FACT SHEET

NPDES PERMIT RE-ISSUANCE
PUBLIC NOTICED: MAY 2019

APPLICANT	***SUMMIT CORPORATION OF AMERICA***
NPDES PERMIT NO.	*CT0001180 (existing term: December 21, 2007 to December 20, 2012)*
NPDES APPLICATION NO.	*201205290*
DATE APPLICATION RECEIVED	*June 19, 2012*
FACILITY IDENTIFICATION	*140-011*
LOCATION ADDRESS	*1430 Waterbury Road* *Thomaston, Connecticut 06787*
FACILITY CONTACT	*Mark Conti, Plant Manager* *Office: (860) 283-4391 ext. 273* *FAX: (860) 283-4010* *mconti@Summitct.com*
MAILING ADDRESS	*1430 Waterbury Road* *Thomaston, Connecticut 06787*
DMR CONTACT	*Mark Conti*
SECRETARY OF STATE BUSINESS ID	*0096727*
PERMIT TERM	*5 years*
PERMIT CATEGORY	*NPDES:* ☒ *Major* ☐ *Discretionary Major* ☐ *Minor* *[Score: 80, August 2018]*
STANDARD INDUSTIAL CLASSIFICATION (SIC)	*3471 (Electroplating, Plating, Polishing, Anodizing, and Coloring)*
APPLICABLE EFFLUENT GUIDELINE(S)	*40 CFR 433 (Metal Finishing Point Source Category)*
PERMIT TYPE	*Reissuance*
OWNERSHIP	☐ *Federal* ☐ *State* ☒ *Private* ☐ *Public* ☐ *Other:*_____
RECEIVING WATER	*Naugatuck River*
WATERBODY SEGMENT ID	*CT6900-00_05*
SURFACE WATERBODY CLASSIFICATION	*B*
SURFACE WATER DISCHARGE LOCATION	*DSN 001-1: Latitude (41° 37' 38.38") Longitude (73° 04' 10.53")*
DEEP STAFF ENGINEER	*Christine Gleason (860/424-3278)* *christine.gleason@ct.gov*

I. FEES

Application Fees (RCSA 22a-430-6):

Application Filing Fee: *$1,300. Paid on October 2, 2012*
Application Processing Fee*: $13,650 (Invoice 212894). Paid on January 18, 2013.*

Annual Permit Fee (RCSA 22a-430-7):

DISCHARGE CODE	WASTEWATER CATEGORY (per 22a-430-7)	MAXIMUM GPD	DSNs	ANNUAL FEE (per 22a-430-7)
101035Z	***Metal Finishing (except to POTWs)*** *(Metal finishing wastewaters; Laboratory Wastewater; Drum rinsing wastewater; Tumbling wastewater; Floor wash water/Building maintenance wastewater; Air scrubber wastewater)*	*>50,000 gpd*	*001-1*	*$8,425*
1170000	***Blowdown from Heating and Cooling*** *(Boiler Blowdown)*	---	*001-1*	*4,337.50*
1090000	***Groundwater Contamination Recovery*** *(On-site remediation groundwater)*	---	*001-1*	*4,337.50*
---	***Air Compressor Blowdown Condensate/ Fire Suppression Test Water***	---	*001-1*	*0*
TOTAL				**$17,100.00**

II. APPLICATION

On June 19, 2012, the Department of Energy and Environmental Protection ("Department") received an application (Application 201205290) from Summit Corporation of America ("Summit", "Permittee", "Applicant") in Thomaston for the renewal of its NPDES permit, CT0001180 expiring on December 20, 2012. Consistent with the requirements of section 22a-6g of the Connecticut General Statutes (CGS), the applicant caused a Notice of Permit Application to be published in the *Republican-American* on June 19, 2012. On August 7, 2012, the application was determined to be timely and administratively sufficient.

The permittee seeks authorization for the following in Application 201205290:

	DSN	PROPOSED AVERAGE MONTHLY FLOW (gpd)	PROPOSED MAXIMUM DAILY FLOW (gpd)	PROPOSED WASTESTREAMS	TREATMENT TYPE	DISCHARGE POINT
FINAL DISCHARGE POINT	001-1	330,000	400,000	*Metal Finishing Wastewaters; Laboratory Wastewater; Water Treatment Wastewater; Air Scrubber Wastewater; Floor Wash Water/Building Maintenance Wastewater; Tumbling Wastewater; On-Site Groundwater Remediation Wastewater; Drum Rinsing Wastewater; Reverse Osmosis Reject and Backwash Water; Boiler Blowdown; Air Compressor Blowdown/Condensate; Fire Suppression Test Water*	Metals Recovery; Equalization; Precipitation; Flocculation; Clarification; Neutralization	Naugatuck River
INTERIM	001A-1	---	---	*Treated cyanide-bearing wastewaters*	Cyanide Destruction	DSN 001-1

	DSN	PROPOSED AVERAGE MONTHLY FLOW (gpd)	PROPOSED MAXIMUM DAILY FLOW (gpd)	PROPOSED WASTESTREAMS	TREATMENT TYPE	DISCHARGE POINT
	001B-1	---	---	*Treated hexavalent chromium-bearing wastewaters*	*Proposed treatment:* Hexavalent chromium reduction	DSN 001-1

Summit is a metal finishing job shop. The primary wastewater generating activity continues to be the treatment of metal finishing wastewaters at the site. The permittee is requesting authorization to discharge a new wastestream, treated groundwater generated from on-site remediation activities. During this permit term, the permittee has made a number of modifications to its facility in order to address compliance schedules in its existing permit.

III. STATUS OF SPECIAL CONDITIONS/COMPLIANCE SCHEDULES IN THE EXISTING PERMIT

Summit's existing NPDES permit includes three special conditions/compliance schedules that require it to: 1) improve stormwater quality by June 24, 2007; 2) comply with total nitrogen limits for DSN 001-1 by August 1, 2009; 3) comply with limits for: total residual chlorine, total copper, total lead, total nickel, total zinc, and acute aquatic toxicity for DSN 001-1 by July 1, 2011. A summary of the status of these special conditions/compliance schedules is as follows:

- **Compliance Schedule/Special Condition #1**: Summit has three stormwater discharges (DSN 002, DSN 003 and DSN 004) that are directed into the Naugatuck River. [See Attachment 1]. These discharges are covered under the *General Permit for the Discharge of Stormwater Associated with Industrial Activity*, ("general permit") registered as GSI000406. Historically, DSN 003 and DSN 004, have not consistently complied with the benchmarks in the general permit (i.e., there have been elevated levels of copper in the stormwater and there have been toxicity failures associated with the stormwater). Because of these issues, a compliance schedule (i.e., Section 10(B)) was incorporated into the permit requiring Summit to address stormwater quality. Section 10(B) requires Summit to submit a report, for the review and written approval of the Commissioner, that evaluates the effectiveness of certain remedial actions that have been taken to improve the quality of the stormwater so that the benchmarks identified in the general permit can be consistently met. This paragraph also requires an evaluation of the need for supplemental remedial measures to further improve site stormwater quality.

  On June 30, 2008, Summit submitted a report (*Stormwater Remedial Action Assessment Report*) prepared by Facility Support Services in response to the requirements of Section 10(B). This report summarized the remedial actions that had been performed at the site between 2000 and 2002, including: conducting annual inspections of the Building 6 roof to identify sources of copper exposure; painting exposed copper sources at the facility; cleaning and removing copper deposits on the Building 6 roof; and relocating the scrap metal storage area to an inside location. The report also proposed additional projects designed to improve stormwater quality (e.g., routinely cleaning residues off of the north side of the rectifier building; removing some old processing tanks; replacing and painting the corrugated metal roof of the Warehouse Building; installing exhaust scrubbers for the process fumes from Building 6). On August 20, 2010, a supplemental report (*Supplemental Stormwater Report*) was provided to the Department describing the ongoing efforts to improve stormwater quality. This report indicated that existing practices were continuing to be implemented concerning the improvements to stormwater quality (i.e., conducting annual inspections of the roof area to ensure that all copper-containing materials are painted over; conducting monthly inspections of the roof area to ensure that any copper deposits/residues from the process vents are cleaned up). This report also proposed to conduct sediment removal from the paved areas and the catch basins.

The following is a summary of the stormwater monitoring results for DSN 003, DSN 004, Catch Basin 6 and Catch Basin 8:

PARAMETER	UNITS	LIMITS (1994-Sept 2011)	DSN-003							
			Nov 2004	Sept 2005	Sept 2006	Sept 2007	Sept 2008	Oct 2009	Oct 2010	Aug 2011
Oil & Grease	mg/L	5	7.2	<1.0	0.57	2.0	<1.0	<1.0	4.0	<1.0
pH	SU	---	6.36	6	4.21	4.49	6.17	6.39	6.70	6.17
COD	mg/L	75	85	117	54	18.7	63.8	66.3	44.4	11.3
TSS	mg/L	100	10	51	21	60	13.0	7.0	ND	12.0
Phosphorus, T	mg/L	0.5	<0.2	0.016	<0.20	0.24	0.43	0.32	0.11	0.09
TKN	mg/L	2.5	3.2	11	9.8	2.4	0.86	1.81	1.77	1.16
NO_3-N	mg/L	1.5	1.4	2.1	0.67	0.30	0.75	0.87	1.17	0.5
Total Copper	mg/L	0.100	0.16	0.366	0.28	0.052	0.209	0.126	0.225	0.141
Total Zinc	mg/L	0.500	0.13	0.574	0.32	0.069	0.217	0.241	0.389	0.167
Total Lead	mg/L	0.050	<0.002	<0.030	0.056	0.022	0.010	0.015	0.025	0.012
48-Hour LC_{50}	%	50	28.7	<6.25	<6.25	82	<6.25	77.1	85.2	<6.25
Cadmium	mg/L	---	<0.005		0.001					
Chromium, Hex	mg/L	---	<0.03		<0.03					
Silver	mg/L	---	0.04		0.013					
Surfactants	mg/L	---	0.11		0.55					

PARAMETER	UNITS	LIMITS (1994-Sept 2011)	DSN-004							
			Nov 2004	Sept 2005	Sept 2006	Sept 2007	Sept 2008	Oct 2009	Oct 2010	Aug2011
Oil & Grease	mg/L	5	0.86	4.2	2.4	1.6	<1.4	x	x	x
pH	SU	---	6.53	6.1	5.48	5.61	6.58	x	x	x
COD	mg/L	75	38	116	82	32.1	18	x	x	x
TSS	mg/L	100	290	73	38	100	<5.0	x	x	x
Phosphorus, T	mg/L	0.5	<0.2	0.15	<0.20	0.58	<0.20	x	x	x
TKN	mg/L	2.5	2.4	2.72	8.1	2.6	0.11	x	x	x
NO_3-N	mg/L	1.5	1.2	0.1	0.53	0.30	0.86	x	x	x
Total Copper	mg/L	0.100	0.37	0.274	0.20	0.077	0.019	x	x	x
Total Zinc	mg/L	0.500	0.47	0.385	0.21	0.077	0.100	x	x	x
Total Lead	mg/L	0.050	0.069	<0.030	0.018	0.040	<0.001	x	x	x
48-Hour LC_{50}	%	50	12.7	6.25	7.0	18.3	35.4	x	x	x
Cadmium	mg/L		<0.005		<0.001			x	x	x
Chromium, Hex	mg/L		<0.03		<0.03			x	x	x
Silver	mg/L		0.052		0.016			x	x	x
Surfactants	mg/L		0.21		0.56			x	x	x

NOTE: DSN-004 includes contributions from Catch Basin 6 (CB-6), Catch Basin 7 (CB-7), and Catch Basin 8 (CB-8). Because CB-7 includes stormwater contributions from an off-site facility, SUMMIT was allowed to conduct monitoring at CB-6 and CB-8 in lieu of continuing monitoring at DSN-004.

PARAMETER	UNITS	LIMITS (1994-Sept 2011)	CB-6	CB-8	CB-6	CB-8	CB-6	CB-8	CB-6	CB-8	CB-6	CB-8
			July 2007		Sept 2008		Oct 2009		Oct 2010		Aug 2011	
Oil & Grease	mg/L	5			1.6	2.4	2.0	1.6	15.2	13.6	<1.0	<1.0
pH	SU	---			4.29	6.38	6.51	7.16	6.86	6.64	6.51	5.57
COD	mg/L	75			59.0	32.1	73.8	44.4	102.4	66.3	22.2	25.6
TSS	mg/L	100			18.0	51.0	151	122	39.0	98.0	70.0	95.0
Phosphorus, T	mg/L	0.5			0.10	0.17	0.16	0.16	0.55	0.15	0.12	0.11
TKN	mg/L	2.5			0.50	4.2	1.04	1.49	7.45	0.61	0.74	0.45
NO_3-N	mg/L	1.5			0.42	0.56	0.89	0.42	0.91	0.76	0.38	0.70
Total Copper	mg/L	0.100	0.17	0.13	0.323	0.058	0.395	0.281	0.008	0.170	0.153	0.208
Total Zinc	mg/L	0.500	0.21	0.17	0.279	0.122	0.379	0.492	0.497	0.105	0.142	0.165

Total Lead	mg/L	0.050	0.11	0.10	0.010	0.008	0.046	0.111	0.054	0.027	0.015	0.018
48-Hour LC_{50}	%	50			<6.25	66.0	17.7	77.1	<6.25	11.3	>100	79.4
Cadmium	mg/L		<0.01	<0.01								
Chromium, Hex	mg/L		<0.01	<0.01								
Silver	mg/L		0.15	0.09								
Surfactants	mg/L		0.11	<0.01								

- **Compliance Schedule/Special Condition #2**: Section 10(C) of the existing permit requires that the permittee achieve compliance with an average monthly effluent limitation for total nitrogen of 17.7 kg/day (38.9 lbs/day) by August 1, 2009, at the latest. In January 2009, Summit submitted a report (*Scope of Study For Investigation and Implementation Plan, NPDES Permit CT0001180*) that described an investigation to be conducted which was designed to reduce the total nitrogen level in its effluent. This investigation consisted primarily of the identification and subsequent substitution/elimination of nitrogen-bearing raw materials used at the facility. On August 20, 2010, Summit submitted a supplemental report that summarized the actions that it had taken to reduce the total nitrogen level in the effluent. These actions included: reformulating the lime slurry (which was determined to contain a significant source of total kjeldahl nitrogen) and substituting nitric acid for sulfuric acid in several of the process lines. These reports were approved on November 10, 2010. The permittee has been in compliance with the 2009 stepdown since taking these actions.

- **Compliance Schedule/Special Condition #3**: Section 10(D) of the existing permit requires that the permittee achieve compliance with the effluent limitations for total residual chlorine, total copper, total lead, total nickel, total zinc, and acute aquatic toxicity contained in Section 5, Tables C & D of the permit by July 1, 2011, at the latest. Compliance with the toxicity limits also included a requirement that the permittee undertake a Toxicity Identification Evaluation/Toxicity Reduction Evaluation (TIE/TRE), if necessary, and also required that the permittee demonstrate compliance with the instantaneous toxicity limits in the NPDES permit. The permittee submitted a report in January 2009 (*Scope of Study For Investigation and Implementation Plan, NPDES Permit CT0001180*) summarizing the manner in which it intended to comply with the requirements of Section 10(D). In that report, the permittee proposed to implement certain operating procedures designed to achieve the required limits, including: controlling dragout, recycling rinsewaters, reducing/substituting surfactant use, optimizing the performance of the spray systems and rinsing methods, and reducing the use of chelating agents. These procedures were implemented over time and the chemical-specific limits were met by the required compliance date of July 2011. In addition, the permittee submitted verification on November 27, 2012 that it is achieving compliance with the maximum instantaneous permit limits for acute toxicity in Table D of its permit. However, in January 2014, the permittee began having compliance issues with acute aquatic toxicity. In 2015, it undertook a pilot study designed to reduce metals concentrations in its effluent and to improve aquatic toxicity results. Based on the findings of the pilot study, the permittee modified its treatment system in 2016 and 2017. Since September 2016, there have been no acute aquatic toxicity violations.

IV. GENERAL ISSUES RELATED TO THE APPLICATION

A. FEDERALLY-RECOGNIZED INDIAN LAND

As provided in the permit application, the site is not located on federally-recognized Indian land.

B. COASTAL AREA/COASTAL BOUNDARY

The activity is not located within a coastal boundary as defined in CGS 22a-94(b).

C. ENDANGERED SPECIES

The June 2016 Natural Diversity Database map indicates that there is a potential conflict within a half-mile of the site. However, based on the letter dated June 18, 2012 from the Department's Bureau of Natural Resources, a determination was made that the proposed activity will not impact any extant populations of federal or state Endangered, Threatened or Special-Concern Species that occur in the vicinity of the property.

D. AQUIFER PROTECTION AREAS

The project site is located within a town required to establish Aquifer Protection Areas but the site is not located within a protected area identified on a Level A or B map.

E. CONSERVATION OR PRESERVATION RESTRICTION

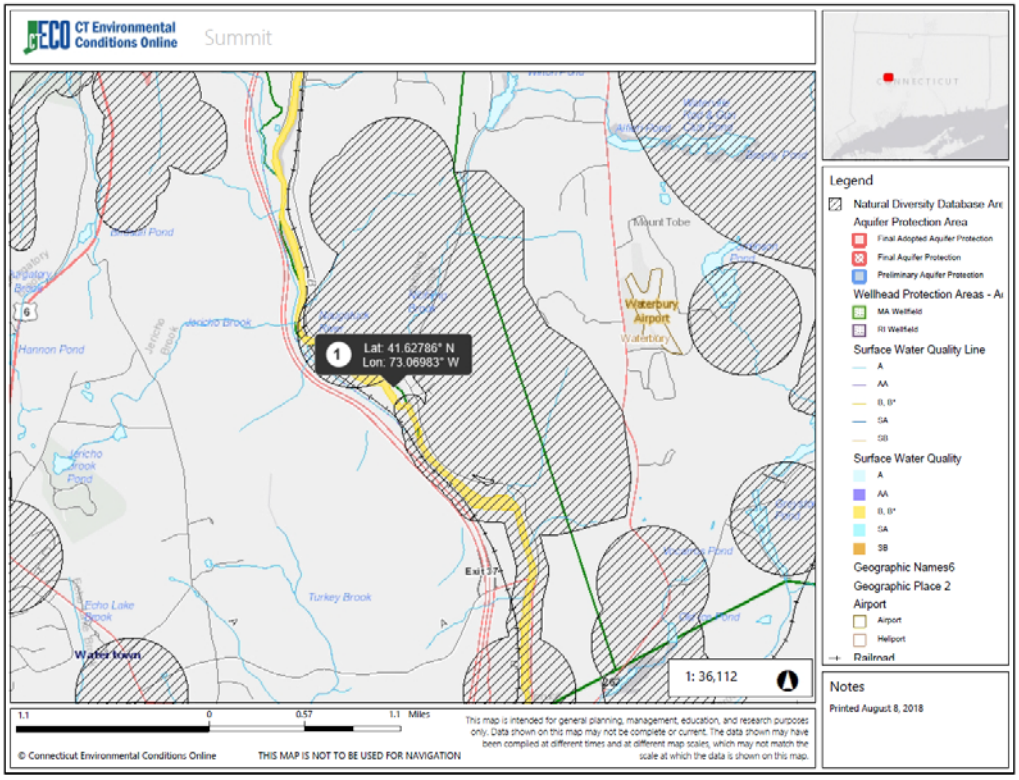
As provided in the permit application, the property is not subject to a conservation or preservation restriction.

F. PUBLIC WATER SUPPLY WATERSHED

According to the applicant, the site is not located within a public water supply watershed.

V. RECEIVING WATER INFORMATION

Summit discharges into the section of the Naugatuck River identified as Waterbody Segment ID CT6900-00_05. This section of the river is classified as B. Class B waters are designated for: habitat for fish and other aquatic life and wildlife; recreation; and industrial and agricultural water supply. This waterbody segment is identified on the 2016 *Integrated Water Quality Report* as an impaired waterbody. There are two impaired designated uses associated with this waterbody: 1) An impairment to the habitat for fish, other aquatic life, and wildlife due to whole effluent toxicity, and 2) an impairment to recreation due to *Escherichia coli (E. coli)*. Total Maximum Daily Loads (TMDLs) have been adopted and approved for each impairment. The *Total Maximum Daily Load Analysis for the Upper Naugatuck River, Thomaston, Connecticut*, addresses whole effluent toxicity, and was approved by EPA on August 17, 2005. *A Total Maximum Daily Load Analysis for Recreational Uses of the Naugatuck River Regional Basin* addresses *E. coli* and was approved by EPA on June 4, 2008. The TMDL concerning whole effluent toxicity includes a wasteload allocation assigned to Summit; the TMDL concerning *E. coli* does not include any wasteload allocation for Summit. In addition, this segment of the Naugatuck River is subject to *A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound,* December 2000. [See Section XIV for information about nitrogen, *E coli*, and toxicity.]



VI. NATURE OF BUSINESS GENERATING THE DISCHARGE

Summit is primarily engaged in metal finishing operations at the site. The SIC code for this activity, as provided by the applicant, is: 3471 (Electroplating, Plating, Polishing, Anodizing, and Coloring). The applicant also notified for SIC codes 3313 (Electrometallurgical Products), and 3399 (Primary Metal Products). The applicant indicates that its wire drawing operations may be subject to one of these SIC codes; it is unsure what the other SIC code applies to.

VII. FACILITY DESCRIPTION

Summit is located on approximately 8.2 acres in a mixed commercial/industrial area on the Naugatuck River in Thomaston. [See Attachments 2 & 3 for site detail]. Summit's site includes land on both sides of the Naugatuck River; the facility is located on the east side of the river (in Thomaston) and the facility's production wells are located on the west side of the river (in Watertown). The three production wells provide the source water for the facility. [Summit has a Diversion Permit (DIV-200701641GP) authorizing the water withdrawal.] The water from the production wells is piped under the Naugatuck River and stored at Summit in a 5,000 gallon concrete vault ("Return Well"). Prior to use, the water is treated through a reverse osmosis (RO) system; the backwash from the RO system is re-used in certain operations at the facility. Any water used for non-contact cooling purposes at the facility is recycled back into the Return Well for later re-use.

Summit is primarily engaged as a metal finishing job shop. Miscellaneous, related operations include minor machining and drawing of copper wire prior to plating. Summit conducts metal finishing of various parts (i.e., machined parts, wire, and thin metal strip) for the telecommunications, aerospace, medical, battery, and automotive industries. The base metals processed include copper, beryllium-copper, brass, steel, stainless steel, and aluminum. Summit's metal finishing operations include electroplating (i.e., chromium, copper, bronze, nickel, tin, tin-lead, lead, gold, silver, palladium), electroless plating (nickel), reflow tin plating, brite

dipping, cleaning, stripping, and tumbling. [See Attachment 4 for the detail on the process operations.] The rinsewaters and cleaners associated with the metal finishing operations are directed into the on-site wastewater treatment system; concentrated baths are containerized and shipped off-site. Summit also generates certain ancillary wastestreams (e.g., laboratory wastewater, air scrubber wastewater, etc.) that are also directed into the on-site wastewater treatment system.

From 1955 until 1975, a metal hydroxide sludge impoundment was used at the site. This unit was closed in place in 1975. After closure of this unit, two lagoons were used at the site until 1986 to treat wastewater from the facility's operations. These units went through RCRA closure in 1988/1989. A Certificate of Closure was issued on October 16, 1989. There is presently a network of about 50 monitoring wells on-site. Four of these wells (i.e., MW-5, MW-6, MW-8, and MW-10) are RCRA wells and have been monitored semi-annually since closure. [See Attachment 5 for a well map.] Monitoring results from these wells indicate that the groundwater on-site contains: barium, cadmium, cyanide, cobalt, copper, gold, mercury, nickel, silver, zinc, cis-1,2-dichloroethylene, 1,1,1-trichloroethylene, and trichloroethylene. [See Attachment 6 for a data summary of the RCRA wells from 2008 to 2012]. Summit is seeking authorization to treat the groundwater on-site through its on-site wastewater treatment system. It proposes to direct the groundwater into the system at a rate of up to 20 gpm for 24 hours per day (i.e., 28,880 gpd maximum).

Sanitary wastewater that is generated at the facility is directed to an on-site septic system.

A summary of the wastestreams generated at the facility and treated (or proposed to be treated) through the on-site wastewater treatment system is as follows:

WASTESTREAM	DESCRIPTION
Metal Finishing Wastewaters	The rinsewaters and cleaners (acidic and alkaline solutions) associated with the metal finishing operations
Laboratory Wastewater	Wastewater that is generated from cleaning the glassware in the laboratory
Water Treatment Wastewater	Boiler water softener
Air scrubber wastewater	Wastewater that is generated from the on-site air scrubber associated with the metal finishing operations
Floorwash Wastewater/Building Maintenance Wastewater	This includes the wastewater associated with cleaning the process tanks as well as the floor spill material generated from the metal finishing operations
Tumbling Wastewater	Wastewater generated from miscellaneous tumbling/cleaning/decontamination operations
On-Site Groundwater Remediation Wastewater (PROPOSED)	The groundwater at the facility which contains: barium, cadmium, cyanide, cobalt, copper, gold, mercury, nickel, silver, zinc, cis-1,2-dichloroethylene, 1,1,1-trichloroethylene, and trichloroethylene
Drum Rinsing Wastewater	Wastewater that is generated from rinsing out "empty" drums of various chemicals at the site
Reverse Osmosis (RO) Reject and Backwash Water	Wastewater generated from backwashing the supply water's reverse osmosis (RO) system with water. The RO water is recirculated back into the process rinsewaters for reuse.
Boiler Blowdown	The boilers on-site are blown down twice a day in order to maintain the proper chemistry in the boiler; approximately 50 gallons of cooling water is combined with the blowdown to control temperature.
Air Compressor Condensate/Blowdown	The air compressor is periodically blown down as necessary to remove any condensate in the compressor
Fire Suppression Test Water	Wastewater that is generated from the annual testing the fire suppression system

VIII. THE ON-SITE WASTEWATER TREATMENT SYSTEM

The on-site wastewater treatment system consists of the following operations: Metals Recovery, Equalization/Precipitation, Cyanide Treatment, Flocculation/Clarification, Final Neutralization:

Metals Recovery: Wastewaters from the tin, silver, and gold plating operations are directed to individual recovery systems in order to remove the subject metals. Metals are precipitated out of

the tin-bearing and silver-bearing wastewaters using sodium hydroxide and sodium hypochlorite, respectively; gold-bearing wastewaters are treated in ion exchange columns in order to remove the gold. The wastewater generated from the tin precipitation operation is directed to Equalization/Neutralization for further treatment; the wastewater remaining after the silver and gold recovery operations is directed into Cyanide Treatment.

Equalization/Precipitation: All dilute acidic and alkaline solutions, as well as non-cyanide bearing rinsewaters are directed into the Equalization/Precipitation system. The system consists of a 5,000 gallon tank (HpH I) where the wastewater is treated with lime and sodium hypochlorite. These wastewaters are then pH adjusted using sulfuric acid in a 1,500 gallon tank (HpH II). From there, the wastewater is dechlorinated using sodium thiosulfate as it is conveyed to Flocculation/Clarification for additional treatment.

Cyanide Treatment: All cyanide-bearing wastewaters are directed into a two-stage cyanide destruction system for treatment. Stage 1 occurs in a 5,000 gallon tank (CN I) and consists of pH adjustment with lime slurry followed by the addition of sodium hypochlorite to treat the amenable cyanide. The wastewater then flows to another 5,000 gallon tank (CN II) where the pH of the wastewater is adjusted with sulfuric acid. The wastewater is then dechlorinated with sodium thiosulfate before being directed to Flocculation/Clarification for additional treatment. The sample taken to determine compliance with the amenable cyanide permit limit (DSN 001A-1) is taken after the CN II tank.

Hexavalent Chromium Treatment (PROPOSED): Summit is proposing to expand its existing operations to include hexavalent chromium plating. This will require that Summit install additional treatment equipment in order to pre-treat the hexavalent chromium-bearing wastewaters. Summit is proposing to install a conventional two-stage hexavalent chromium treatment system using sodium metabisulfate to reduce the hexavalent chromium to the trivalent form of chromium. Summit will take a sample of the wastewater following the second-stage treatment in order to verify the level of hexavalent chromium. This sampling point will be known as DSN 001B-1. The wastewater treated through this system will receive further treatment, as necessary.

Flocculation/Clarification/Final Neutralization: Dechlorinated wastewaters from Equalization/Precipitation and Cyanide Treatment are dosed with polymers and allowed to settle in the Flocculant Chamber. Following flocculation, the wastewater is conveyed to the Clarifier. Sludge generated in the Clarifier is dewatered and shipped off-site. The clarified water is pH adjusted and then discharged into the Naugatuck River via a side-bank discharge pipe. [Approximately twice per year, the Clarifier requires clean-out. When this is necessary, the 250,000 gallon "Safety Tank" is temporarily used as a Clarifier.] The design flow of the treatment system is 400,000 gpd. DSN 001-1 is a continuous discharge that flows approximately 5-6 days per week, 24 hours per day.

See Attachments 7 & 8 for a schematic of the treatment system and the proposed hexavalent chromium treatment system.

IX. EFFLUENT QUALITY DATA

See Attachment 9 for a summary of DMR data from 2008 to 2018.

X. MONITORING/EFFLUENT VIOLATIONS

Based on a review of Summit's DMRs from 2008 to June 2018, the following effluent violations were noted:

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
January 2008	001-1	Silver	Average Monthly	0.027 kg/day	0.04 kg/day
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown.					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
November 2009	001-1	BOD_5	Average Monthly	42.7 kg/day	59.8 kg/day
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown, but suspected sample contamination.					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
March 2010	001-1	Ammonia	Maximum Daily	20 mg/L	22 mg/L
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown, but the permittee suspects that the source may be due to the large amount of electroless nickel work which was performed in that month. [The electroless nickel line uses ammonium hydroxide].					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
July 2011	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	75%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
July 2011	001-1	Acute Toxicity *Pimephales promelas*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	75%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
March 2013	001-1	Cyanide, Total	Average Monthly	0.22 mg/L	0.253 mg/L
REASON: ☒ Equipment Related ☐ Operator Error ☐ Other ☐ Unknown					
A bad O-ring on the union to the return line on the feed tank associated with the wire stripping operation is assumed to have been the cause of the violation. The O-ring was replaced and follow-up sampling for cyanide was conducted. These results were below the permit limits.					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
March 2013	001-1	Cyanide, Total	Maximum Daily	0.4 mg/L	0.41 mg/L
REASON: ☒ Equipment Related ☐ Operator Error ☐ Other ☐ Unknown					
A bad O-ring on the union to the return line on the feed tank associated with the wire stripping operation is assumed to have been the cause of the violation. The O-ring was replaced and follow-up sampling for cyanide was conducted. These results were below the permit limits.					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE

January 2014	001-1	Cyanide, Amenable	Average Monthly	0.1 mg/L	0.11 mg/L
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
No explanation provided.					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
January 2014	001-1	Cyanide, Total	Average Monthly	0.22 mg/L	0.23 mg/L
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
No explanation provided.					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
January 2014	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	75%
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
April 2014	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	75%
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
April 2014	001-1	Acute Toxicity *Pimephales promelas*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	50%
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
July 2014	001-1	Nickel, Total	Average Monthly	0.653 mg/L	0.730 mg/L
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☒ **Other** ☐ **Unknown**					
Violation reportedly related to reducing the effluent pH.					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
October 2014	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	0%
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
October 2014	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	Survival in 100% Effluent of ≥ 50%	22%
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
November 2014	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	12%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
November 2014	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	Survival in 100% Effluent of ≥ 50%	8%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
December 2014	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	74%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
December 2014	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	Survival in 100% Effluent of ≥ 50%	30%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
January 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	0%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
January 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	Survival in 100% Effluent of ≥ 50%	0%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
January 2015	001-1	Silver, Total	Average Monthly Maximum Daily	27 g/day 54 g/day	40 g/day 87 g/day
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
No reason provided.					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE

February 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	0%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
February 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	Survival in 100% Effluent of ≥ 50%	0%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
February 2015	001-1	Silver, Total	Maximum Daily	54 g/day	56 g/day
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
No reason provided.					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
March 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	16%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
March 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	Survival in 100% Effluent of ≥ 50%	24%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
April 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	8%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
April 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	Survival in 100% Effluent of ≥ 50%	8%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
April 2015	001-1	Silver, Total	Average Monthly	27 g/day	34 g/day
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
No reason provided.					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
May 2015	001-1	Silver, Total	Average Monthly Maximum Daily	27 g/day 54 g/day	50 g/day 70 g/day
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
No reason provided.					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
June 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	12%
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
June 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	Survival in 100% Effluent of ≥ 50%	4%
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
June 2015	001-1	Silver, Total	Average Monthly Maximum Daily	27 g/day 54 g/day	44 g/day 69 g/day
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
No reason provided.					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
July 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	40%
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
July 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	Survival in 100% Effluent of ≥ 50%	34%
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
July 2015	001-1	Silver, Total	Average Monthly Maximum Daily	27 g/day 54 g/day	37 g/day 65 g/day
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
No reason provided.					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE

July 2015	001-1	Fluoride	Maximum Daily	30 mg/L	35.5 mg/L
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
No reason provided.					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
August 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	0%
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
August 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	Survival in 100% Effluent of ≥ 50%	0%
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
September 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	18%
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
September 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	Survival in 100% Effluent of ≥ 50%	28%
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
September 2015	001-1	Lead, Total	Maximum Daily	13 g/day	17.8 g/day
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
No reason provided.					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
October 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	16% 10%
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
October 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	Survival in 100% Effluent of ≥ 50%	24% 8%
REASON: ☐ **Equipment Related** ☐ **Operator Error** ☐ **Other** ☒ **Unknown**					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
October 2015	001-1	Lead, Total	Maximum Daily	13 g/day	18 g/day
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
No reason provided.					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
November 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	24%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
November 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	Survival in 100% Effluent of ≥ 50%	28%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
November 2015	001-1	Lead, Total	Maximum Daily	13 g/day	24.3 g/day
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
No reason provided.					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
December 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	54%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
December 2015	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	Survival in 100% Effluent of ≥ 50%	42%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
January 2016	001-1	Silver, Total	Average Monthly Maximum Daily	27 g/day 54 g/day	30 g/day 58 g/day
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
No reason provided.					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE

July 2016	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	26%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
July 2016	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	Survival in 100% Effluent of ≥ 50%	24%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	REPORTED VALUE
August 2016	001-1	Acute Toxicity *Daphnia pulex*	Maximum Daily	NOAEL of ≥90% @ CTC of 52	70%
REASON: ☐ Equipment Related ☐ Operator Error ☐ Other ☒ Unknown					
Unknown					

In June 2016, the permittee discovered that its flow meter was not programmed correctly, resulting in effluent flows being underreported since approximately 2012. The DMRs from 2015 forward were corrected using a factor to estimate what the flows and mass-based discharge rates would have been if the flow meter had been programmed correctly.

XI. OUTSTANDING ENFORCEMENT (RELATED TO WASTEWATER DISCHARGES):

- On April 3, 2012, Notice of Violation NOV WR IN 12 009 was issued to Summit because it violated its permit limit for pH (Maximum); this was determined by a grab sample collected on January 10, 2012. The NOV was closed on October 17, 2012.

- On August 27, 2012, Notice of Violation NOV WR IN 12 020 was issued to Summit because it violated its Maximum Instantaneous permit limit for Nickel; this was determined by a grab sample collected on June 11, 2012. The NOV was closed on October 17, 2012.

- On April 7, 2014, Notice of Violation NOV WR IN 14 403 was issued to Summit because it violated its pH limit. In addition, the pH alarm did not activate at the high level.

- On June 19, 2014, Notice of Violation NOV WR IN 14 015 was issued to Summit because it violated its Maximum Instantaneous permit limit for Lead; this was determined by a grab sample collected on April 28, 2014. In addition, the NOV also identified other violations of Maximum Instantaneous limits and indicated that the permittee had continuously underreported its pH, Maximum value since permit issuance.

- On August 28, 2014, Notice of Violation NOV WR IN 14 017 was issued to Summit because it violated its Maximum Instantaneous permit limit for Nickel; this was determined by a grab sample collected on June 23, 2014.

XII. SPILL HISTORY (LAST FIVE YEARS):

None

XIII. EFFLUENT GUIDELINES

The following Effluent Guidelines and Standards were reviewed in order to determine their applicability to Summit's discharge, DSN 001-1:

- **40 CFR 433: Metal Finishing Point Source Category**. Summit is a metal finishing job shop that began operations in 1955. It has been, and is currently engaged in, electroplating, passivation, and certain ancillary metal finishing operations. Since Summit performs the "core" and "ancillary" operations identified in 40 CFR 433.10, its discharge is regulated as a metal finishing discharge under 40 CFR 433. Summit is presently regulated as an existing source. However, numerous changes have occurred at the facility over the years, which have included adding new lines, re-configuring lines for different operations, and re-designing lines to minimize the generation of pollutants. If changes are made to an existing facility's operations that meet the definition of a new source (i.e., it installed new lines, rebuilt or moved lines, converted existing lines to do new operations, etc.), the facility is subject to new source standards. Because changes have been made to the configuration and capabilities of the operations at Summit after the deadline date of July 15, 1983, the New Source Performance Standards (NSPS) at 40 CFR 433 apply to the discharge.

- **40 CFR 465: Coil Coating Point Source Category**. Summit cleans and plates copper coil at its facility. The regulations at 40 CFR 465 address coil coating of certain basis materials. Under this regulation, coil coating covers at least two of the three following operations: cleaning, conversion coating, and painting. Summit cleans, but does not conversion coat or paint its brass and copper coils. Therefore, 40 CFR 465 does not apply to the discharge.

- **40 CFR 468: Copper Forming Point Source Category**. Summit is engaged in the drawing of copper wire at its site. Following drawing, the copper wire is cleaned, and plated as necessary. The drawing solutions associated with this operation are containerized and shipped off-site. Section 40 CFR 468 regulates the discharges associated with copper forming operations; drawing is identified as a forming operation. However, the scope of this categorical is limited to those facilities classified within SIC codes 3351 and 3357. Summit's operations are not described by either of these SIC codes. Therefore, the wire drawing activity can be classified as an ancillary operation under 40 CFR 433.

- **40 CFR 445: Landfills Point Source Category**. Summit has closed its former surface impoundment as a "landfill". However, surface impoundments are specifically excluded from the applicability of this categorical (40 CFR 445.1(b)). In addition, the only wastewater associated with the closed unit is the impacted groundwater and this wastestream is specifically excluded from the requirements of 40 CFR 445.1(d).

XIV. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

A. WASTESTREAMS AUTHORIZED FOR DISCHARGE UNDER DSN 001-1: Metal Finishing Wastewaters; Laboratory Wastewater; Water Treatment Wastewater; Air Scrubber Wastewater; Floor Wash Water/Building Maintenance Wastewater; Tumbling Wastewater; On-Site Groundwater Remediation Wastewater; Drum Rinsing Wastewater; RO Backwash Water; Boiler Blowdown; Air Compressor Blowdown/Condensate; Fire Suppression Test Water

B. POLLUTANTS OF CONCERN FOR DSN 001-1:

The following pollutants are included as monitoring pollutants in the permit for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION			
	POLLUTANT WITH AN APPLICABLE TECHNOLOGY-BASED LIMIT	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Acute Toxicity		✓		
Chronic Toxicity		✓		
Aluminum			✓	
Ammonia			✓	
BOD_5			✓	
Cadmium	✓			
Chlorine, Total Residual			✓	
Chloroform			✓	
Chromium	✓			
cis-1,2-Dichloroethylene				✓
Copper	✓			
Cyanide	✓			
Fluoride			✓	
Formaldehyde				✓
Gold				✓
Iron			✓	
Kjeldahl Nitrogen			✓	
Lead	✓			
Mercury				✓
Nickel	✓			
Nitrate				✓
Nitrite				✓
Nitrogen, Total			✓	
Oil & Grease	✓			
pH	✓			
Phosphorus			✓	
Silver	✓			
Tin				✓
Total Suspended Solids	✓			
Total Toxic Organics	✓			
1,1,1-Trichloroethane				✓
Trichloroethylene				✓
Zinc	✓			

NOTE: *E coli* is not a pollutant of concern

C. BASIS FOR DSN 001-1 LIMITS:

Technology and water-quality based requirements are considered when developing permit limits. Technology-based limits represent the minimum level of control imposed under the Clean Water Act ("CWA"). Industry-specific technology-based limits are set forth in 40 CFR 405 – 471 (EPA's Effluent Limitation Guidelines) and in RCSA section 22a-430-4(s)(2). Water quality-based limits are designed to protect water quality and are determined using the procedures set for in EPA's *Technical Support Document for Water Quality-Based Toxics Control*, 1991 ("TSD"). When both technology and water quality-based limits apply to a particular pollutant, the more stringent limit would apply. In addition, water quality-based limits are required when any pollutant or pollutant parameter (conventional, non-conventional, toxic, and whole effluent toxicity) is or may be discharged at a level that causes, has reasonable potential to cause, or contributes to an excursion above any water quality criteria. Numeric water quality criteria is found in RCSA section 22a-429-9 of the *Connecticut Water Quality Standards*.

D. TECHNOLOGY-BASED LIMITS FOR DSN-001-1:

DSN 001-1 is subject to the limits at 40 CFR 433.16 and RCSA section 22a-430-4(s)(2). Technology-based limits at 40 CFR 433.16 and RCSA section 22-430-4(s)(2) apply to process wastewaters only. Therefore, an adjustment factor (i.e., the ratio of the process wastewaters that comprise the discharge to the total discharge flow) was applied to the limits in 40 CFR 433.16 and the limits in RCSA section 22a-430-4(s)(2) in order to determine the applicable end-of-pipe technology-based permit limits, summarized below. See Attachment 10 for these calculations.

E. MIXING ZONE FOR DSN 001-1:

Summit has been allocated a mixing zone based on its 7Q10 flow (14.9 cfs). The allocations are as follows: cyanide, lead and nickel: 25% and silver: 50%. See Attachment 11 for information how the mixing zone was determined.

F. WATER QUALITY-BASED LIMITS FOR DSN 001-1:

Consistent with CWA Section 301(b)(1)(C), NPDES permits must include effluent limits necessary to protect water quality. Water quality-based limits were determined for each toxic pollutant regulated by the metal finishing categorical. A summary of those limits and the rationale used to derive the limits is found at Attachment 12.

In addition, a reasonable potential analysis was conducted on each non-categorical pollutant that could be expected to be in the discharge. As defined in the TSD, reasonable potential is where an effluent is projected or calculated to cause an excursion above a water quality standard based on a number of factors, including at a minimum, the four factors listed in 40 CFR 122.44(d)(1)(ii). A reasonable potential analysis was conducted for each parameter that could be expected to be in the discharge. [See Attachment 13 for the reasonable potential analysis.] This analysis indicates that reasonable potential exists for aluminum, ammonia, and chloroform to exceed the applicable water quality criteria. Therefore, consistent with 40 CFR 122.44(d)(1)(iii), the permit will include water quality-based limits for these parameters.

G. LIMIT DETERMINATION FOR DSN 001-1:

Below is a summary of the applicable limits for each of the subject parameters. If more than one limit applies to a parameter, the most stringent limit is included in the permit.

At an average flow of 160,000 gpd:

PARAMETER	UNITS	LIMITS					
		TECHNOLOGY (40 CFR 433.16)		TECHNOLOGY (RCSA 22a-430(4)(s)		WATER QUALITY *Water Quality Standards*, October 2013	
		AVERAGE MONTHLY LIMIT OR pH Minimum	MAXIMUM DAILY LIMIT OR pH Maximum	AVERAGE MONTHLY LIMIT	MAXIMUM DAILY LIMIT	AVERAGE MONTHLY LIMIT OR pH Minimum	MAXIMUM DAILY LIMIT OR pH Maximum
Aluminum	µg/L			2000	4000	269	540
Aluminum	g/day			1211	2422	163	327
Ammonia	mg/L					15.0	32.4
Ammonia	kg/day					9.13	19.68
Cadmium, Total	µg/L	70	110	70	110	0.14	0.21
Cadmium, Total	g/day	42	67	42	67	0.10	0.14
Chlorine, Total Residual	µg/L						
Chlorine, Total Residual	g/day						
Chloroform	µg/L					470	686
Chloroform	g/day					285	416
Chromium, Total	µg/L	1710	2770	1000	2000	47	69
Chromium, Total	g/day	1035	1677	605	1211	32	47
Copper, Total	µg/L	2070	3380	1000	2000	13	26

PARAMETER	UNITS	LIMITS					
		TECHNOLOGY (40 CFR 433.16)		TECHNOLOGY (RCSA 22a-430(4)(s)		WATER QUALITY *Water Quality Standards,* October 2013	
		AVERAGE MONTHLY LIMIT OR pH Minimum	MAXIMUM DAILY LIMIT OR pH Maximum	AVERAGE MONTHLY LIMIT	MAXIMUM DAILY LIMIT	AVERAGE MONTHLY LIMIT OR pH Minimum	MAXIMUM DAILY LIMIT OR pH Maximum
Copper, Total	g/day	1253	2047	605	1211	9	18
Cyanide, Total	µg/L	Cyanide limits met at an internal point		Cyanide limits met at an internal point		61	123
Cyanide, Total	g/day					42	84
Formaldehyde	mg/L						
Fluoride	mg/L			20	30		
Fluoride	kg/day			12.1	18.1		
Gold	mg/L			0.1	0.5		
Gold	g/day			61	303		
Iron, Total	mg/L			3.0	5.0		
Iron, Total	g/day			1816	3027		
Kjeldahl Nitrogen Total	mg/L						
Lead, Total	µg/L	430	690	100	500	10	20
Lead, Total	g/day	260	418	61	303	6.7	13.4
Nickel, Total	µg/L	2380	3980	1000	2000	246	564
Nickel, Total	g/day	1441	2410	605	1211	168	385
Nitrate, Total	mg/L						
Nitrite, Total	mg/L						
Nitrogen, Total	lbs/day						
Oil & Grease	mg/L	26	52	10			
Oil & Grease	kg/day	15.7	31.4	6.05			
pH	SU	6.0	9.0			6.5	8.0
Silver, Total	µg/L	240	430	100	500	12	28
Silver, Total	g/day	145	260	61	303	8.0	19.4
Tin	mg/L			2.0	4.0		
Tin	g/day			1211	2422		
Total Suspended Solids	mg/L	31	60	20	30		
Total Suspended Solids	kg/day	18.7	36.3	12.1	18.1		
Total Toxic Organics	mg/L		2.12				
Zinc, Total	µg/L	1480	2610	1000	2000	39	65
Zinc, Total	g/day	896	1580	605	1211	26	44

Instantaneous limits are 1.5 times the maximum daily limit

At an average flow of 330,000 gpd:

PARAMETER	UNITS	LIMITS					
		TECHNOLOGY (40 CFR 433.16)		TECHNOLOGY (RCSA 22a-430(4)(s)		WATER QUALITY *Water Quality Standards,* October 2013 & *National Recommended Water Quality Criteria*	
		AVERAGE MONTHLY LIMIT OR pH Minimum	MAXIMUM DAILY LIMIT OR pH Maximum	AVERAGE MONTHLY LIMIT	MAXIMUM DAILY LIMIT	AVERAGE MONTHLY LIMIT OR pH Minimum	MAXIMUM DAILY LIMIT OR pH Maximum
Aluminum	µg/L			2000	4000	167	335
Aluminum	g/day			2498	4995	209	419
Ammonia	mg/L					7.87	16.9
Ammonia	kg/day					9.83	21.2
Cadmium, Total	µg/L	70	110	70	110	0.14	0.21
Cadmium, Total	g/day	87	137	87	137	0.18	0.26
Chlorine, Total Residual	µg/L						
Chlorine, Total Residual	g/day						
Chloroform	µg/L					470	686
Chloroform	g/day					588	857
Chromium, Total	µg/L	1710	2770	1000	2000	47	69
Chromium, Total	g/day	2135	3459	1249	2498	59	86
Copper, Total	µg/L	2070	3380	1000	2000	13	26
Copper, Total	g/day	2584	4221	1249	2498	16	32

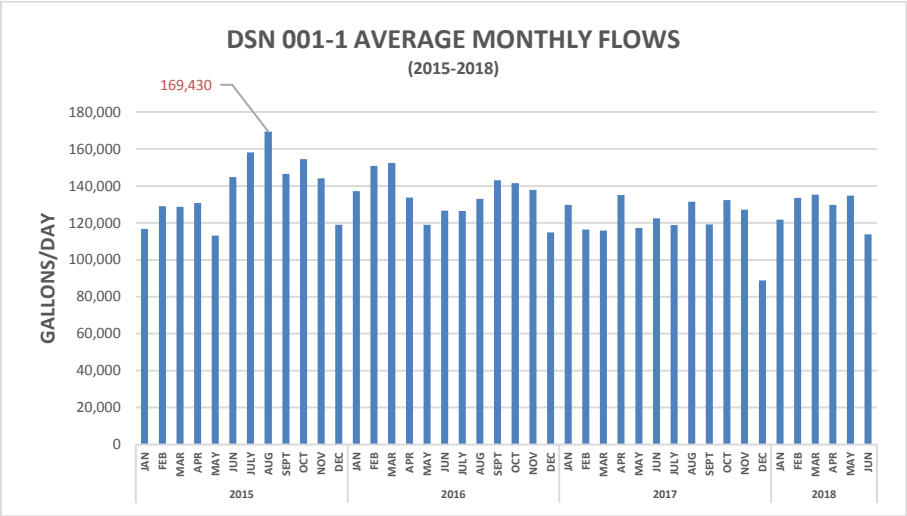
PARAMETER	UNITS	LIMITS					
		TECHNOLOGY (40 CFR 433.16)		TECHNOLOGY (RCSA 22a-430(4)(s)		WATER QUALITY *Water Quality Standards,* October 2013 & *National Recommended Water Quality Criteria*	
		AVERAGE MONTHLY LIMIT OR pH Minimum	MAXIMUM DAILY LIMIT OR pH Maximum	AVERAGE MONTHLY LIMIT	MAXIMUM DAILY LIMIT	AVERAGE MONTHLY LIMIT OR pH Minimum	MAXIMUM DAILY LIMIT OR pH Maximum
Cyanide, Total	µg/L	Cyanide limits met at an internal point		Cyanide limits met at an internal point		35	71
Cyanide, Total	g/day					44	89
Formaldehyde	mg/L						
Fluoride	mg/L			20	30		
Fluoride	kg/day			24.9	37.4		
Gold	mg/L			0.1	0.5		
Gold	g/day			125	624		
Iron, Total	mg/L			3.0	5.0		
Iron, Total	g/day			3746	6244		
Kjeldahl Nitrogen Total	mg/L						
Lead, Total	µg/L	430	690	100	500	5.8	12
Lead, Total	g/day	537	862	125	624	7.2	14.5
Nickel, Total	µg/L	2380	3980	1000	2000	144	331
Nickel, Total	g/day	2972	4970	1249	2498	180	413
Nitrate, Total	mg/L						
Nitrite, Total	mg/L						
Nitrogen, Total	lbs/day						
Oil & Grease	mg/L	26	52	10			
Oil & Grease	kg/day	32.4	64.9	12.4			
pH	SU	6.0	9.0			6.5	8.0
Silver, Total	µg/L	240	430	100	500	6.6	16
Silver, Total	g/day	300	537	125	624	8.3	19.9
Tin	mg/L			2.0	4.0		
Tin	g/day			2498	4995		
Total Suspended Solids	mg/L	31	60	20	30		
Total Suspended Solids	kg/day	38.7	74.9	24.9	37.4		
Total Toxic Organics	mg/L		2.13				
Zinc, Total	µg/L	1480	2610	1000	2000	39	65
Zinc, Total	g/day	1848	3259	1249	2498	49	81

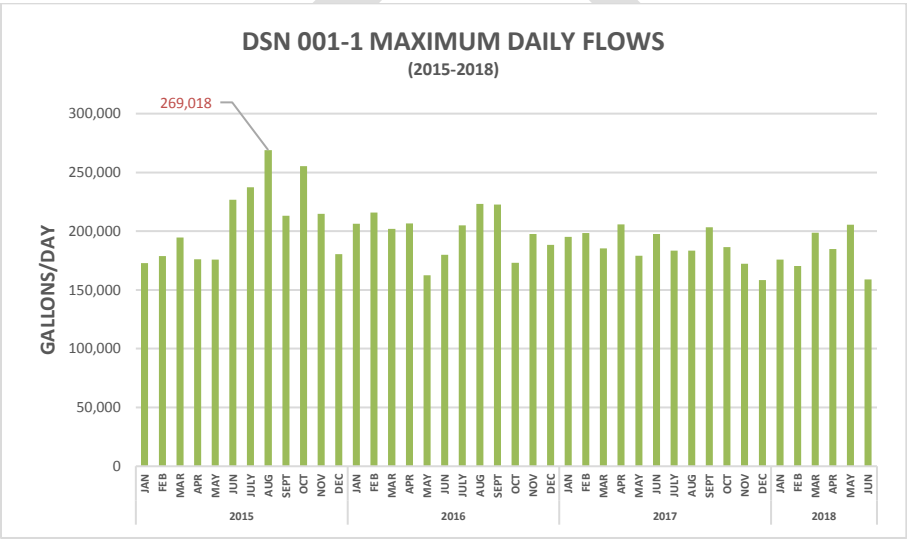
Instantaneous limits are 1.5 times the maximum daily limit

H. COMMENTS ON OTHER LIMITED PARAMETERS FOR DSN 001-1:

Limits for BOD_5 and total nitrogen are also included in the permit. In addition, the permit includes two sets of limits (i.e., Table A limits and Table B limits) based on two different average flows. See below for comments on these issues:

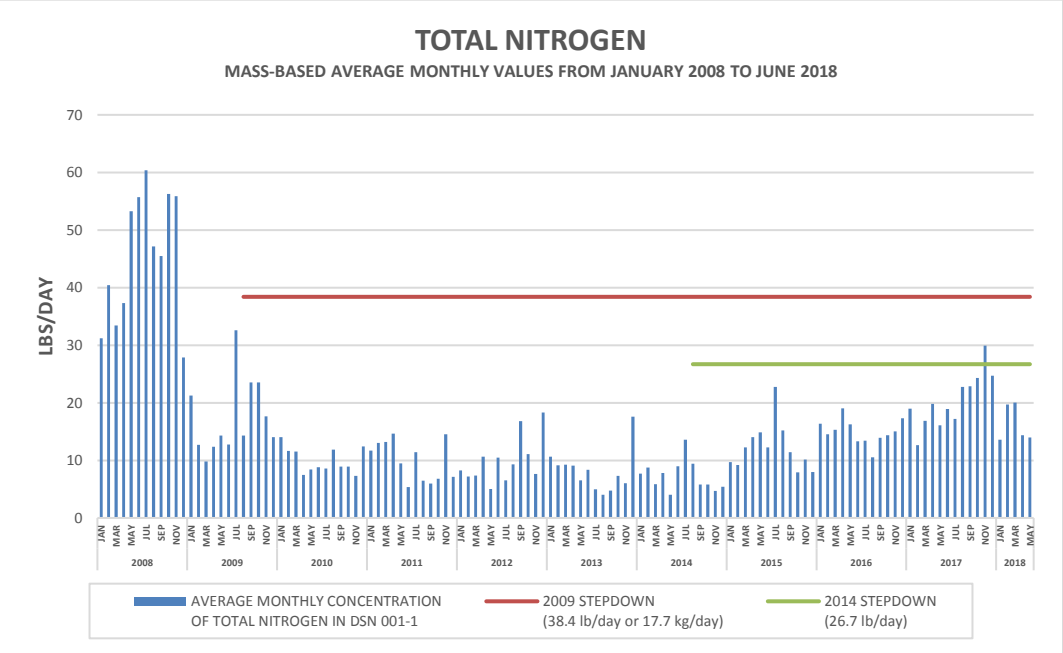
FLOW: The average monthly flow and maximum daily flow in the existing permit is 330,000 gpd and 400,000 gpd, respectively. Actual flows, since permit issuance, have been significantly lower than these values. The average flow will now be 160,000 gpd (including the proposed new wastestream) and the maximum daily flow will be 235,000 gpd.





BOD$_5$: BOD$_5$ limits have been required for those industrial facilities discharging into the upper Naugatuck River due to historic dissolved oxygen issues in this area of the river. The limit assigned to the industries has been the equivalent to secondary treatment limits (i.e., 30 mg/L as an average monthly limit). At an average of 160,000 gpd, the mass-based limit for BOD$_5$ is 40.0 lbs/day. At an average flow of 330,000 gpd, the mass-based limit for BOD$_5$ is 82.5 lbs/day.

TOTAL NITROGEN: The TMDL, *A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound*, December 2000, assigns total nitrogen allocations, by zone, to certain facilities or facility groups that discharge into Long Island Sound watershed basins. This TMDL is structured so that reductions to baseline allocations occur in steps. The reduction schedule published in the TMDL is specified as follows: a 25% reduction of the baseline through 2008; a 47.6% reduction of the baseline from 2009 through 2013; and a final 63.5% reduction of the baseline by 2014. Summit is located in Zone 4 of the subject TMDL. It does not have an industry-specific allocation; its total nitrogen allocation is associated with the miscellaneous "Industrial" loading assigned to that zone. The allocations made to miscellaneous industrial facilities under this TMDL are established from the facility's baseline total nitrogen data. Based on this data, Summit has been assigned a baseload allocation of 73.3 lbs/day. Its 2014 stepdown is 26.7 lbs/day.



TOTAL PHOSPHORUS: The Department currently has a watershed-specific nutrient management strategy for total phosphorus. The enrichment analysis conducted for the Naugatuck River watershed provides allocations for seven POTWs and one industry that discharge into the subject basin. Summit has not been allocated a total phosphorus load through this interim management strategy. The permittee is not presently monitoring its discharge for total phosphorus. There is one effluent data point for total phosphorus; the total phosphorus result was 4.88 mg/L. Numeric criteria for total phosphorus is expected to be established in the next several years. In the interim, the permittee should collect total phosphorus data.

I. WHOLE EFFLUENT TOXICITY:

Summit's existing permit requires quarterly acute toxicity testing using *Daphnia pulex* and *Pimephales promelas* and annual chronic toxicity testing using *Ceriodaphnia dubia* and *Pimephales promelas*. The existing permit includes two sets of acute toxicity limits: From permit issuance until June 21, 2011, the limits are $LC_{50} > 56\%$; from June 22, 2011 to permit expiration, the acute toxicity limits are ≥ 90% survival at 52.7% effluent and ≥ 50% survival in undiluted effluent. There are no permit limits in the existing permit for chronic toxicity. Acute and chronic toxicity results of Summit's effluent from 2008 to present are as follows:

	ACUTE (48 HOURS)					
	Daphnia pulex	*Pimephales promelas*	*Daphnia pulex*	*Pimephales promelas*	*Daphnia pulex*	*Pimephales promelas*
	LC_{50}>56%	**LC_{50}>56%**	**≥90% Survival @ CTC of 52**	**≥90% Survival @ CTC of 52**	**≥50 % Survival in 100% effluent**	**≥50 % Survival in 100% effluent**
JAN 2008	90.85%	100%				
APR 2008	100%	100%				
JUL 2008	100%	100%				
OCT 2008	73.56%	100%				
JAN 2009	72.75%	88.15%				
APR 2009	71.6%	100%				
JUL 2009	100%	100%				
OCT 2009	85.11%	94.9%				

	ACUTE (48 HOURS)					
	Daphnia pulex	*Pimephales promelas*	*Daphnia pulex*	*Pimephales promelas*	*Daphnia pulex*	*Pimephales promelas*
	LC_{50}>56%	**LC_{50}>56%**	**≥90% Survival @ CTC of 52**	**≥90% Survival @ CTC of 52**	**≥50 % Survival in 100% effluent**	**≥50 % Survival in 100% effluent**
JAN 2010	100%	100%				
APR 2010	100%	100%				
JUL 2010	100%	100%				
OCT 2010	100%	100%				
JAN 2011	NOT REPORTED	NOT REPORTED				
APR 2011	NOT REPORTED	NOT REPORTED				
JUL 2011			75%	75%	90%	95%
OCT 2011			75%	100%	85%	100%
JAN 2012			100%	100%	75%	100%
APR 2012			100%	100%	74%	100%
JUL 2012			100%	100%	95%	100%
OCT 2012			100%	100%	84%	100%
JAN 2013			100%	100%	62%	74%
APR 2013			100%	100%	62%	100%
JUL 2013			100%	100%	58%	72%
OCT 2013			100%	100%	54%	100%
JAN 2014			75%	100%	68%	82%
APR 2014			75%	50%	84%	52%
JUL 14, 2014			100%	100%	66%	94%
JUL 21, 2014			94%	100%	60%	92%
OCT 2014			0%	100%	22%	96%
NOV 2014			12%	100%	8%	94%
DEC 2014			74%	100%	30%	100%
JAN 12, 2015			92%	100%	62%	100%
JAN 19, 2015			0%	98%	0%	100%
FEB 2, 2015			0%	96%	0%	98%
FEB 16, 2015			96%	100%	84%	98%
MAR 9, 2015			16%	96%	24%	100%
APR 3, 2015			8%	78%	8%	28%
MAY 4, 2015			92%	96%	80%	74%
JUN 22, 2015			12%	100%	4%	100%
JUL 20, 2015			40%	100%	34%	100%
AUG 3, 2015			0%	100%	0%	100%
AUG 17, 2015			94%	100%	80%	100%
SEP 14, 2015			18%	100%	28%	100%
OCT 5, 2015			16%	100%	24%	100%
OCT 19, 2015			10%	100%	8%	100%
NOV 16, 2015			24%	100%	28%	100%
DEC 7, 2015			54%	100%	42%	100%
JAN 18, 2016			100%	100%	96%	100%
FEB 1, 2016			100%	100%	94%	100%
MAR 1, 2016			96%	100%	80%	100%
APR 4, 2016			100%	100%	94%	100%
JUL 29, 2016			26%	100%	24%	100%
AUG 29, 2016			70%	100%	82%	100%
SEP 12, 2016			96%	100%	96%	100%
OCT 19, 2016			96%	100%	56%	98%
NOV 21, 2016			96%	100%	84%	100%
JAN 10, 2017			98%	100%	82%	100%
APR 4, 2017			94%	100%	80%	100%
JUL 2017			94%	100%	94%	100%
OCT 3, 2017			100%	100%	100%	100%
JAN 4, 2018			100%	100%	100%	100%
APR 3, 2018			100%	100%	100%	100%

NOTE: A grab sample of DSN 001-1 was analyzed in September 2012 to determine compliance with the requirements in Section 10(D) of the existing permit. The sample met the Instantaneous Maximum limits for Aquatic Toxicity (i.e., the LC_{50} = 64.24% for *Daphnia pulex*; the LC_{50} = 68.43% for *Pimephales promelas*).

	CHRONIC (7 DAYS)							
	Pimephales promelas *Dilution Series: 100%, 64%, 32%, 16%, 8%, and 4% Dilution Water: Naugatuck River*				***Ceriodaphnia dubia*** *Dilution Series: 100%, 64%, 32%, 16%, 8% and 4% Dilution Water: Naugatuck River*			
	48 HOUR SURVIVAL	**7-DAY SURVIVAL**	**7-DAY SURVIVAL**	**7-DAY GROWTH**	**48 HOUR SURVIVAL**	**7-DAY SURVIVAL**	**7-DAY SURVIVAL**	**7-DAY REPRODUCTION**
	LC_{50}	**LC_{50}**	**C-NOEC**	**C-NOEC**	**LC_{50}**	**LC_{50}**	**C-NOEC**	**C-NOEC**
SEP 2011	NOT REPORTED	NOT REPORTED	32%	32%	81.6%	NOT REPORTED	16%	16%
SEP 2012	>100%	NOT REPORTED	32%	32%	8.20%	NOT REPORTED	<4%	<4%
AUG 2013	82.8%	NOT REPORTED	32%	32%	2.07%	NOT REPORTED	<4%	<4%
AUG 2014	NOT REPORTED	NOT REPORTED	NOT REPORTED	NOT REPORTED	15.5%	NOT REPORTED	NOT REPORTED	NOT REPORTED
AUG 2015	NOT REPORTED	NOT REPORTED	100%	100%	6.77%	NOT REPORTED	<4%	
SEP 2016	NOT REPORTED	NOT REPORTED	100%	100%	NOT REPORTED	NOT REPORTED	4%	<4%
JUL 2017	NOT REPORTED	NOT REPORTED	100%	100%	NOT REPORTED	NOT REPORTED	32%	4%

The segment of the Naugatuck River that Summit discharges into (6900-00_05) is identified on the Department's 2016 *Integrated Water Quality Report* as being impaired for whole effluent toxicity. A TMDL exists to address the impairment and is summarized in the document titled, *Total Maximum Daily Load Analysis for the Upper Naugatuck River, Thomaston, Connecticut*, which was approved by EPA on August 17, 2005. This TMDL sets forth Waste Load Allocations (WLAs) for acute toxicity and chronic toxicity for three industrial facilities, including Summit, and a POTW in the subject area. The WLAs for Summit are as follows:

At an average flow of 160,000 gpd:

ACUTE WLA FOR SUMMIT **(from Table 4 of the TMDL)**	**CHRONIC WLA FOR SUMMIT** **(from Table 4 of the TMDL)**
16.22 "gallons" of TU_a/second	49.17 "gallons" of TU_c/second
$\frac{16.22\ "gallons" of\ TUa}{second} * \frac{86{,}400\ seconds}{day} = \frac{1{,}401{,}408\ "gallons" of\ TUa}{day}$	$\frac{49.17\ "gallons" of\ TUc}{second} * \frac{86{,}400\ seconds}{day} = \frac{4{,}248{,}288\ "gallons" of\ TUc}{day}$
Divide the WLA by the permitted monthly average flow (160,000 gallons/day)	Divide the WLA by the permitted monthly average flow (160,000 gallons/day)
$\frac{1{,}401{,}408\ "gallons" of\ TUa}{day} * \frac{1\ day}{160{,}000\ gallons} =$ 8.75 TUa	$\frac{4{,}248{,}288\ "gallons" of\ TUc}{day} * \frac{1\ day}{160{,}000\ gallons} =$ 26.5 TUc
WLA_a= 8.75 TU_a	**WLA_c=26.5 TU_c**
$TUa = \frac{100}{LC_{50}}$	$TUc = \frac{100}{NOEC}$

The WLAs were translated into water quality based permit limits (WQBELs) in accordance with the procedures set forth in the TSD and EPA's *National Whole Effluent Toxicity (WET) Implementation Guidance Under the NPDES Program* (DRAFT), November 2004. The NPDES

regulations at 40 CFR 122.44(d)(1)(vii)(B) require that WQBELs be consistent with the assumptions and requirements of any available wasteload allocation in the TMDL. In this case, some of the circumstances under which the TMDL was developed have changed and this has resulted in some conservative assumptions being made, as noted below. One significant change is that the 7Q10 flow used for the development of the TMDL was 12.6 cfs; it is now 10.965 cfs, a reduction of 1.635 cfs or 1,056,728 gpd.

Section 5.4 of the TSD provides guidance for translating a two-value wasteload allocation into limits. This is as follows:

1. Convert the WLA_a to $WLA_{a,c}$:

$WLA_{a,c}$ (in TU_c) = WLA_a (in TU_a) * ACR
$WLA_{a,c}$ = 8.75 TU_a * 10
$WLA_{a,c}$ = 87.5 TU_c

[Note: The ACR (Acute to Chronic Ratio) is the ratio of the acute toxicity of an effluent to its chronic toxicity. The RCSA indicates that an assumption should be made that the ACR is 20, unless information is provided to rebut this assumption. The limited data that exists supports a value lower than 20. EPA's *Technical Support Document (TSD) for Water Quality-based Toxics Control*, March 1991 recommends that a measured ACR be used and that the data necessary for a measured ACR must include at least 10 pairs of acute and chronic test results for the same species. Ten paired sets are not available. In the absence of the data, the TSD suggests a default value of 10.]

2. Determine the Long Term Averages (LTAs) for each WLA:

$LTA_{a,c}$ = $WLA_{a,c}$ * $e^{[0.5\sigma^2 - z\sigma]}$
$LTA_{a,c}$ = 87.5 * 0.321
$LTA_{a,c}$ = 28.0

[Note: The value for the $WLA_{a,c}$ multiplier ($e^{[0.5\sigma^2 - z\sigma]}$) was determined from Table 5-1 in the TSD. A default coefficient of variance (CV) of 0.6 is assumed; the 99th percentile occurrence probability is recommended for the LTA. This results in a $WLA_{a,c}$ multiplier of 0.321].

LTA_c = WLA_c * $e^{[0.5\sigma_4^2 - z\sigma_4]}$
LTA_c = 28.0 * 0.527
LTA_c = 14.8

[Note: The value for the WLA_c multiplier ($e^{[0.5\sigma_4^2 - z\sigma_4]}$) was determined from Table 5-1 in the TSD. A default coefficient of variance (CV) of 0.6 is assumed; the 99th percentile occurrence probability is recommended for the LTA. This results in a WLA_c multiplier of 0.527].

3. Permit limits are derived from whichever performance level is more protective. In this case, the LTA_c is more protective. Therefore, the average monthly limit (AML) and maximum daily limit (MDL) is derived from the LTA_c:

AML = LTA * $e^{[z\sigma_n - 0.5{\sigma_n}^2]}$ AML = 14.8 * 1.55 **AML = 22.9 TU_c**	MDL = LTA * $e^{[z\sigma - 0.5\sigma^2]}$ MDL = 14.8 * 3.11 **MDL = 46.0 TU_c**

[Note: AML: The value for the LTA multiplier ($e^{[z\sigma_n - 0.5{\sigma_n}^2]}$) was determined from Table 5-2 in the TSD. A default coefficient of variance (CV) of 0.6 is assumed and n = 4 is assumed; the 95th percentile occurrence probability was used for the AML. This results in a LTA multiplier of 1.55. MDL: The value for the LTA multiplier ($e^{[z\sigma - 0.5\sigma^2]}$) was determined from Table 5-2 in the TSD. A default coefficient of variance (CV) of 0.6 is assumed; the 99th percentile occurrence probability is recommended for the MDL. This results in a LTA multiplier of 3.11].

4. **Acute Toxicity (MDL)**: Converting the TU_c into a TU_a (using an ACR of 10) results in a TU_a of 4.60. Since $TU_a = \frac{100}{LC_{50}}$, 4.60 TU_a results in an LC_{50} of 21%. Therefore, the MDL for acute toxicity is **21%**, expressed as an LC_{50}.

5. **Acute Toxicity (AML)**: Converting the TU_c into a TU_a (using an ACR of 10) results in a TU_a of 2.29. Since $TU_a = \frac{100}{LC_{50}}$, 2.29 TU_a results in an LC_{50} of 43%. Therefore, the AML for acute toxicity is **43%**, expressed as an LC_{50}.

6. **Chronic Toxicity (MDL)**: Since $TU_c = \frac{100}{NOEC}$, 46.0 TU_c results in a NOEC 2.17%. Therefore, the MDL for chronic toxicity is **2.1%**, expressed as C-NOEC.

7. **Chronic Toxicity (AML)**: Since $TU_c = \frac{100}{NOEC}$, 22.9 TU_c results in a NOEC 4.37%. Therefore, the AML for chronic toxicity is **4.3%**, expressed as C-NOEC.

At an average flow of 330,000 gpd:

ACUTE WLA FOR SUMMIT (from Table 4 of the TMDL)	**CHRONIC WLA FOR SUMMIT** (from Table 4 of the TMDL)
16.22 "gallons" of TU_a/second	49.17 "gallons" of TU_c/second
$\frac{16.22\ "gallons"of\ TUa}{second} * \frac{86{,}400\ seconds}{day} = \frac{1{,}401{,}408\ "gallons"of\ TUa}{day}$	$\frac{49.17\ "gallons"of\ TUc}{second} * \frac{86{,}400\ seconds}{day} = \frac{4{,}248{,}288\ "gallons"of\ TUc}{day}$
Divide the WLA by the permitted monthly average flow (330,000 gallons/day)	Divide the WLA by the permitted monthly average flow (330,000 gallons/day)
$\frac{1{,}401{,}408\ "gallons"of\ TUa}{day} * \frac{1\ day}{330{,}000\ gallons} =$ 4.25 TUa	$\frac{4{,}248{,}288\ "gallons"of\ TUc}{day} * \frac{1\ day}{330{,}000\ gallons} =$ 12.87 TUc
WLA_a= 4.25 TU_a	**WLA_c=12.87 TU_c**
$TUa = \frac{100}{LC_{50}}$	$TUc = \frac{100}{NOEC}$

1. Convert the WLA_a to $WLA_{a,c}$:

$WLA_{a,c}$ (in TU_c) = WLA_a (in TU_a) * ACR
$WLA_{a,c}$ = 4.25 TU_a * 10
$WLA_{a,c}$ = 42.5 TU_c

[Note: The ACR (Acute to Chronic Ratio) is the ratio of the acute toxicity of an effluent to its chronic toxicity. The RCSA indicates that an assumption should be made that the ACR is 20, unless information is provided to rebut this assumption. The limited data that exists supports a value lower than 20. EPA's *Technical Support Document (TSD) for Water Quality-based Toxics Control*, March 1991 recommends that a measured ACR be used and that the data necessary for a measured ACR must include at least 10 pairs of acute and chronic test results for the same species. Ten paired sets are not available. In the absence of the data, the TSD suggests a default value of 10.]

2. Determine the Long Term Averages (LTAs) for each WLA:

$LTA_{a,c} = WLA_{a,c} * e^{[0.5\sigma^2 - z\sigma]}$
$LTA_{a,c}$ = 42.5 * 0.321
$LTA_{a,c}$ = 13.64

[Note: The value for the $WLA_{a,c}$ multiplier ($e^{[0.5\sigma^2 - z\sigma]}$) was determined from Table 5-1 in the TSD. A default coefficient of variance (CV) of 0.6 is assumed; the 99th percentile occurrence probability is recommended for the LTA. This results in a $WLA_{a,c}$ multiplier of 0.321].

$LTA_c = WLA_c * e^{[0.5\sigma_4^2 - z\sigma_4]}$
LTA_c = 12.87 * 0.527
LTA_c = 6.78

[Note: The value for the WLA_c multiplier ($e^{[0.5\sigma_4^2 - z\sigma_4]}$) was determined from Table 5-1 in the TSD. A default coefficient of variance (CV) of 0.6 is assumed; the 99th percentile occurrence probability is recommended for the LTA. This results in a WLA_c multiplier of 0.527].

3. Permit limits are derived from whichever performance level is more protective. In this case, the LTA_c is more protective. Therefore, the average monthly limit (AML) and maximum daily limit (MDL) is derived from the LTA_c:

AML = LTA * $e^{[z\sigma_n - 0.5\sigma_n{}^2]}$ AML = 6.78 * 1.55 **AML = 10.5 TU_c**	MDL = LTA * $e^{[z\sigma - 0.5\sigma^2]}$ MDL = 6.78 * 3.11 **MDL = 21.1 TU_c**

[Note: AML: The value for the LTA multiplier ($e^{[z\sigma_n - 0.5\sigma_n{}^2]}$) was determined from Table 5-2 in the TSD. A default coefficient of variance (CV) of 0.6 is assumed and n = 4 is assumed; the 95th percentile occurrence probability was used for the AML. This results in a LTA multiplier of 1.55. MDL: The value for the LTA multiplier ($e^{[z\sigma - 0.5\sigma^2]}$) was determined from Table 5-2 in the TSD. A default coefficient of variance (CV) of 0.6 is assumed; the 99th percentile occurrence probability is recommended for the MDL. This results in a LTA multiplier of 3.11].

4. **Acute Toxicity (MDL)**: Converting the TU_c into a TU_a (using an ACR of 10) results in a TU_a of 2.11. Since $TU_a = \frac{100}{LC_{50}}$, 2.11 TU_a results in an LC_{50} of 47.4%. Therefore, the MDL for acute toxicity is **48%**, expressed as an LC_{50}.

5. **Acute Toxicity (AML)**: Converting the TU_c into a TU_a (using an ACR of 10) results in a TU_a of 1.05. Since $TU_a = \frac{100}{LC_{50}}$, 1.05 TU_a results in an LC_{50} of 95.2%. Therefore, the AML for acute toxicity is **96%**, expressed as an LC_{50}.

6. **Chronic Toxicity (MDL)**: Since $TU_c = \frac{100}{NOEC}$, 21.1 TU_c results in a NOEC 4.74%. Therefore, the MDL for chronic toxicity is **4.7%**, expressed as C-NOEC.

7. **Chronic Toxicity (AML)**: Since $TU_c = \frac{100}{NOEC}$, 10.5 TU_c results in a NOEC 9.52%. Therefore, the AML for chronic toxicity is **9.6%**, expressed as C-NOEC.

J. WASTESTREAMS AUTHORIZED FOR DISCHARGE UNDER DSN 001A-1:

Cyanide-bearing wastewaters

K. BASIS FOR DSN 001A PARAMETERS, LIMITS, AND MONITORING FREQUENCIES:

This is an internal point for monitoring amenable cyanide. Federal limits at 40 CFR 433.16(b) apply to this monitoring point. The state limits under RCSA 22a-430-4(s)(2) for amenable cyanide can be applied at either the final discharge point or internally.

DSN 001A

PARAMETER	40 CFR 433.16		BPJ	RCSA 22a-430-4(s)(2)		
	Average Monthly (mg/L)	Maximum Daily (mg/L)	Instantan-eous (mg/L)	Average Monthly (mg/L)	Maximum Daily (mg/L)	Instantan-eous (mg/L)
Cyanide, Amenable	0.32	0.86	1.29	0.1	0.2	0.3

L. WASTESTREAMS AUTHORIZED FOR DISCHARGE UNDER DSN 001B:

Hexavalent-chromium bearing wastewaters

M. BASIS FOR DSN 001B-1 PARAMETERS, LIMITS, AND MONITORING FREQUENCIES:

This is a newly-permitted internal point for monitoring Hexavalent Chromium. State limits apply to this monitoring point:

DSN 001B

PARAMETER	40 CFR 433.16			RCSA 22a-430-4(s)(2)		
	Average Monthly (mg/L)	Maximum Daily (mg/L)	Instantan-eous (mg/L)	Average Monthly (mg/L)	Maximum Daily (mg/L)	Instantan-eous (mg/L)
Hexavalent Chromium				0.1	0.2	0.3

XV. MONITORING FREQUENCY

The *Monitoring Schedule* set forth in RCSA section 22a-430-3 prescribes a frequency of weekly for DSN 001-1 based on: a) the category of discharge ("Metal Finishing") and b) the average permitted monthly flow (>10,000 gpd). Therefore, monitoring for categorical parameters and those parameters that are expected to routinely be in the discharge will be weekly in accordance with the *Monitoring Schedule*; monitoring for the other parameters is set on a case-by-case basis.

XVI. EXPRESSION OF EFFLUENT LIMITATIONS

The DSN 001-1 discharge operates continuously. Therefore, the technology and water quality-based permit limits are expressed as average monthly and maximum daily per 40 CFR 122.45(d). Limits are mass-based consistent with 40 CFR 122.45(f)(1) and concentration-based consistent with 40 CFR 122.45(f)(2).

XVII. SOLVENT MANAGEMENT PLAN

Summit's *Solvent Management Plan*, August 2012, ("plan") was approved on October 18, 2012. The plan was submitted as part of the permit application and is considered current and up-to-date. The plan indicates that the only TTO expected to be present in the discharge in Chloroform. Chloroform is reportedly not used on-site in its pure form, but is generated as the result of a reaction between the raw materials used in the plating baths at the facility (i.e., a reaction between sodium hypochlorite and acetone). Consistent with 40 CFR 433.12(b), the plan has been incorporated as a provision of the permit (i.e., Section 5(E)).

XVIII. ANTI-BACKSLIDING

An anti-backsliding analysis was conducted on the final effluent limitations. Anti-backsliding provisions are met. See Attachment 14 for a summary of the limits in the existing permit and the limits in the proposed permit.

XIX. ANTIDEGRADATION

The renewed permit does not reflect any new or expanded discharges as authorized upon issuance. However, the permittee is proposing, during this permit cycle, to treat its on-site groundwater. In order to obtain authorization to treat and discharge this wastestream, the permittee must satisfy to the Commissioner that the treatment of the groundwater will be accomplished in a manner such that all permit limits will be complied with and that all antidegradation requirements be met.

XX. SPECIAL CONDITIONS/COMPLIANCE SCHEDULE

1. The permittee must demonstrate that its wastewater treatment system can provide the necessary treatment of the on-site groundwater. RCSA section 22a-430-4(*l*)(4)(F) allows the commissioner to include any condition in a permit which he or she deems reasonably necessary to ensure compliance with chapter 446k of the Connecticut General Statutes and regulations adopted thereunder as amended, to ensure that his or her actions are consistent with the CWA and to ensure proper operation of a treatment facility or any other part thereof. This condition is added in accordance with that provision. This requirement is included in Section 10(A) of the permit.

2. The permittee must notify the Department and get written approval prior to using the hexavalent chromium treatment system. RCSA section 22a-430-4(*l*)(4)(F) allows the commissioner to include any condition in a permit which he or she deems reasonably necessary to ensure compliance with chapter 446k of the Connecticut General Statutes and regulations adopted thereunder as amended, to ensure that his or her actions are consistent with the CWA and to ensure proper operation of a treatment facility or any other part thereof. This condition is added in accordance with that provision. This requirement is included in Section 10(B) of the permit.

3. The Permittee cannot presently meet water-quality based limits for: Copper and Silver. Therefore, Tables A and B of this permit include interim limits for this parameters. These interim limits are based on the statistical procedures set forth in Appendix E of the TSD. [See Attachment 15]. Section 10 of the permit include a compliance schedule which requires the permittee to undertake remedial actions leading to compliance with final limits for these parameters, which are included in Table A and Table B of the permit. These remedial actions must be accomplished as soon as possible. Until the remedial actions have been fully implemented to the satisfaction of the Commissioner, the permittee shall provide the Department with quarterly status reports describing the efforts that it has taken to implement the remedial actions and meet its final permit limits.

XXI. REFERENCES

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Copper Forming Point Source Category, 40 C.F.R. §468 (2017)

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