis for the metals treatment and recovery subcategory BPT limitations is primary chemical precipitation, liquid-solid separation, secondary chemical precipitation, clarification, and sand filtration. For facilities that accept concentrated cyanide, metal-bearing wastestream, the rule is based on in-plant cyanide removal prior to metals treatment. The technology basis for in-plant cyanide control is alkaline chlorination in a two-step process.

The technology basis for the oils treatment and recovery subcategory BPT limitations is emulsion breaking/gravity separation, secondary gravity separation and dissolved air flotation.

The technology basis for the organics treatment and recovery subcategory BPT limitations is equalization and biological treatment (sequential batch reactor).

The BPT model technology long-term averages and effluent limitations for the metals, oils, and organics subcategories are listed in Table 1. The model technology long-term averages should be considered as design and operating targets – presented for informational purposes only. They are not effluent limitations and do not appear in 40 CFR Part 437. The long-term averages used in developing the effluent limitations are values that plants should design and operate to achieve on a consistent average basis. Plants that do this and maintain reasonable control over their operating and treatment system variability should have no difficulty in meeting the limitations. Plants that operate above the long-term averages must achieve good control of their treatment system variability to meet the limitations.

The BPT limitations for the multiple wastestream subcategory are subdivided into four segments. Each segment applies to one of the possible combinations of the first three subcategories of wastestreams. The multiple

wastestream subcategory limitations were derived by combining BPT pollutant limitations from each possible combination of subcategories and selecting the most stringent pollutant value where they overlap¹. Therefore, the technology bases for the multiple wastestream subcategory limitations reflect the technology basis for each applicable subcategory as detailed above. These limits may only apply to those facilities that accept wastes in multiple subcategories and elect to comply with the requirements of the multiple wastestream subcategory.

The BPT multiple wastestream long-term averages and limitations are listed in Table 2 for mixtures of:

- metal-bearing, oils, and organics waste receipts,
- metal-bearing and oils waste receipts,
- metal-bearing and organics waste receipts, and
- oils and organics waste receipts.

**BEST CONVENTIONAL POLLUTANT
CONTROL TECHNOLOGY (BCT)**

Es.2

The BCT effluent limitations for the conventional pollutant parameters (BOD₅, O&G, and TSS) are equivalent to the BPT limitations listed in Tables 1 and 2 for all subcategories.

**BEST AVAILABLE TECHNOLOGY
ECONOMICALLY ACHIEVABLE (BAT)**

Es.3

The BAT effluent limitations for the priority and non-conventional pollutants are equivalent to the BPT limitations listed in Tables 1 and 2 for all subcategories.

¹EPA selected the most stringent maximum monthly average limitations and its corresponding maximum daily limitation.

**NEW SOURCE PERFORMANCE STANDARDS
(NSPS)****Es.4**

For the oils and the organics subcategories, NSPS standards for the conventional, priority, and non-conventional pollutants are equivalent to the BPT/BCT/BAT limitations.

For the metals subcategory, NSPS standards are based on the recovery of metals for reuse through selective metals chemical precipitation, liquid-solid separation, secondary chemical precipitation, liquid-solid separation, and tertiary chemical precipitation and clarification. For in-plant cyanide control of concentrated cyanide wastes, the in-plant technology basis is alkaline chlorination in a two-step process. The NSPS long-term averages and standards for the metals, oils, and organics subcategories are listed in Table 3.

As was the case for BPT/BCT/BAT, the NSPS standards for the multiple wastestream subcategory are subdivided into four segments. The technology basis for the NSPS standards for the multiple wastestream subcategory reflect the technology bases for the applicable subcategories. The NSPS multiple wastestream long-term standards are listed in Table 4.

**PRETREATMENT STANDARDS FOR EXISTING
SOURCES (PSES)****Es.5**

PSES standards are established for those BAT pollutants that are determined to pass through or otherwise interfere with the operations of publicly owned treatment works (POTWs). For the metals and organics subcategories the priority and non-conventional pollutant PSES standards are based on the same technology as the BPT/BAT limitations for those pollutants that pass through POTWs.

For the oils subcategory, the technology basis for PSES is emulsion breaking/gravity separation, and dissolved air flotation. The PSES long-term averages and standards for the metals, oils, and organics subcategories are listed in Table 5.

The PSES standards for the multiple wastestream subcategory are also subdivided into four segments. The technology basis for pretreatment standards for the multiple wastestream subcategory reflect the technology bases for the applicable subcategories. The PSES multiple wastestream long-term averages and standards are listed in Table 6.

**PRETREATMENT STANDARDS FOR NEW
SOURCES (PSNS)****Es.6**

For the metals and organics subcategories, the technology bases for PSNS are equivalent to PSES. For the oils subcategory, the technology basis is equivalent to BPT/BAT. The PSNS long-term averages and standards for those pollutants that are determined to pass through POTWs are listed in Table 7 for the metals, oils, and organics subcategories .

The PSNS standards for the multiple wastestream subcategory are subdivided into four segments. The technology bases for the multiple wastestream subcategory new source standards reflect the technology bases for the applicable subcategories. The PSNS multiple wastestream long-term averages and standards are listed in Table 8.

Table Executive Summary-1. CWT design targets and BPT limitations by subcategory (mg/L)

Pollutant Parameters	CAS Registry Number	Metals - Subcategory A			Oils - Subcategory B			Organics - Subcategory C		
		Long-Term Average Design Targets	Limitations Daily Maximum	Limitations Monthly Average Maximum	Long-Term Average Design Targets	Limitations Daily Maximum	Limitations Monthly Average Maximum	Long-Term Average Design Targets	Limitations Daily Maximum	Limitations Monthly Average Maximum
CONVENTIONAL PARAMETERS*										
BOD ₅	C-003							41.0	163.	53.0
Oil & Grease	C-007	34.3	205.	50.2	28.3	127.	38.0			
TSS	C-009	16.8	60.0	31.0	25.5	74.1	30.6	45.0	216.	61.3
METAL ANALYTES										
Antimony	7440-36-0	0.170	0.249	0.206	0.103	0.237	0.141	0.569	0.928	0.679
Arsenic	7440-38-2	0.0839	0.162	0.104	0.789	2.95	1.33			
Barium	7440-39-3				0.221	0.427	0.281			
Cadium	7440-43-9	0.0580	0.474	0.0962	0.00746	0.0172	0.0102			
Chromium	7440-47-3	1.67	15.5	3.07	0.183	0.746	0.323			
Cobalt	7440-48-4	0.115	0.192	0.124	7.42	56.4	18.8			
Copper	7440-50-8	0.744	4.14	1.06	0.157	0.500	0.242	0.704	0.865	0.757
Cyanide (in-plant)		136	500	178						
Lead	7439-92-1	0.177	1.32	0.283	0.0986	0.350	0.160			
Mercury	7439-97-6	0.000560	0.00234	0.000739	0.00309	0.0172	0.00647			
Molybdenum	7439-98-7				1.54	3.50	2.09	0.943	1.01	0.965
Nickel	7440-02-0	1.16	3.95	1.45						
Selenium	7782-49-2	0.280	1.64	0.408						
Silver	7440-22-4	0.0264	0.120	0.0351						
Tin	7440-31-5	0.0898	0.409	0.120	0.107	0.335	0.165			
Titanium	7440-32-6	0.0569	0.0947	0.0618	0.0217	0.0510	0.0299			
Vanadium	7440-62-2	0.0500	0.218	0.0662						
Zinc	7440-66-6	0.413	2.87	0.641	3.14	8.26	4.50	0.382	0.497	0.420
ORGANIC ANALYTES										
Acetone	67-64-1							2.06	30.2	7.97
Acetophenone	98-86-2							0.0359	0.114	0.0562
Aniline	62-53-3							0.0105	0.0333	0.0164
Bis(2-ethylhexyl) phthalate	117-81-7				0.0629	0.215	0.101			
Butanone	78-93-3							0.878	4.81	1.85
Butylbenzyl phthalate	85-68-7				0.0550	0.188	0.0887			

Pollutant Parameters	CAS Registry Number	Metals - Subcategory A			Oils - Subcategory B			Organics - Subcategory C		
		Long-Term Average Design Targets	Limitations		Long-Term Average Design Targets	Limitations		Long-Term Average Design Targets	Limitations	
			Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum
Carbazole	86-74-8				0.151	0.598	0.276			
o-Cresol	95-48-7							0.185	1.92	0.561
p-Cresol	106-44-5							0.0682	0.698	0.205
n-Decane	124-18-5				0.238	0.948	0.437			
2,3-Dichloroaniline	608-27-5							0.0230	0.0731	0.0361
Fluoranthene	206-44-0				0.0173	0.0537	0.0268			
n-Octadecane	593-45-3				0.203	0.589	0.302			
Phenol	108-95-2							0.362	3.65	1.08
Pyridine	110-86-1							0.116	0.370	0.182
2,4,6-Trichlorophenol	88-06-2							0.0858	0.155	0.106

* – The promulgated performance bounds for pH are 6-9 in standard units.

Table Executive Summary-2. CWT design targets and BPT limitations for Subcategory D mixed wastestream combinations (mg/L)

Pollutant Parameters	CAS Registry Number	Metals, Oils, Organics (A, B, & C)			Metals, Oils (A & B)			Metals, Organics (A & C)			Oils, Organics (B & C)		
		Long-Term Average Design Targets	Limitations Daily Maximum	Limitations Monthly Average Maximum	Long-Term Average Design Targets	Limitations Daily Maximum	Limitations Monthly Average Maximum	Long-Term Average Design Targets	Limitations Daily Maximum	Limitations Monthly Average Maximum	Long-Term Average Design Targets	Limitations Daily Maximum	Limitations Monthly Average Maximum
CONVENTIONAL PARAMETERS*													
BOD ₅	C-003	41.0	163.	53.0				41.0	163.	53.0	41.0	163.	53.0
Oil & Grease	C-007	28.3	127.	38.0	28.3	127.	38.0	34.3	205.	50.2	28.3	127.	38.0
TSS	C-009	25.5	74.1	30.6	25.5	74.1	30.6	16.8	60.0	31.0	25.5	74.1	30.6
METAL ANALYTES													
Antimony	7440-36-0	0.103	0.237	0.141	0.103	0.237	0.141	0.170	0.249	0.206	0.103	0.237	0.141
Arsenic	7440-38-2	0.0839	0.162	0.104	0.0839	0.162	0.104	0.0839	0.162	0.104	0.789	2.95	1.33
Barium	7440-39-3	0.221	0.427	0.281	0.221	0.427	0.281				0.221	0.427	0.281
Cadium	7440-43-9	0.00746	0.0172	0.0102	0.00746	0.0172	0.0102	0.0580	0.474	0.0962	0.00746	0.0172	0.0102
Chromium	7440-47-3	0.183	0.746	0.323	0.183	0.746	0.323	1.67	15.5	3.07	0.183	0.746	0.323
Cobalt	7440-48-4	0.115	0.192	0.124	0.115	0.192	0.124	0.115	0.192	0.124	7.42	56.4	18.8
Copper	7440-50-8	0.157	0.500	0.242	0.157	0.500	0.242	0.704	0.865	0.757	0.157	0.500	0.242
Cyanide (in-plant)		136	500	178	136	500	178	136	500	178			
Lead	7439-92-1	0.0986	0.350	0.160	0.0986	0.350	0.160	0.177	1.32	0.283	0.0986	0.350	0.160
Mercury	7439-97-6	0.000560	0.00234	0.000739	0.000560	0.00234	0.000739	0.000560	0.00234	0.000739	0.00309	0.0172	0.00647
Molybdenum	7439-98-7	0.943	1.01	0.965	1.54	3.50	2.09	0.943	1.01	0.965	0.943	1.01	0.965
Nickel	7440-02-0	1.16	3.95	1.45	1.16	3.95	1.45	1.16	3.95	1.45			
Selenium	7782-49-2	0.280	1.64	0.408	0.280	1.64	0.408	0.280	1.64	0.408			
Silver	7440-22-4	0.0264	0.120	0.0351	0.0264	0.120	0.0351	0.0264	0.120	0.0351			
Tin	7440-31-5	0.0898	0.409	0.120	0.0898	0.409	0.120	0.0898	0.409	0.120	0.107	0.335	0.165
Titanium	7440-32-6	0.0217	0.0510	0.0299	0.0217	0.0510	0.0299	0.0569	0.0947	0.0618	0.0217	0.0510	0.0299
Vanadium	7440-62-2	0.0500	0.218	0.0662	0.0500	0.218	0.0662	0.0500	0.218	0.0662			
Zinc	7440-66-6	0.382	0.497	0.420	0.413	2.87	0.641	0.382	0.497	0.420	0.382	0.497	0.420
ORGANIC ANALYTES													
Acetone	67-64-1	2.06	30.2	7.97				2.06	30.2	7.97	2.06	30.2	7.97
Acetophenone	98-86-2	0.0359	0.114	0.0562				0.0359	0.114	0.0562	0.0359	0.114	0.0562
Aniline	62-53-3	0.0105	0.0333	0.0164				0.0105	0.0333	0.0164	0.0105	0.0333	0.0164
Bis(2-ethylhexyl) phthalate	117-81-7	0.0629	0.215	0.101	0.0629	0.215	0.101				0.0629	0.215	0.101
Butanone	78-93-3	0.878	4.81	1.85				0.878	4.81	1.85	0.878	4.81	1.85
Butylbenzyl phthalate	85-68-7	0.0550	0.188	0.0887	0.0550	0.188	0.0887				0.0550	0.188	0.0887
Carbazole	86-74-8	0.151	0.598	0.276	0.151	0.598	0.276				0.151	0.598	0.276
o-Cresol	95-48-7	0.185	1.92	0.561				0.185	1.92	0.561	0.185	1.92	0.561

Pollutant Parameters	CAS Registry Number	Metals, Oils, Organics (A, B, & C)			Metals, Oils (A & B)			Metals, Organics (A & C)			Oils, Organics (B & C)		
		Long-Term Average Design Targets	Daily Maximum	Monthly Average Maximum	Long-Term Average Design Targets	Daily Maximum	Monthly Average Maximum	Long-Term Average Design Targets	Daily Maximum	Monthly Average Maximum	Long-Term Average Design Targets	Daily Maximum	Monthly Average Maximum
p-Cresol	106-44-5	0.0682	0.698	0.205				0.0682	0.698	0.205	0.0682	0.698	0.205
n-Decane	124-18-5	0.238	0.948	0.437	0.238	0.948	0.437				0.238	0.948	0.437
2,3-Dichloroaniline	608-27-5	0.0230	0.0731	0.0361				0.0230	0.0731	0.0361	0.0230	0.0731	0.0361
Fluoranthene	206-44-0	0.0173	0.0537	0.0268	0.0173	0.0537	0.0268				0.0173	0.0537	0.0268
n-Octadecane	593-45-3	0.203	0.589	0.302	0.203	0.589	0.302				0.203	0.589	0.302
Phenol	108-95-2	0.362	3.65	1.08				0.362	3.65	1.08	0.362	3.65	1.08
Pyridine	110-86-1	0.116	0.370	0.182				0.116	0.370	0.182	0.116	0.370	0.182
2,4,6-Trichlorophenol	88-06-2	0.0858	0.155	0.106				0.0858	0.155	0.106	0.0858	0.155	0.106

* – The promulgated performance bounds for pH are 6-9 in standard units.

Table Executive Summary-3. CWT design targets and NSPS standards by subcategory (mg/L)

Pollutant Parameters	CAS Registry Number	Metals - Subcategory A			Oils - Subcategory B			Organics - Subcategory C		
		Long-Term Average Design Targets	Standards Daily Maximum	Standards Monthly Average Maximum	Long-Term Average Design Targets	Standards Daily Maximum	Standards Monthly Average Maximum	Long-Term Average Design Targets	Standards Daily Maximum	Standards Monthly Average Maximum
CONVENTIONAL PARAMETERS*										
BOD ₅	C-003							41.0	163.	53.0
Oil & Grease	C-007	34.3	205.	50.2	28.3	127.	38.0			
TSS	C-009	9.25	29.6	11.3	25.5	74.1	30.6	45.0	216.	61.3
METAL ANALYTES										
Antimony	7440-36-0	0.0213	0.111	0.0312	0.103	0.237	0.141	0.569	0.928	0.679
Arsenic	7440-38-2	0.0112	0.0993	0.0199	0.789	2.95	1.33			
Barium	7440-39-3				0.221	0.427	0.281			
Cadium	7440-43-9	0.0819	0.782	0.163	0.00746	0.0172	0.0102			
Chromium	7440-47-3	0.0398	0.167	0.0522	0.183	0.746	0.323			
Cobalt	7440-48-4	0.0574	0.182	0.0703	7.42	56.4	18.8			
Copper	7440-50-8	0.169	0.659	0.216	0.157	0.500	0.242	0.704	0.865	0.757
Cyanide (in-plant)		136	500	178						
Lead	7439-92-1	0.177	1.32	0.283	0.0986	0.350	0.160			
Mercury	7439-97-6	0.000201	0.000641	0.000246	0.00309	0.0172	0.00647			
Molybdenum	7439-98-7				1.54	3.50	2.09	0.943	1.01	0.965
Nickel	7440-02-0	0.255	0.794	0.309						
Selenium	7782-49-2	0.0563	0.176	0.0698						
Silver	7440-22-4	0.0100	0.0318	0.0122						
Tin	7440-31-5	0.0300	0.0955	0.0367	0.107	0.335	0.165			
Titanium	7440-32-6	0.00500	0.0159	0.00612	0.0217	0.0510	0.0299			
Vanadium	7440-62-2	0.0500	0.0628	0.0518						
Zinc	7440-66-6	0.206	0.657	0.252	3.14	8.26	4.50	0.382	0.497	0.420
ORGANIC ANALYTES										
Acetone	67-64-1							2.06	30.2	7.97
Acetophenone	98-86-2							0.0359	0.114	0.0562
Aniline	62-53-3							0.0105	0.0333	0.0164
Bis(2-ethylhexyl) phthalate	117-81-7				0.0629	0.215	0.101			
Butanone	78-93-3							0.878	4.81	1.85
Butylbenzyl phthalate	85-68-7				0.0550	0.188	0.0887			

Pollutant Parameters	CAS Registry Number	Metals - Subcategory A			Oils - Subcategory B			Organics - Subcategory C		
		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards	
			Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum
Carbazole	86-74-8				0.151	0.598	0.276			
o-Cresol	95-48-7							0.185	1.92	0.561
p-Cresol	106-44-5							0.0682	0.698	0.205
n-Decane	124-18-5				0.238	0.948	0.437			
2,3-Dichloroaniline	608-27-5							0.0230	0.0731	0.0361
Fluoranthene	206-44-0				0.0173	0.0537	0.0268			
n-Octadecane	593-45-3				0.203	0.589	0.302			
Phenol	108-95-2							0.362	3.65	1.08
Pyridine	110-86-1							0.116	0.370	0.182
2,4,6-Trichlorophenol	88-06-2							0.0858	0.155	0.106

* – The promulgated performance bounds for pH are 6-9 in standard units.

Table Executive Summary-4. CWT design targets and NSPS standards for Subcategory D mixed wastestream combinations (mg/L)

Pollutant Parameters	CAS Registry Number	Metals, Oils, Organics (A, B, & C)			Metals, Oils (A & B)			Metals, Organics (A & C)			Oils, Organics (B & C)		
		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards	
			Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum
CONVENTIONALS PARAMETERS*													
BOD ₅	C-003	41.0	163.	53.0				41.0	163.	53.0	41.0	163.	53.0
Oil & Grease	C-007	28.3	127.	38.0	28.3	127.	38.0	34.3	205.	50.2	28.3	127.	38.0
TSS	C-009	9.25	29.6	11.3	9.25	29.6	11.3	9.25	29.6	11.3	25.5	74.1	30.6
METAL ANALYTES													
Antimony	7440-36-0	0.0213	0.111	0.0312	0.0213	0.111	0.0312	0.0213	0.111	0.0312	0.103	0.237	0.141
Arsenic	7440-38-2	0.0112	0.0993	0.0199	0.0112	0.0993	0.0199	0.0112	0.0993	0.0199	0.789	2.95	1.33
Barium	7440-39-3	0.221	0.427	0.281	0.221	0.427	0.281				0.221	0.427	0.281
Cadium	7440-43-9	0.00746	0.0172	0.0102	0.00746	0.0172	0.0102	0.0819	0.782	0.163	0.00746	0.0172	0.0102
Chromium	7440-47-3	0.0398	0.167	0.0522	0.0398	0.167	0.0522	0.0398	0.167	0.0522	0.183	0.746	0.323
Cobalt	7440-48-4	0.0574	0.182	0.0703	0.0574	0.182	0.0703	0.0574	0.182	0.0703	7.42	56.4	18.8
Copper	7440-50-8	0.169	0.659	0.216	0.169	0.659	0.216	0.169	0.659	0.216	0.157	0.500	0.242
Cyanide (in-plant)		136	500	178		500	178		500	178			
Lead	7439-92-1	0.0986	0.350	0.160	0.0986	0.350	0.160	0.177	1.32	0.283	0.0986	0.350	0.160
Mercury	7439-97-6	0.000201	0.000641	0.000246	0.000201	0.000641	0.000246	0.000201	0.000641	0.000246	0.00309	0.0172	0.00647
Molybdenum	7439-98-7	0.943	1.01	0.965	1.54	3.50	2.09	0.943	1.01	0.965	0.943	1.01	0.965
Nickel	7440-02-0	0.255	0.794	0.309	0.255	0.794	0.309	0.255	0.794	0.309			
Selenium	7782-49-2	0.0563	0.176	0.0698	0.0563	0.176	0.0698	0.0563	0.176	0.0698			
Silver	7440-22-4	0.0100	0.0318	0.0122	0.0100	0.0318	0.0122	0.0100	0.0318	0.0122			
Tin	7440-31-5	0.0300	0.0955	0.0367	0.0300	0.0955	0.0367	0.0300	0.0955	0.0367	0.107	0.335	0.165
Titanium	7440-32-6	0.00500	0.0159	0.00612	0.00500	0.0159	0.00612	0.00500	0.0159	0.00612	0.0217	0.0510	0.0299
Vanadium	7440-62-2	0.0500	0.0628	0.0518	0.0500	0.0628	0.0518	0.0500	0.0628	0.0518			
Zinc	7440-66-6	0.206	0.657	0.252	0.206	0.657	0.252	0.206	0.657	0.252	0.382	0.497	0.420
ORGANIC ANALYTES													
Acetone	67-64-1	2.06	30.2	7.97				2.06	30.2	7.97	2.06	30.2	7.97
Acetophenone	98-86-2	0.0359	0.114	0.0562				0.0359	0.114	0.0562	0.0359	0.114	0.0562
Aniline	62-53-3	0.0105	0.0333	0.0164				0.0105	0.0333	0.0164	0.0105	0.0333	0.0164
Bis(2-ethylhexyl) phthalate	117-81-7	0.0629	0.215	0.101	0.0629	0.215	0.101				0.0629	0.215	0.101
Butanone	78-93-3	0.878	4.81	1.85				0.878	4.81	1.85	0.878	4.81	1.85

Pollutant Parameters	CAS Registry Number	Metals, Oils, Organics (A, B, & C)			Metals, Oils (A & B)			Metals, Organics (A & C)			Oils, Organics (B & C)		
		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards	
			Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum
Butylbenzyl phthalate	85-68-7	0.0550	0.188	0.0887	0.0550	0.188	0.0887				0.0550	0.188	0.0887
Carbazole	86-74-8	0.151	0.598	0.276	0.151	0.598	0.276				0.151	0.598	0.276
o-Cresol	95-48-7	0.185	1.92	0.561				0.185	1.92	0.561	0.185	1.92	0.561
p-Cresol	106-44-5	0.0682	0.698	0.205				0.0682	0.698	0.205	0.0682	0.698	0.205
n-Decane	124-18-5	0.238	0.948	0.437	0.238	0.948	0.437				0.238	0.948	0.437
2,3-Dichloroaniline	608-27-5	0.0230	0.0731	0.0361				0.0230	0.0731	0.0361	0.0230	0.0731	0.0361
Fluoranthene	206-44-0	0.0173	0.0537	0.0268	0.0173	0.0537	0.0268				0.0173	0.0537	0.0268
n-Octadecane	593-45-3	0.203	0.589	0.302	0.203	0.589	0.302				0.203	0.589	0.302
Phenol	108-95-2	0.362	3.65	1.08				0.362	3.65	1.08	0.362	3.65	1.08
Pyridine	110-86-1	0.116	0.370	0.182				0.116	0.370	0.182	0.116	0.370	0.182
2,4,6-Trichlorophenol	88-06-2	0.0858	0.155	0.106				0.0858	0.155	0.106	0.0858	0.155	0.106

* – The promulgated performance bounds for pH are 6-9 in standard units.

Table Executive Summary-5. CWT design targets and PSES standards by subcategory (mg/L)

Pollutant Parameters	CAS Registry Number	Metals - Subcategory A			Oils - Subcategory B			Organics - Subcategory C		
		Long-Term Average Design Targets	Standards Daily Maximum	Standards Monthly Average Maximum	Long-Term Average Design Targets	Standards Daily Maximum	Standards Monthly Average Maximum	Long-Term Average Design Targets	Standards Daily Maximum	Standards Monthly Average Maximum
METAL ANALYTES										
Antimony	7440-36-0	0.170	0.249	0.206	0.103	0.237	0.141			
Arsenic	7440-38-2	0.0839	0.162	0.104						
Barium	7440-39-3				0.221	0.427	0.281			
Cadium	7440-43-9	0.0580	0.474	0.0962						
Chromium	7440-47-3	1.67	15.5	3.07	0.323	0.947	0.487			
Cobalt	7440-48-4	0.115	0.192	0.124	7.42	56.4	18.8			
Copper	7440-50-8	0.744	4.14	1.06	0.257	0.405	0.301			
Cyanide (in-plant)		136	500	178						
Lead	7439-92-1	0.177	1.32	0.283	0.149	0.222	0.172			
Mercury	7439-97-6	0.000560	0.00234	0.000739						
Molybdenum	7439-98-7				1.54	3.50	2.09	0.943	1.01	0.965
Nickel	7440-02-0	1.16	3.95	1.45						
Selenium	7782-49-2	0.280	1.64	0.408						
Silver	7440-22-4	0.0264	0.120	0.0351						
Tin	7440-31-5	0.0898	0.409	0.120	0.107	0.249	0.146			
Titanium	7440-32-6	0.0569	0.0947	0.0618						
Vanadium	7440-62-2	0.0500	0.218	0.0662						
Zinc	7440-66-6	0.413	2.87	0.641	3.45	6.95	4.46			
ORGANIC ANALYTES										
Bis(2-ethylhexyl) phthalate	117-81-7				0.116	0.267	0.158			
Carbazole	86-74-8				0.151	0.392	0.233			
o-Cresol	95-48-7							0.185	1.92	0.561
p-Cresol	106-44-5							0.0682	0.698	0.205
n-Decane	124-18-5				2.37	5.79	3.31			
2,3-Dichloroaniline	608-27-5							0.0230	0.0731	0.0361
Fluoranthene	206-44-0				0.253	0.787	0.393			

Pollutant Parameters	CAS Registry Number	Metals - Subcategory A			Oils - Subcategory B			Organics - Subcategory C		
		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards	
			Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum
n-Octadecane	593-45-3				0.793	1.22	0.925			
2,4,6-Trichlorophenol	88-06-2							0.0858	0.155	0.106

Table Executive Summary-6. CWT design targets and PSES standards for Subcategory D mixed wastestream combinations (mg/L)

Pollutant Parameters	CAS Registry Number	Metals, Oils, Organics (A, B, & C)			Metals, Oils (A & B)			Metals, Organics (A & C)			Oils, Organics (B & C)		
		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards	
			Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum
METAL ANALYTES													
Antimony	7440-36-0	0.103	0.237	0.141	0.103	0.237	0.141	0.170	0.249	0.206	0.103	0.237	0.141
Arsenic	7440-38-2	0.0839	0.162	0.104	0.0839	0.162	0.104	0.0839	0.162	0.104			
Barium	7440-39-3	0.221	0.427	0.281	0.221	0.427	0.281				0.221	0.427	0.281
Cadium	7440-43-9	0.0580	0.474	0.0962	0.0580	0.474	0.0962	0.0580	0.474	0.0962			
Chromium	7440-47-3	0.323	0.947	0.487	0.323	0.947	0.487	1.67	15.5	3.07	0.323	0.947	0.487
Cobalt	7440-48-4	0.115	0.192	0.124	0.115	0.192	0.124	0.115	0.192	0.124	7.42	56.4	18.8
Copper	7440-50-8	0.257	0.405	0.301	0.257	0.405	0.301	0.744	4.14	1.06	0.257	0.405	0.301
Cyanide (in-plant)		136	500	178	136	500	178	136	500	178			
Lead	7439-92-1	0.149	0.222	0.172	0.149	0.222	0.172	0.177	1.32	0.283	0.149	0.222	0.172
Mercury	7439-97-6	0.000560	0.00234	0.000739	0.000560	0.00234	0.000739	0.000560	0.00234	0.000739			
Molybdenum	7439-98-7	0.943	1.01	0.965	1.54	3.50	2.09	0.943	1.01	0.965	0.943	1.01	0.965
Nickel	7440-02-0	1.16	3.95	1.45	1.16	3.95	1.45	1.16	3.95	1.45			
Selenium	7782-49-2	0.280	1.64	0.408	0.280	1.64	0.408	0.280	1.64	0.408			
Silver	7440-22-4	0.0264	0.120	0.0351	0.0264	0.120	0.0351	0.0264	0.120	0.0351			
Tin	7440-31-5	0.0898	0.409	0.120	0.0898	0.409	0.120	0.0898	0.409	0.120	0.107	0.249	0.146
Titanium	7440-32-6	0.0569	0.0947	0.0618	0.0569	0.0947	0.0618	0.0569	0.0947	0.0618			
Vanadium	7440-62-2	0.0500	0.218	0.0662	0.0500	0.218	0.0662	0.0500	0.218	0.0662			
Zinc	7440-66-6	0.413	2.87	0.641	0.413	2.87	0.641	0.413	2.87	0.641	3.45	6.95	4.46
ORGANIC ANALYTES													
Bis(2-ethylhexyl)phthalate	117-81-7	0.116	0.267	0.158	0.116	0.267	0.158				0.116	0.267	0.158
Carbazole	86-74-8	0.151	0.392	0.233	0.151	0.392	0.233				0.151	0.392	0.233
o-Cresol	95-48-7	0.185	1.92	0.561				0.185	1.92	0.561	0.185	1.92	0.561
p-Cresol	106-44-5	0.0682	0.698	0.205				0.0682	0.698	0.205	0.0682	0.698	0.205
n-Decane	124-18-5	2.37	5.79	3.31	2.37	5.79	3.31				2.37	5.79	3.31
2,3-Dichloroaniline	608-27-5	0.0230	0.0731	0.0361				0.0230	0.0731	0.0361	0.0230	0.0731	0.0361

Pollutant Parameters	CAS Registry Number	Metals, Oils, Organics (A, B, & C)			Metals, Oils (A & B)			Metals, Organics (A & C)			Oils, Organics (B & C)		
		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards	
			Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum
Fluoranthene	206-44-0	0.253	0.787	0.393	0.253	0.787	0.393				0.253	0.787	0.393
n-Octadecane	593-45-3	0.793	1.22	0.925	0.793	1.22	0.925				0.793	1.22	0.925
2,4,6-Trichlorophenol	88-06-2	0.0858	0.155	0.106				0.0858	0.155	0.106	0.0858	0.155	0.106

Table Executive Summary-7. CWT design targets and PSNS standards by subcategory (mg/L)

Pollutant Parameters	CAS Registry Number	Metals - Subcategory A			Oils - Subcategory B			Organics - Subcategory C		
		Long-Term Average Design Targets	Daily Maximum	Monthly Average Maximum	Long-Term Average Design Targets	Daily Maximum	Monthly Average Maximum	Long-Term Average Design Targets	Daily Maximum	Monthly Average Maximum
<u>METAL ANALYTES</u>										
Antimony	7440-36-0	0.170	0.249	0.206	0.103	0.237	0.141			
Arsenic	7440-38-2	0.0839	0.162	0.104						
Barium	7440-39-3				0.221	0.427	0.281			
Cadium	7440-43-9	0.0580	0.474	0.0962						
Chromium	7440-47-3	1.67	15.5	3.07	0.183	0.746	0.323			
Cobalt	7440-48-4	0.115	0.192	0.124	7.42	56.4	18.8			
Copper	7440-50-8	0.744	4.14	1.06	0.157	0.500	0.242			
Cyanide (in-plant)		136	500	178						
Lead	7439-92-1	0.177	1.32	0.283	0.0986	0.350	0.160			
Mercury	7439-97-6	0.000560	0.00234	0.000739						
Molybdenum	7439-98-7				1.54	3.50	2.09	0.943	1.01	0.965
Nickel	7440-02-0	1.16	3.95	1.45						
Selenium	7782-49-2	0.280	1.64	0.408						
Silver	7440-22-4	0.0264	0.120	0.0351						
Tin	7440-31-5	0.0898	0.409	0.120	0.107	0.335	0.165			
Titanium	7440-32-6	0.0569	0.0947	0.0618						
Vanadium	7440-62-2	0.0500	0.218	0.0662						
Zinc	7440-66-6	0.413	2.87	0.641	3.14	8.26	4.50			
<u>ORGANIC ANALYTES</u>										
Bis(2-ethylhexyl)phthalate	117-81-7				0.0629	0.215	0.101			
Carbazole	86-74-8				0.151	0.598	0.276			
o-Cresol	95-48-7							0.185	1.92	0.561
p-Cresol	106-44-5							0.0682	0.698	0.205
n-Decane	124-18-5				0.238	0.948	0.437			
2,3-Dichloroaniline	608-27-5							0.0230	0.0731	0.0361

Pollutant Parameters	CAS Registry Number	Metals - Subcategory A			Oils - Subcategory B			Organics - Subcategory C		
		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards	
			Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum
Fluoranthene	206-44-0				0.0173	0.0537	0.0268			
n-Octadecane	593-45-3				0.203	0.589	0.302			
2,4,6-Trichlorophenol	88-06-2							0.0858	0.155	0.106

Table Executive Summary-8. CWT design targets and PSNS standards for Subcategory D mixed wastestream combinations (mg/L)

Pollutant Parameters	CAS Registry Number	Metals, Oils, Organics (A, B, & C)			Metals, Oils (A & B)			Metals, Organics (A & C)			Oils, Organics (B & C)		
		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards	
			Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum
<u>METAL ANALYTES</u>													
Antimony	7440-36-0	0.103	0.237	0.141	0.103	0.237	0.141	0.170	0.249	0.206	0.103	0.237	0.141
Arsenic	7440-38-2	0.0839	0.162	0.104	0.0839	0.162	0.104	0.0839	0.162	0.104			
Barium	7440-39-3	0.221	0.427	0.281	0.221	0.427	0.281				0.221	0.427	0.281
Cadium	7440-43-9	0.0580	0.474	0.0962	0.0580	0.474	0.0962	0.0580	0.474	0.0962			
Chromium	7440-47-3	0.183	0.746	0.323	0.183	0.746	0.323	1.67	15.5	3.07	0.183	0.746	0.323
Cobalt	7440-48-4	0.115	0.192	0.124	0.115	0.192	0.124	0.115	0.192	0.124	7.42	56.4	18.8
Copper	7440-50-8	0.157	0.500	0.242	0.157	0.500	0.242	0.744	4.14	1.06	0.157	0.500	0.242
Cyanide (in-plant)		136	500	178	136	500	178	136	500	178			
Lead	7439-92-1	0.0986	0.350	0.160	0.0986	0.350	0.160	0.177	1.32	0.283	0.0986	0.350	0.160
Mercury	7439-97-6	0.000560	0.00234	0.000739	0.000560	0.00234	0.000739	0.000560	0.00234	0.000739			
Molybdenum	7439-98-7	0.943	1.01	0.965	1.54	3.50	2.09	0.943	1.01	0.965	0.943	1.01	0.965
Nickel	7440-02-0	1.16	3.95	1.45	1.16	3.95	1.45	1.16	3.95	1.45			
Selenium	7782-49-2	0.280	1.64	0.408	0.280	1.64	0.408	0.280	1.64	0.408			
Silver	7440-22-4	0.0264	0.120	0.0351	0.0264	0.120	0.0351	0.0264	0.120	0.0351			
Tin	7440-31-5	0.0898	0.409	0.120	0.0898	0.409	0.120	0.0898	0.409	0.120	0.107	0.335	0.165
Titanium	7440-32-6	0.0569	0.0947	0.0618	0.0569	0.0947	0.0618	0.0569	0.0947	0.0618			
Vanadium	7440-62-2	0.0500	0.218	0.0662	0.0500	0.218	0.0662	0.0500	0.218	0.0662			
Zinc	7440-66-6	0.413	2.87	0.641	0.413	2.87	0.641	0.413	2.87	0.641	3.14	8.26	4.50
<u>ORGANIC ANALYTES</u>													
Bis(2-ethylhexyl)phthalate	117-81-7	0.0629	0.215	0.101	0.0629	0.215	0.101				0.0629	0.215	0.101
Carbazole	86-74-8	0.151	0.598	0.276	0.151	0.598	0.276				0.151	0.598	0.276
o-Cresol	95-48-7	0.185	1.92	0.561				0.185	1.92	0.561	0.185	1.92	0.561
p-Cresol	106-44-5	0.0682	0.698	0.205				0.0682	0.698	0.205	0.0682	0.698	0.205
n-Decane	124-18-5	0.238	0.948	0.437	0.238	0.948	0.437				0.238	0.948	0.437
2,3-Dichloroaniline	608-27-5	0.0230	0.0731	0.0361				0.0230	0.0731	0.0361	0.0230	0.0731	0.0361

Pollutant Parameters	CAS Registry Number	Metals, Oils, Organics (A, B, & C)			Metals, Oils (A & B)			Metals, Organics (A & C)			Oils, Organics (B & C)		
		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards		Long-Term Average Design Targets	Standards	
			Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum		Daily Maximum	Monthly Average Maximum
Fluoranthene	206-44-0	0.0173	0.0537	0.0268	0.0173	0.0537	0.0268				0.0173	0.0537	0.0268
n-Octadecane	593-45-3	0.203	0.589	0.302	0.203	0.589	0.302				0.203	0.589	0.302
2,4,6-Trichlorophenol	88-06-2	0.0858	0.155	0.106				0.0858	0.155	0.106	0.0858	0.155	0.106