Appendix B

Effluent Limitations and Monitoring Requirements

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning **March 1, 2013** and lasting until **February 28, 2018** the discharges from the treatment facility to **Valatie Kill**, water index number H-204-2-7 , Class C(T), shall be limited and monitored by the operator as specified below:

Outfall Number and Parameter	Discharge Limitations		Units	Minimum Monitoring Requirements	
	Monthly Avg.	Daily Max		Measurement Frequency	Sample Type
Outfall 002- Treated Groundwater Remediation Discharge to the Valatie Kill					
Flow	Monitor	36,000	GPD	Continuous	Meter
pH (range)	6.5 to 8.5		SU	Weekly	Grab
Solids, Total Suspended	Monitor	20	mg/l	One/2 weeks	Composite
Solids, Total Dissolved	Monitor	2700	mg/l	One/2 weeks	Composite
Dissolved Oxygen	Monitor	5.0 minimum	mg/l	Weekly	Grab
BOD5	Monitor	30	mg/l	One/2 weeks	Composite
Ammonia, as NH3	Monitor	8.1	mg/l	One/2 weeks	Composite
Oil & Grease	Monitor	15	mg/l	One/2 weeks	Grab
Aluminum, Total	2000	4000	ug/l	One/2 weeks	Composite
Arsenic, Total	50	100	ug/l	One/2 weeks	Composite
Cobalt, Total	Monitor	27	ug/l	One/2 weeks	Composite
Copper, Total	Monitor	86	ug/l	One/2 weeks	Composite
Iron, Total	2000	4000	ug/l	One/2 weeks	Composite
Lead, Total	Monitor	51	ug/l	One/2 weeks	Composite
Manganese, Total	1000	2000	ug/l	One/2 weeks	Composite
Mercury, Total (7)	Monitor	50	**ng/l**	Quarterly	Grab
Phosphorus, Total	Monitor	1000	ug/l	One/2 weeks	Composite
Selenium, Total	Monitor	25	ug/l	One/2 weeks	Composite
Silver, Total	Monitor	22	ug/l	One/2 weeks	Composite
Thallium, Total	Monitor	43	ug/l	One/2 weeks	Composite
Vanadium, Total	Monitor	76	ug/l	One/2 weeks	Composite

Zinc, Total	Monitor	400	ug/l	One/2 weeks	Composite
Acetone	Monitor	280	ug/l	Weekly	Grab
Benzene	Monitor	5.0	ug/l	Weekly	Grab
Bis(2-Ethylhexyl)phthalate	Monitor	5.0	ug/l	Weekly	Grab
2-Butanone	Monitor	280	ug/l	Weekly	Grab
Chlorobenzene	Monitor	10	ug/l	Weekly	Grab
Chloroethane	Monitor	10	ug/l	Weekly	Grab
Chloroform	Monitor	50	ug/l	Weekly	Grab
Chloromethane	Monitor	10	ug/l	Weekly	Grab
2-Chlorophenol	Monitor	Monitor	ug/l	Weekly	Grab
Sum of o, m, & p-Dichlorobenzene	Monitor	27	ug/l	Weekly	Grab
1,1 Dichloroethane	Monitor	10	ug/l	Weekly	Grab
1,2 Dichloroethane	Monitor	10	ug/l	Weekly	Grab
1,1 Dichloroethene	Monitor	10	ug/l	Weekly	Grab
cis 1,2 Dichloroethene	Monitor	10	ug/l	Weekly	Grab
trans 1,2 Dichloroethene	Monitor	10	ug/l	Weekly	Grab
2,4-Dimethylphenol	Monitor	10	ug/l	Weekly	Grab
Ethylbenzene	Monitor	5.0	ug/l	Weekly	Grab
Isopropylbenzene	Monitor	14	ug/l	Weekly	Grab
Methylene Chloride	Monitor	10	ug/l	Weekly	Grab
4-Methyl-2-pentanone	Monitor	140	ug/l	Weekly	Grab
2-Methylphenol	Monitor	10	ug/l	Weekly	Grab
Sum of 3- & 4-Methylphenol	Monitor	10	ug/l	Weekly	Grab
Pentachlorophenol	Monitor	Monitor	ug/l	Weekly	Grab
Phenol	Monitor	10	ug/l	Weekly	Grab
Phenols, Total Chlorinated (9)	Monitor	5.4	ug/l	Weekly	Grab
Phenols, Total Unchlorinated (10)	Monitor	27	ug/l	Weekly	Grab
1,1,2,2 Tetrachloroethane	Monitor	50	ug/l	Weekly	Grab

Tetrachloroethene	5.4	10	ug/l	Weekly	Grab
Toluene	Monitor	5.0	ug/l	Weekly	Grab
1,2,4 Trichlorobenzene	Monitor	10	ug/l	Weekly	Grab
1,1,1 Trichloroethane	Monitor	10	ug/l	Weekly	Grab
1,1,2 Trichloroethane	Monitor	10	ug/l	Weekly	Grab
Trichloroethylene	Monitor	10	ug/l	Weekly	Grab
Trichlorofluoromethane	Monitor	10	ug/l	Weekly	Grab
Vinyl Chloride	Monitor	10	ug/l	Weekly	Grab
Sum of o, m, & p-Xylene	Monitor	15	ug/l	Weekly	Grab
Aroclor 1221 (7)	Monitor	200	ng/l	One/2 weeks	Composite
Aroclor 1242 (7)	Monitor	200	ng/l	One/2 weeks	Composite
Aroclor 1248 (7)	Monitor	200	ng/l	One/2 weeks	Composite
Aroclor 1254 (7)	Monitor	200	ng/l	One/2 weeks	Composite
Aroclor 1260 (7)	Monitor	200	ng/l	One/2 weeks	Composite
beta-BHC	Monitor	38	ng/l	One/2 weeks	Composite
delta-BHC	Monitor	43	ng/l	One/2 weeks	Composite
alpha-Chlordane	Monitor	50	ng/l	One/2 weeks	Composite
gamma-Chlordane	Monitor	50	ng/l	One/2 weeks	Composite
4-4' - DDE	Monitor	10	ng/l	One/2 weeks	Composite
Dieldrin	Monitor	5.0	ng/l	One/2 weeks	Composite
Endosulfan II	Monitor	49	ng/l	One/2 weeks	Composite
Endosulfan Sulfate	Monitor	200	ng/l	One/2 weeks	Composite
Heptachlor	Monitor	10	ng/l	One/2 weeks	Composite
Methoxychlor	Monitor	400	ng/l	One/2 weeks	Composite
WET - Acute Invertebrate		0.3	TUa	Quarterly	see footnote@
WET - Acute Vertebrate		0.3	TUa	Quarterly	see footnote@
WET - Chronic Invertebrate		5.4	TUc	Quarterly	see footnote@
WET - Chronic Vertebrate		5.4	TUc	Quarterly	see footnote@

@ - Whole Effluent Toxicity (WET) Testing for Outfall 002:

Testing Requirements - WET testing shall consist of **Chronic only**. WET testing shall be performed in accordance with 40 CFR Part 136 and TOGS 1.3.2 unless prior written approval has been obtained from the Department. The test species shall be *Ceriodaphnia dubia* (water flea - invertebrate) and *Pimephales promelas* (fathead minnow - vertebrate). Receiving water collected upstream from the discharge should be used for dilution. All tests conducted should be static-renewal (two 24 hr composite samples with one renewal for Acute tests and three 24 hr composite samples with two renewals for Chronic tests). The appropriate dilution series bracketing the IWC and including one exposure group of 100% effluent should be used to generate a definitive test endpoint, otherwise an immediate rerun of the test is required. WET testing shall be coordinated with the monitoring of chemical and physical parameters limited by this authorization so that the resulting analyses are also representative of the sample used for WET testing. The ratio of critical receiving water flow to discharge flow (i.e. dilution ratio) is 2.7:1 for acute, and 5.4:1 for chronic.

Monitoring Period - WET testing shall be performed at the specified sample frequency **for the duration of the discharge authorization.** .

Reporting - Toxicity Units shall be calculated and reported as follows: TUa = (100)/(48 hr LC50) or (100)/(48 hr EC50) (note that Acute data is generated by both Acute and Chronic testing) and TUc = (100)/(NOEC) when Chronic testing has been performed or TUc = (TUa) x (10) when only Acute testing has been performed and is used to predict Chronic test results, where the 48 hr LC50 or 48 hr EC50 and NOEC are expressed in % effluent. This must be done for both species and using the Most Sensitive Endpoint (MSE) or the lowest NOEC and corresponding highest TUc. Report a TUa of 0.3 if there is no statistically significant toxicity in 100% effluent as compared to control.

The complete test report including all corresponding results, statistical analyses, reference toxicity data, daily average flow at the time of sampling and other appropriate supporting documentation, shall be submitted within 60 days following the end of each test period to the Toxicity Testing Unit. A summary page of the test results for the invertebrate and vertebrate species indicating TUa, 48 hr LC50 or 48 hr EC50 for Acute tests and/or TUc, NOEC, IC25, and most sensitive endpoints for Chronic tests, should also be included at the beginning of the test report.

WET Testing Exceedances - If a limit is exceeded then the Department may require the authorized discharger to conduct additional WET testing including Acute and/or Chronic tests. Additionally, the authorized discharger may be required to perform a Toxicity Reduction Evaluation (TRE) in accordance with Department guidance. If such additional testing or performance of a TRE is necessary, the authorized discharger shall be notified in writing by the Department. The written notification shall include the reason(s) why such testing or a TRE is required.

Additional Conditions:

(1) Discharge is not authorized until such time as an engineering submission showing the method of treatment is approved by the Department. The discharge rate may not exceed the effective or design treatment system capacity. All monitoring data, engineering submissions and modification requests must be submitted to:

Mike Komoroske, Section Chief
NYSDEC, 625 Broadway, Albany, New York 12233-7016
518-402- 9802

With a copy sent to:
Andrea Dzierwa, Regional Water Engineer
NYSDEC, 1150 N. Westcott Road, Schenectady, NY 12306-2014
518-357-2045

(2) Only site generated wastewater is authorized for treatment and discharge.

(3) Authorization to discharge is valid only for the period noted above but may be renewed if appropriate. A request for renewal must be received 6 months prior to the expiration date to allow for a review of monitoring data and reassessment of monitoring requirements.

(4) Both concentration (mg/l, µg/l or ng/l) and mass loadings (lbs/day) must be reported to the Department for all parameters except flow and pH. Should the laboratory results show non-detect for any of the listed parameters, the mass loadings for those parameters are not required to be reported.

(5) Any use of corrosion/scale inhibitors, biocidal-type compounds, or other water treatment chemicals used in the treatment process must be approved by the department prior to use.

(6) This discharge and administration of this discharge must comply with the substantive requirements of 6NYCRR Part 750.

(7) The mercury minimization program and PCB minimization program requirements specified below must be complied with.

(8) For the purposes of this authorization, a composite sample shall be composed of a minimum of eight grab samples at a constant sample volume collected at least fifteen minutes apart.

(9) Sum all detected chlorinated phenolic compounds.

(10) Sum all detected unchlorinated phenolic compounds.

(11) Sufficiently sensitive analytical methods, as defined by USEPA, must be used for monitoring purposes.

MERCURY MINIMIZATION PROGRAM

1. **General** - The authorized discharger shall develop, implement, and maintain a Mercury Minimization Program (MMP) for those outfalls which have mercury effluent limits. The MMP is required because the 50 ng/L effluent limit exceeds the statewide water quality based effluent limit (WQBEL) of 0.70 nanograms/liter (ng/L) for Total Mercury. The goal of the MMP is to reduce mercury effluent levels in pursuit of the WQBEL. Note – the mercury-related requirements in this authorization conform to the mercury Multiple Discharge Variance specified in NYSDEC policy *DOW 1.3.10*.

2. **MMP Elements** - The MMP shall be documented in narrative form and shall include any necessary drawings or maps. Other related documents already prepared for the facility may be used as part of the MMP and may be incorporated by reference. As a minimum, the MMP shall include an on-going program consisting of: periodic monitoring; an acceptable control strategy which will become enforceable under this authorization; and, submission of periodic status reports.

A. Monitoring - The authorized discharger shall conduct periodic monitoring designed to quantify and, over time, track the reduction of mercury. Wastewater treatment plant influents and effluents, and other outfalls shall be monitored in accordance with the minimum frequency specified on the mercury limits page. Additionally, key locations in the wastewater and/or stormwater collection systems, and known or potential mercury sources, including raw materials, shall be monitored at the above frequency during the first year of the MMP. Monitoring of key locations and known/potential sources may be reduced during subsequent years if downstream outfalls have maintained mercury levels less than 50 ng/l during the previous year. Additional monitoring must be completed as may be required elsewhere in this authorization or upon Department request. Monitoring shall be coordinated so that the results can be effectively compared between internal locations and final outfalls.

All authorization-related wastewater and stormwater mercury compliance point (outfall) monitoring shall be performed using EPA Method 1631. Use of EPA Method 1669 during sample collection is recommended. Unless otherwise specified, all samples should be grabs. Monitoring at influent and other locations tributary to compliance points may be performed using either EPA Methods 1631 or 245.7. Monitoring of raw materials, equipment, treatment residuals, and other non-wastewater/non-stormwater substances may be performed using other methods as appropriate.

B. Control Strategy - An acceptable control strategy is required for reducing mercury discharges via cost-effective measures, which may include, but is not limited to: source identification; replacement of mercury-containing equipment, materials, and products with mercury-free alternatives where environmentally preferable; more stringent control of tributary waste streams; remediation; and/or installation of new or improved treatment facilities. Required monitoring shall also be used, and supplemented as appropriate, to determine the most effective way to operate the wastewater treatment system(s) to ensure effective removal of mercury while maintaining compliance with other requirements.

C. Annual Status Report - An annual status report shall be submitted to the Regional Water Engineer and to the DER summarizing: (a) all MMP monitoring results for the previous year; (b) a list of known and potential mercury sources; (c) all action undertaken pursuant to the strategy during the previous year; (d) actions planned for the upcoming year; and, (e) progress toward the goal. The annual status reports are due on January 31 for the prior calendar year, and the first such report is due on January 31 in the year following USEPA approval to start discharge from the treatment system to surface water. A file shall be maintained containing all MMP documentation which shall be available for review by NYSDEC representatives. Copies shall be provided upon request.

3. **MMP Modification** - The MMP shall be modified whenever: (a)changes at the facility or within the collection system increase the potential for mercury discharges; (b) actual discharges exceed 50 ng/L; (c) a letter from the Department identifies inadequacies in the MMP; or (d) pursuant to modification of this authorization.

PCB MINIMIZATION PROGRAM

1. **General** - The authorized discharger shall develop, implement, and maintain a Polychlorinated Biphenyl Minimization Program (PCBMP) for those outfalls which have effluent limits for PCBs (including Aroclors). The PCBMP is required because the 200 nanograms/liter (ng/L) effluent limit per PCB Aroclor exceeds the water quality based effluent limit (WQBEL) of 0.001 ng/L for Total PCBs. The goal of the PCBMP is to reduce PCB effluent levels in pursuit of the WQBEL. The basis for the 200 ng/L per Aroclor limit is the EPA Method 608 analytical Minimum Level for Aroclors.

2. **PCBMP Elements** - The PCBMP shall be documented in narrative form and shall include any necessary drawings or maps. Other related documents already prepared for the facility may be used as part of the PCBMP and may be incorporated by reference. As a minimum, the PCBMP shall include an on-going program consisting of: periodic monitoring; an acceptable control strategy which will become enforceable under this authorization; and, submission of periodic status reports.

   A. Monitoring - The authorized discharger shall conduct periodic monitoring designed to quantify and, over time, track the reduction of PCBs. Wastewater treatment plant influents and effluents, and other outfalls shall be monitored using a congener specific analysis method* at a minimum frequency of quarterly. Key locations in the wastewater and/or stormwater collection systems, and known or potential PCB sources, including raw materials as appropriate, shall be monitored using a congener specific analysis method* at a minimum frequency of semi-annually.

   Effluent limit compliance monitoring shall be performed at the frequency specified on the effluent limits page(s) using Method 608. Effluent results from congener analysis required under this PCBMP shall not be used for determining compliance with the 200 ng/L Aroclor limits. Additional monitoring must be completed as may be required elsewhere or upon Department request. Monitoring shall be coordinated so that the results can be effectively: compared between locations; compared between analytical methods; used to identify PCB sources; and, used to gauge the effectiveness of PCB reduction and control efforts.

   * The authorized discharger shall use a congener specific analysis method to measure and quantify Total PCBs at the locations noted above. The congener specific analysis method must achieve a Total PCB reporting limit no greater than 9 ng/L. For methods more sensitive than this specification, the reporting of Total PCB concentrations below 9 ng/L is not required. Sample volumes greater than one liter may be necessary to achieve this limit. Current methodologies approved by the Department for congener specific PCB analyses are as follows:

   (1) **Method 1668C** - Method 1668, Revision C: Chlorinated Biphenyl Congeners in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS. EPA-820-R-10-005, Office of Water, U.S. Environmental Protection Agency, Washington, D.C. (2010).

   (2) **mGBM** - "The Modified Green Bay Mass Balance Method" as detailed in the following publication: Palmer P.M., Wilson L.R., Casey A.C. and Wagner R.E. (2011) - Occurrence of PCBs in raw and finished drinking water at seven public water systems along the Hudson River. Environ. Monit. Assess. 175 (1-4), pp. 487-499.

   The authorized discharger may request, and the Department may optionally approve, alternate methods for congener specific PCB analyses provided all of the following conditions are met: (a) the method can achieve a Total PCB reporting limit of 9 ng/L or less; (b) the analysis method must allow for quantification of all 209 congeners to arrive at a Total PCB concentration; (c) co-elutions among the 209 congeners will be allowed, but the summation of only targeted or toxic congeners does not constitute an analysis for Total PCB; and (d) the accuracy and precision of the alternate method must be demonstrated to be equivalent or superior to Method 1668C and/or mGBM.

   B. Control Strategy - An acceptable control strategy is required for reducing PCB discharges via cost-effective measures, which may include, but are not limited to, source identification, more stringent control of tributary waste streams, remediation, and/or installation of new or improved treatment facilities.

Required monitoring shall also be used, and supplemented if appropriate, to determine the most effective way to operate the wastewater treatment system(s) to ensure effective removal of PCBs while maintaining compliance with other requirements.

C. Annual Status Report - An annual status report shall be submitted to the Regional Water Engineer and to the Bureau of Water Permits summarizing: (a) all PCBMP monitoring results for the previous year; (b) a list of known and potential PCB sources; (c) all action undertaken pursuant to the strategy during the previous year; (d) actions planned for the upcoming year; and, (e) progress toward the goal. The annual status reports are due on January 31 for the prior calendar year, and the first such report is due on January 31 in the year following USEPA approval to start discharge from the treatment system to surface water. A file shall be maintained containing all PCBMP documentation which shall be available for review by NYSDEC representatives. Copies shall be provided upon request.

3. **PCBMP Modification** - The PCBMP shall be modified whenever: (a)changes at the facility or within the collection system(s) increase the potential for PCB discharges; (b) new information is discovered concerning the source, nature, or extent of any PCB source(s) and/or discharges from the facility; (c) actual discharges contain detectable Aroclors as measured with EPA Method 608; (d) a letter from the Department identifies inadequacies in the PCBMP; or (e) pursuant to a modification of this authorization.